# Curriculum and economic development: A comparative study of secondary education in Iran and G7 countries

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Education is the main factor of economic growth in a country, and the curriculum is the heart of any education system. This study focuses on the key roles of education and its relation to economic development as well as the curriculum as a core part of the entire educational drive of nations. In particular, the present study compares the objectives and content of high school curricula in Iran and G7 countries (Canada, France, Germany, Italy, Japan, United Kingdom, and the United States) to achieve some implications for curriculum development in Iran, with a focus on the significant gap between finding a job after secondary graduation in Iran compared with G7 countries. John Stuart Mill's method of agreement and difference was used with the MAXQDA software for data analysis. The results of similarities and differences between objectives and content of curricula indicated that while both educational systems address social and cultural content and objectives, albeit in different ways, Iran lacks economic-oriented content and objectives that connect to occupation, markets, needs of the community and thus economic development ideals.

## Introduction

People are the real wealth of nations (UNDP, 2010) and education plays a crucial role for all individuals to live happier, healthier and more successful. Education is a strong instrument for reducing poverty, creating job opportunities, increasing employment and earnings (World Bank, 2021). According to Woessmann (2016, p. 3), "education is a leading determinant of economic growth, employment, and earnings in modern knowledge-based economies". In 2000, world leaders in New York announced the *United Nations Millennium Development Goals* (MDGs) (UN, n.d.). One of the highlights was global primary education by 2015. Although the focus of the UN Millennium Development Goals on global primary education was important, it was inadequate. Universal primary education should be complemented by targeting secondary education (IIASA 2008). Moreover, The Sustainable Development Goals (SDGs) in Goal number 4 refers to quality education by 2030, to ensure that individuals attain free, equitable and quality primary and secondary education. This proves the importance of secondary education as a link between general education and continuing academic education at university.

Education is one of the vital elements of growth and development in every society and, in general, education decisions and policies have an important impact on the activities of schools and students (Hargreaves et al., 1998). Curriculum development and implementation are core parts of the educational drive of nations for different goals they seek to achieve in the short, medium and long term. Curriculum is considered the "heart" of any formal education system (Priestley & Philippou, 2019). The range of definitions for curriculum include Kridel (2010) who defined planned curriculum as documents that should be covered and closely followed by teachers and institutions. These documents

stipulate what should be taught and what is necessary for learners to learn at each level of education (fidelity perspective). Kranthi (2017) defined curriculum as a dynamic process, due to the changes that occur in any society; the total learning experiences of individuals not only in school but in society as well. An OECD report (2020, p. 11) stated that curriculum is a controversial concept there, with no universal consensus on a definition. However, it is clear that all countries have curricula for their students, and almost all scholars agree on the four main components of any curriculum: objectives, content, method, and evaluation.

In the framework of global reform programs that overhaul economic ideologies in education, the notion of "school failure" has transferred from "individual danger" to "a nation at risk". Improving the quality of education by strengthening educational outcomes and standards for all, and thus reducing "school failure", is depicted as simultaneously increasing a country's social justice and economic advantage in the global marketplace (Mosen-Lowe et al., 2009). Having a comparative study to compare various educational curricula so as to establish or draw inferences as to what drives nations' developmental strides is therefore a welcome development. For the purpose of this study two components of "objective" and "content" were examined in the G7 countries (Germany, France, Italy, Japan, Britain, Canada, and the United States) and Iran.

## A brief review of the G7 and Iran's changes toward economic development

In the 1980s, the U.S. released a report entitled "*A Nation At Risk*" that noticed a serious quality problem in education. According to this report, students' results were mediocre and young graduated students were not learning enough for work, citizenship, and life in the upcoming century. Under the America 2000 Education Strategy formed in 1990 to remove the distance between the knowledge and skills of Americans, the Secretary's Commission on Achieving Necessary Skills (SCANS) was run by the U.S. Department of Labor to specifically inform the Secretary on the level of skills needed to start a job.

In 1989, the UK's Secretary of State for Education, with a need-based qualification approach, supported the benefits of including core skills across the curriculum to improve needed competencies, skills and knowledge of young people for their future life (Werner, 1994). The National Curriculum Council proposed a list of core skills such as working with others in some modern languages for the National Council of Vocational Qualifications approval to determine which competencies should be included in post-secondary education curricula.

The German Federal Ministry of Education and Science, with demands made on skilled workers, sponsored a project in 1990 to the identify core skills required (Werner, 1994). The use of work-related learning techniques, independence, responsibility and ability to work under stress were among the identified core skills.

Japan has developed its Third Basic Plan for the Promotion of Education (2018-22), which focuses on Japan's education policy to support individuals in preparing for 2030.

Curriculum design is one of the parts of this reform package that focuses on the use of active learning strategies to increase the competencies of students.

The Chamber of Deputies in Italy has approved Bill no. 682 in May 2019 on the introduction of the compulsory teaching of civic education. Civic education is a separate subject from the compulsory curriculum at both primary and secondary levels in this country. At the upper secondary level, the teachers assigned to the school for the autonomous activities or, if available, teachers of the legal and economic sectors will be involved in teaching civic education.

The education system in France is regulated by the Department for National Education, Higher Education and Research. The education system in this country is centralised. Students are taught the same subjects until the age of 15. In the French education system, specialisation occurs in secondary education. There are three educational paths to choose: (a) general path (mainly prepares students for long-term higher studies); (b) technological path (mainly prepares students for higher technological studies); and (c) professional path (mainly prepares students for active working life as well as continue their studies in higher education).

Canada, as a host country for numerous international students, is among the world's top destinations for learning. The Council of Ministers of Education (CMEC) in this country was established in 1967 for provinces to collaborate on common curricular goals. Canadian education has been responding to global change, including global economic competitiveness. Knowledge has become the competitive asset and advantage of industrial nations in the global economy, and some subjects like technology and language should be highlighted in the curriculum. This paradigm of global economic competitiveness demonstrates that knowledge is a commodity and that Canadians have a national interest in safeguarding a common global future (Fleming, 1972).

In Iran, according to the constitution approved in November 1911 (Article 15), there were four levels of education: 1. Village primary school; 2. City Primary School; 3. High school; and 4. Higher education course. In 1965, a plan to change the country's educational system was prepared. It was created with the aim of balanced development of physical and mental health, moral and spiritual education, artistic and cultural education, social, economic, and political education. Seven years after the Iranian Revolution, in 1985, the Minister of Education was informed of the resolution of the 59th session of the Supreme Council of the Cultural Revolution on the fundamental changes to the education system, but no fundamental changes took place toward global change and required skills. In general, after the Islamic Revolution of Iran, the curriculum has taken an ideological approach and most of the Qur'anic and religious topics have been emphasised, while in the pre-revolutionary period, more emphasis was placed on issues of ethics and physical education. In Iran, there has always been a tendency toward fidelity, which is defined as institutions and teachers closely following the prescribed curriculum documents in the implementation stage.

**10 to 15 times return for every dollar invested in education (UNESCO, 2012)**

When speaking about education reforms, curriculum reforms as a focus of changes is really considered. Comparing Iranian secondary school graduates with G7 countries reveals that Iranian students cannot use their learned skills for real life. If considered as "school failure" it means that Iranian students are falling behind their international peers and are not qualified enough to compete in a global society. Thus, the curriculum must change to give students a solid grounding in basic skills and science. Moreover, investment decisions proposed by policymakers in secondary education should be consistent with a compatible curriculum that competes globally.

All the previous studies or historical data confirm Benjamin Franklin's claim that "An investment in knowledge pays the best interest." Skills development plays a key role in reducing unemployment, poverty and inequality while increasing growth. It is also a very wise investment, "for every US$1 spent on education, as much as US$10 to US$15 can be generated in economic growth" (UNESCO, 2012).

From a macroeconomic perspective, people with a proper general education have a greater chance to enter occupations. This will decrease social costs, enhance economic performance, encourage innovation, lower the entry age to the labour market and stimulate full employment. Education has a strong payoff when there is economic change and old skills and knowledge are no longer sufficient, individuals will be in a good position if they actually are ready for change and development (Hanushek et al., 2017).

Due to the dynamics of the global economy, education is indeed a production factor affecting both technology and labour directly, while having a great number of positive externalities. There was also a movement to improve the basic education of the population with a growing belief that all people had an education right. However, when economists talk about "education", the focus is not solely on workers getting college degrees. This poses serious challenges to educated people entering the labour market if the education system does not address the required abilities. Thus, a coherent policy vision, political commitment, resources, and respectively a comprehensive curriculum are needed to tackle this challenge (Bradley & Green, 2020).

The World Economic Forum defined education as the "stock of skills, competencies, and other productivity-enhancing characteristics" (World Economic Forum, 2015). As López (2020) pointed out, international tests conducted in the OECD and some developing countries showed that high school students are very different in what they actually learn. Thus, the ultimate goals of education, which is knowledge transfer, learning ability, cognitive and meta-cognitive skills including empathy, curiosity and sociability may not be attained.

Employers, however, pay more when a job requires a higher level of skills provided by education. Thus, although an employee may earn less in the short term to become educated, wages are likely to be higher in the future (Kreps, 1990). This conclusion is true if the assumption holds that individuals are more skilled after getting any level of

education, and their abilities meet market needs. Universally, this is not always true and sometimes, after graduation, people end up being unsuccessful in finding jobs and may feel they have wasted some years of their precious life. Waste here means it does not help them through their career with all the good that education provides.

From another point of view, why are some developing countries experiencing troubles with their education systems when they have sufficient resources to improve? The "curse of natural resources" exists in most developing countries with a wealth of natural resources, such as Iran (Haseeb et al., 2021). While countries with abundant resources can be expected to be economically prosperous and better off than non-resource-rich countries, a comparison of these two groups proves the notion of the paradox of plenty (Aljarallah & Angus, 2020). Developed countries probably addressed this issue and by appropriate reforms in their educational system and curriculum found their way to good economic performance. However, developing countries didn't pay enough attention to this matter owing to institutional, sociopolitical, or ideological factors, ending up with a "curse of natural resources" and a young educated population with irrelevant occupations or jobless. It seems the answer to the questions of why, despite the high aggregate propensity of education in Iran, the linkage between occupation and the educational system has been missing, could be the lack of appropriate reforms.

Any change that affects society will also affect the education system and any change that affects the education system will also affect society (OECD, 2021; Blackmore, 2020; Bennett, 2021; Williams, 2020). Educational system reform and its achievements take quite some time, depending on institutional factors in a society. While gradual changes are the case, policymakers may not take them seriously and may attribute problems to inefficiency of the labour market that underlies business cycles, fluctuations of commodities, and other macroeconomic determinants. If the economy is performing well and policymakers realise how to maintain a good development process, human capital is a must and education will serve in this matter. On the other hand, human capital and education are not leading factors when economic growth is due to exogenous rents such as oil revenues. When there is an ideology added to this set-up, more aspects of education will be ignored and rigid content will survive. Therefore, dedicated governmental expenditure should rise as reinvestment in general education and more importantly, in secondary education which focuses on required skills (Bradley & Green, 2020).

## Background research

Marquez-Ramos and Mourelle (2019), in an investigation in Spain, found that both secondary and higher education show a meaningful relationship with economic growth. This study has important pedagogic implications for developing countries, especially in relation to young people to participating in economic and social life more autonomously. A 10 percent increase in secondary education led to a 1.5 percent increase in economic growth, while an increase of 10 percent in higher education increased economic growth by 0.9 percent (Marquez-Ramos & Mourelle, 2019).

A study by Beltramo and Duncheon (2013) examined social studies curricula content in the United States and some other developed countries

> ... to determine how globalization is presented in state-mandated curricula, and ... evaluate whether the depiction of globalization in each set of standards reflects a human capital or world systems model. ... U.S. state content standards heavily emphasize the economics of globalization; non-U.S. standards present a more holistic picture of globalization. Consequently, U.S. standards are more aligned with a human capital model of education whereas non-U.S. standards reflect a world systems interpretation. (Beltramo & Duncheon, 2013:97)

A study on recent empirical evidence by Woessmann (2015) showed the key role of education for each person and societal prosperity. Education not only leads to more income for an individual but is also a precondition for economic growth (IIASA, 2008). Unfortunately, it seems that the high school curriculum has not been able to address this important matter in most developing countries like Iran.

## The inefficiency of general education in developing countries

Every country that has experienced high growth for a long time makes great efforts to educate its nation and reinforce its human capital. In contrast, there is considerable evidence that many developing countries are not doing enough. Education has a legal claim on public funds for at least two obvious reasons. First, the social returns are likely to be greater than the private returns. Second, some families with low incomes and credit constraints may not be able to invest as much in education as they would like, even if a higher income is guaranteed for a diploma or university degree in the case of a successful job search (UNESCO, 2018). Therefore, public spending on education is established based on impartial opportunity and efficiency.

During the twentieth century, previously established programs in secondary education were mostly diminished and superseded by new systems of secondary education (Kamens et al., 1996). For example, In the Americas, political leaders adopted an "American-style" high school curriculum to address the demands of secondary education (Kamens et al., 2007). Currently, the same problems are apparent in developing countries, and taking some other ideological aspects into account, expecting new levels of challenges is rational. Responses may aim to correct the market's failure to allocate sufficient resources to education, and also increase access to education beyond those who can afford it. The timing of education costs, as well as their amount, are important. Investing in early childhood learning increases the return on investment later in the future. Children need to learn how to learn. If they do not, they may never regain what they lost, and leave a society that has been diminished by lost potential and injured by inequality.

Today, Iranian students need to know more about competing in corporate, national, and international free markets. If they are going to achieve specified goals of the 20-year outlook of their country and put Iran among the economically developed countries, they are must be prepared to compete and cooperate in both national and international free

markets (Imamjome, et al., 2014). A comparison between high school curricula in different countries shows a list of problems with a rigid, centralised curriculum structure, such as in Iran. Moreover, there are certain gaps in the labour market when comparing Iran with some economically developed countries such as the Group of Seven (G7). There are some criteria for evaluating the efficiency of a particular educational system, such as its impact on economic development. Getting a job after graduation based on skills acquired during school years is an indicator of a country's economic prosperity and well-educated students.

Therefore, an analysis of the curriculum could provide a comprehensive insight into the question of why unemployment varies in different countries. This study aims to compare the objectives and contents of high school curricula of Iran and G7 countries (as economically and industrially developed countries) to investigate the unemployment pattern after graduation. The G7 countries comprise Japan, Germany, Canada, USA, UK, France and Italy. These seven countries gathered together in one group called the G7; they are industrialised and have good economic growth. For the aim of this study, the objectives of a curriculum define the changes in the behaviour of a student or what a student should be able to do at the end of a course of study; content defines as the subject, professional knowledge and skills learned during a course or program.

## Method

The method used in this study is qualitative, seeking to understand a research phenomenon in its usual environment that leads to a deep understanding of the studied phenomenon (Aspers & Corte, 2019). In particular, this study is a documentary analytical research with a comparative approach, in which the objectives and content of the curricula in seven countries known as the G7 as well as Iran are examined for patterns of similarities and differences, according to J. S. Mill's method (2006). MAXQDA software was used as a software package for qualitative data analysis. Information was extracted and collected from the search engines Google, Yahoo, Alta Vista, Google Scholar and Find Article, from print and electronic library resources, and from email correspondence in selected countries. Reputable international institutions and databases (Appendix 1) as well as some public web addresses (Appendix 2) were also used to gather information. All documents were translated by translators from IACTI (Iranian Certified Translators and Interpreters). It must be acknowledged that the process of translating the documents was complicated and difficult due to the different languages and finding the appropriate equivalent in Persian.

212 participants, including secondary school teachers, university professors and PhD students in the fields of curriculum and education management helped to confirm and categorise the collected information. In the next step, the Delphi method was used to obtain the opinions of experts and reach a consensus about the studied components. With a 5-point Likert style scale 80% agreement was obtained, which was regarded as attaining a minimum acceptable interrater agreement.

The ruling of the agreement method is that if two or more instances of a phenomenon under study are common to only one causal factor out of several possible causal factors, the causal factor in which all the samples are common will be the cause of the phenomenon under study (that commonality is identified as the cause). The ruling of the difference method is when two or more cases of a phenomenon under study are compared to find what they all do not have in common. If they have all but one thing in common, that one thing is identified as the cause. In the agreement method, two or more cases of an event (effect) are compared to find out what they have all in common, and the detected commonality is known as the cause (Maadandar Arani & Kakia, 2015).

Scientific reasoning is based on the presumption that there are recognisable causal relations between objects and events. Precisely determining the cause and effect is not a simple task and due to the lack of information, one may confuse the two or misidentify one. Mill's methods are efforts to separate a cause from a complex sequence of events. This study benefits from a combination of both agreement and difference methods. This joint method seeks for a single commonality between two or more instances of an event, as well as seeks a common absence of that possible cause. With the joint method of agreement and difference, one may collect several positive and negative instances. Increasing the number of instances observed is intended to make the method more reliable. By using this method, one comes to the conclusion that if due to a deletion process, the antecedent condition always exists when the consequent is available, but when it does not exist, the consequent is absent, the antecedent condition is the cause. Mill's method can only determine evidence of possible causes. However, identifying instances of causation is a vital step in understanding the sequence of an event (Mill, 2006).

Through examining the official portals of the countries, all documents containing components of the curriculum were collected and after confirming the data source, expert approval, and eliminating duplicated data, they were categorised into objective and content components using MAXQDA software. Then, after analysing the collected data, tables were prepared based on the agreement and difference method of J. S. Mill. Finally, similarities and differences in the data were examined. It should be noted that there is more than one curriculum in some examined countries, like the United States, Canada, Germany, and the United Kingdom. In Germany, for instance, there are four different school types with different curricula in each of its 16 federal states at the secondary level, four separate curricula in the UK, and several in Canada as a federal system. In contrast, there is only one integrated national curriculum for high schools in Iran.

According to the literature, education is a key factor in economic growth (Woessmann, 2015; Mariana, 2015), and curriculum is the heart of any education system (Priestley & Philippou, 2019). In this study, under the supervision of experts, related curriculum components of studied countries were collected from reliable sources, translated and reviewed. Finally, the objectives and contents of G7 were compared with Iran. The effect of secondary education on economic growth is justified by using indicators such as a labour force with intermediate education, unemployment with different levels of education, skill sets of secondary education graduates, years of schooling, critical thinking

in teaching, active labour market policies, attitudes towards entrepreneurial risk, and growth of innovative companies. However, the issues of gender equity and female participation in the workforce, which are important indicators of economic growth and social progress, are omitted from this article, owing to length constraints.

## Findings

The eight studied countries were divided into two groups for comparison: (a) Group of Seven, and (b) Iran. The objectives and content included in the curricula of these countries were identified, and then similarities and differences between these two groups were analysed. To show more easily the objectives and content of these 8 countries' curricula as well as a comparison of their similarities and differences, the research findings were classified into questions and tables respectively.

Firstly, what are the similarities and differences in the curriculum objectives of the studied countries? Table 1 shows these, according to J. S. Mill's method (2006).

Table 1: Similarities (•) and differences (--) in curriculum objectives
(DE = Germany)

| Curriculum objectives | Japan | DE | Canada | USA | UK | France | Italy | Iran |
|---|---|---|---|---|---|---|---|---|
| Developing individual, physical, intellectual, and emotional abilities | ● | -- | ● | ● | ● | -- | ● | ● |
| Respect the work and teamwork | ● | -- | -- | -- | -- | -- | -- | -- |
| Economic growth and development | ● | ● | -- | ● | ● | -- | -- | -- |
| Respect for the rights of individuals | ● | -- | -- | ● | -- | -- | -- | -- |
| Attention to human values and virtues | ● | -- | -- | -- | -- | -- | -- | ● |
| Strengthen self-confidence | ● | -- | -- | -- | -- | -- | ● | -- |
| Flourishing of creativity and talents | ● | ● | -- | -- | ● | -- | -- | -- |
| Set tasks and strengthen taking responsibility | ● | -- | -- | -- | -- | ● | -- | ● |
| Inclusive and create equal opportunities for education | ● | -- | -- | ● | ● | -- | ● | -- |
| A tendency towards more practical programs | -- | ● | -- | -- | -- | -- | -- | -- |
| Attention to strengthen-ing motivations for success | -- | ● | -- | -- | -- | -- | -- | -- |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Readiness to enter university | -- | -- | ● | -- | ● | -- | ● | -- |
| Developing occupational skills and readiness to enter the labour market | -- | ● | ● | ● | ● | -- | ● | -- |
| Acquiring knowledge and social skills | -- | ● | ● | ● | ● | ● | -- | ● |
| Achieve progressive programs in professional skills and positions | -- | -- | -- | ● | -- | -- | -- | -- |
| Attention to freedom, cultural diversity, and equality | -- | -- | -- | ● | -- | ● | -- | -- |
| Performance-based education commensurate with the changes in society | -- | -- | -- | -- | -- | ● | ● | -- |
| Lifelong and independent learning | -- | -- | -- | -- | -- | ● | -- | -- |
| Creating more opportunities to access wider cultural level, especially in different languages | -- | -- | -- | -- | -- | -- | ● | -- |
| Integrated intellectual, faith, practical and moral education | -- | -- | -- | -- | -- | -- | -- | ● |

Secondly, what are the similarities and differences in the study of the curriculum content of the studied countries? Table 2 shows these, according to J. S. Mill's method (2006).

Table 2: Similarities (•) and differences (--) in curriculum content (DE = Germany)

| Curriculum content | Japan | DE | Canada | USA | UK | France | Italy | Iran |
|---|---|---|---|---|---|---|---|---|
| Combination of the principles of national identity and culture with democracy, individual freedoms and Western knowledge | ● | -- | -- | -- | -- | -- | -- | -- |
| Content with Chinese beliefs and teachings | ● | -- | -- | -- | -- | -- | -- | -- |
| Textbooks with easy, medium, and difficult levels | ● | -- | -- | -- | -- | -- | -- | -- |
| Mathematics, science, and foreign language | ● | ● | ● | ● | ● | ● | ● | ● |

| Curriculum content | Japan | DE | Canada | USA | UK | France | Italy | Iran |
|---|---|---|---|---|---|---|---|---|
| Occupations and handicrafts | -- | ● | -- | -- | -- | -- | -- | -- |
| Social sciences or studies | ● | ● | ● | ● | -- | ● | ● | ● |
| History and geography | -- | ● | ● | ● | ● | -- | -- | ● |
| Exercising and physical education | ● | -- | ● | ● | ● | ● | -- | ● |
| Hygiene and health | ● | -- | ● | ● | ● | -- | -- | ● |
| Art | ● | -- | ● | ● | ● | ● | -- | ● |
| Music | -- | -- | -- | ● | ● | -- | -- | -- |
| Familiarity with computers, information and communication technology | -- | -- | ● | -- | ● | ● | -- | -- |
| Occupation empowerment, job-related learning | ● | -- | ● | ● | ● | ● | ● | -- |
| Familiarity with occupation and technology | -- | -- | -- | -- | ● | -- | -- | ● |
| Teaching individual, social, and life skills | ● | -- | ● | -- | ● | ● | -- | ● |
| Economy | ● | -- | ● | ● | -- | -- | ● | -- |
| Extracurricular activities such as the school hygiene program | ● | -- | -- | -- | -- | -- | -- | -- |
| Teaching religious principles and beliefs | -- | -- | -- | -- | ● | ● | -- | ● |
| Religion and morality | -- | ● | ● | -- | ● | ● | ● | ● |
| Internship in business or medical professions | -- | ● | -- | -- | -- | -- | -- | -- |
| Chemistry and physics | -- | ● | -- | -- | -- | -- | -- | ● |
| Second or more foreign languages | -- | ● | ● | ● | ● | -- | ● | -- |
| Preparing to enter university | -- | -- | -- | ● | -- | -- | -- | ● |
| Lessons like aviation | -- | -- | -- | ● | -- | -- | -- | -- |
| Each state prepares and teaches its own specific textbooks | -- | -- | -- | ● | -- | -- | -- | -- |
| Technical studies | -- | -- | -- | -- | ● | ● | -- | -- |
| Teaching problem solving and search skills | -- | -- | -- | -- | -- | ● | -- | -- |
| Acquiring professional and innovative independence skills | -- | -- | -- | -- | -- | ● | -- | -- |

| Curriculum content | Japan | DE | Canada | USA | UK | France | Italy | Iran |
|---|---|---|---|---|---|---|---|---|
| National subject-based curriculum | -- | -- | -- | -- | -- | ● | -- | ● |
| Education on comm-unication skills | -- | -- | -- | -- | ● | ● | -- | -- |
| Education on environ-mental and resources protection | -- | -- | -- | -- | ● | ● | -- | -- |
| Global citizenship education | -- | -- | -- | -- | ● | -- | -- | -- |
| Development of creativity | -- | -- | -- | -- | -- | -- | ● | -- |

The percentage of the working-age population with an intermediate level of education in the labour force is presented in Table 3. Intermediate education includes upper secondary or post-secondary, non-higher education according to the International Standard Classification of Education 2011 (ISCED, 2012). Although primary and lower secondary education completion is important, it does not necessarily mean that basic skills have been acquired. Basic literacy and arithmetic skills alone are not enough to get a good job (UNESCO, 2012).

Table 3: Labour force with intermediate education (% of the total working-age population with intermediate education) 2020

| USA | UK | Japan | Italy | Germany | France | Canada | Iran |
|---|---|---|---|---|---|---|---|
| 55.47 | 74.81 | 55.50 | 61.18 | 63.29 | 57.34 | 59.79 | 37.52 |

Notes: The ratio of the labour force with intermediate education to the working-age population with intermediate education in the specified country, year 2020 (except UK, 2019). Appendix 3 explains a procedure for obtaining this data from worldbank.org.
Data source: (*World Development Indicators | DataBank*, 2021)

### What is happening in the economy of developing countries?

The findings of this study suggest that in developing and underdeveloped countries, job seekers would not get their expected jobs, because their secondary education curricula do not prepare them to meet market requirements for jobs. Unfortunately, for those young Iranians interested in jobs related to their secondary education, the market does not have many offers. Most jobs are experience-based and have little to do with the content studied in high school. A fraction of these job seekers may start careers regardless of their education and gain experience over time. Another group may continue into universities, just to ensure that they will end up with a job related to their educational background and level. However, unintended choices of higher education will incur some consequences for countries, such as increasing government expenditure on higher education at universities, increases in unfilled job vacancies, competition over jobs with undergraduate degrees, excess supply in the labour market, wage reduction, impact on the quality of education at universities, and a longer duration of job seeking.

The curriculum must be in line with objectives, tasks and developments to play its important role, as well as transferring the intangible assets of intellectual capacity to the a country's social, economic, and organisational capital (Zheng et al., 2009). The practical component of this theory is education (Ogwara et al., 2013). Problems such as the incompatibility of curricula with labour market demands, and its failure to help high school students to acquire the necessary knowledge, skills, and competencies needed to play an effective role in the competitive world of business, can be considered as one of the reasons for the failure of a system (Sudsomboon, 2010).

If secondary education were economic-oriented, some simple jobs like handicraft professions would be attractive and admirable. As these skills were taught in schools, society through its institutions would support these sets of careers. In addition, these jobs do not require much capital and they are product-oriented, so they will boost the local economy and create jobs for job seekers. In contrast, when secondary education is not productive enough and students don't learn skills to start a job, institutions won't think highly of these simple jobs. Physical capital, natural resources, endowments, and the region's special characteristics will be untouched and the local economy will not flourish. A number of locally feasible professions will be abandoned, and some will postpone their job search after university. As a result, higher unemployment, increased emigration, lower domestic investment and educational expenditure, particularly in secondary education, will emerge.

Table 4: Unemployment levels in G7 countries and Iran according to education level

| Educ. category | Canada | DE | Italy | Japan | France | UK | USA | Iran |
|---|---|---|---|---|---|---|---|---|
| All categories | 9.46% | 3.14% | 9.15% | 2.79% | 8.01% | 3.7% | 8.05% | 9.7% |
| Basic education | 16.73% | 7.88% | 12.65% | N.A | 14.01% | 6.51% | 11.72% | 7.07% |
| Intermediate ed. | 12.83% | 3% | 5.23% | 3.21% | 9% | 4% | 10.46% | 10.29% |
| Advanced educ. | 7.48% | 2% | 5.33% | 2.47% | 5.21% | 2.48% | 5.60% | 14.35% |

Notes: % values in each cell are unemployment levels as % of total labour force in the specified country and the specified education level, year 2020 (except UK, 2019; Germany, 2019, one sig figure). Appendix 4 explains a procedure for obtaining this data from worldbank.org.
Data Source: (*World Development Indicators | DataBank*, 2021)

Table 4 shows that as level of education increases, unemployment rate decreases, taking into account basic, intermediate and advanced levels of education for the G7 countries, whilst for Iran it is an opposite trend. Unemployment is the lowest among those individuals with basic education in Iran and is higher for people with intermediate education. This might suggest that when people start a career with basic education, they are more likely to find and start a job. In comparison, when people tend to find jobs after intermediate education, this is less likely for the reasons mentioned in the previous discussion. Also, for people with advanced education, the unemployment rate is the highest. Approximately one in six graduates could not find a job. This is true even when a segment of these people are in relevant professions. As these people are both over-qualified and highly educated for many jobs, they may not find relevant jobs or may refuse to enter any career. This is an important conclusion that unemployment with advanced

education in Iran is higher than average total unemployment, which supports the findings. On the other hand, for any other country in the sample, unemployment with advanced education is the lowest, which is plausible.

Table 4 shows that in developed countries, after intermediate education, individuals learn more skills that meet the needs of the market and therefore find jobs more easily than persons with only a basic education. While in Iran, higher education is not appropriate for the job market and does not add many skills to students, so they are less successful in finding jobs. A perspective upon this complication is presented in Table 5, using the *Global Competitiveness Index*.

Table 5: Global Competitiveness Index 4.0-edition, 2019

| | USA | UK | Japan | Italy | DE | France | Canada | Iran |
|---|---|---|---|---|---|---|---|---|
| Mean years of schooling (years) | 13.4 | 13.2 | 12.8 | 10.2 | 14.1 | 11.4 | 13.8 | 10 |
| Skill set of graduates 1-7 (Best) | 5.3 | 4.7 | 4.5 | 4.2 | 5.1 | 4.7 | 5.1 | 3 |
| Ease of finding skilled employees. 1-7 (Best) | 5.3 | 5.1 | 4.4 | 4.3 | 4.9 | 4.6 | 4.9 | 3.9 |
| School life expectancy years | 16.3 | 19 | 15.2 | 16.2 | 17.1 | 15.5 | 16.1 | 14.9 |
| Critical thinking in teaching. 1-7 (Best) | 5.1 | 4.8 | 3.3 | 3.7 | 4.9 | 4.1 | 4.9 | 2.6 |
| Active labour market policies. 1-7 (Best) | 4.9 | 4.3 | 4.7 | 2.8 | 4.9 | 4.5 | 4.8 | 2.5 |
| Attitudes towards entre-preneurial risk. 1-7 (Best) | 5.6 | 4.9 | 4.2 | 4 | 4.8 | 4.2 | 4.6 | 3 |
| Growth of innovative companies. 1-7 (Best) | 5.6 | 4.9 | 4.6 | 3.7 | 5.1 | 4.6 | 4.7 | 3.8 |
| Source: World Economic Forum (2019) | | | | | | | | |

Schools are important for economically developed countries. They adjust the curricula as a way to teach students a wide range of high-quality skills. Therefore, schooling in those countries is longer than in Iran. The skill sets of graduates and ease of finding a job demonstrates that individuals in Iran after schooling are in a harder situation to find jobs than in developed countries. Moreover, other important aspects which should be taught by schools and families are also missing in Iran. Critical thinking and attitudes towards entrepreneurial risk prove this issue. It seems schools fail to teach students how to 'think out of the box', be creative, learn skills or take risks. In addition, the active labour market policies and growth of innovative companies indicate that the institutional structure of the Iranian economy and society is not so productive. There exists a routine curriculum that one must complete and then finds her/his way to university with 'all the theories and no skills'.

The data used above illustrate most of the mentioned complications listed in Table 4 concerning the link between higher education and higher unemployment in Iran; but how about the specifically higher unemployment rate in secondary education in Iran in comparison to other countries in the sample? Table 6 shows the quality of skill sets of secondary education graduates.

Table 6: Skill set of secondary-education graduates, 1-7 (Best)

| Index component | USA | UK | Japan | Italy | DE | France | Canada | Iran |
|---|---|---|---|---|---|---|---|---|
| 2017 | 5.34 | 4.36 | 3.95 | 3.99 | 5.24 | 4.24 | 4.71 | 3.58 |
| 2018 | 5.77 | 4.42 | 4.32 | 3.83 | 5.2 | 4.33 | 4.66 | 3.32 |
| 2019 | 5.13 | 4.42 | 4.39 | 3.89 | 4.95 | 4.37 | 4.67 | 2.76 |

Data Source: World Economic Forum (2019)

In Iran, by taking a look at "2019" as a basis of comparison and total skill set quality from Table 5, there is a significant gap between the skill set of intermediate graduates and the total skill set of all graduates. This means that secondary education is below average and poor. This is why people don't learn many skills and will face a hard time during their job search.

## Discussion and conclusion

Educational policies are closely dependent on government programs (Bell & Stevenson, 2006), and governments set the directions of educational systems. The 2020 strategy of developed countries focuses on three elements of development: smart, sustainable and inclusive, which can't be reached in the absence of the major engagement of knowledge and skills of individuals, commonly known as human capital. It is hard to accept that these goals can be achieved in the absence of a good curriculum in particular, and an education system in general (Pelinescu, 2015).

The ultimate goal of education is to provide appropriate opportunities for students to acquire knowledge, skills, abilities, attitudes, and values in a way that helps them in their own lives and their societies. Acquisition of these competencies is expected to start at school and be continued at the university level.

The Iranian education system is related to ideological perspectives and Islamic principles (Sajjadi, 2015). After the Iranian revolution in 1979, Islamic religious thoughts were added to the national curriculum without paying enough attention to economic issues. In the teaching and learning process, principles of Iranian Islamic identity should be preserved (Moharami & Daneshfar, 2022), and issues related to the economy were largely neglected. It is mostly due to the large number of natural resources and educated youth in Iran that the need for economic issues was less important in the national curriculum. The "curse of natural resources" exists in most developing countries with a wealth of natural resources (Haseeb et al., 2021). Iran's economy is not performing well and it is very much an oil-based economy. One plausible direction for research into these circumstances is the education system, specifically the curriculum, which is the heart of any educational system.

As the datasets demonstrate, the gap between G7 countries and Iran in the success rate in finding a job after graduating shows how important schools and acquired skills are during this time. This affects a country's economy and, beyond that, its development. When schooling provides enough skills that accord with market requirements, one could more readily start a job, physical capital would be occupied, production and trade simulated, people could pursue their aspirations and would be less probable to study at higher levels of education for inappropriate reasons. Efficient schooling will train individuals for competitive, domestic opportunities and reduce their wasting of time and government expenditure. However, this is dependent on a comprehensive, domestically integrated curriculum that encourages students' innovativeness, offers them skills to pursue their preferences, and ultimately increasing national production.

As the findings of this study show, the objectives and content of the high school curriculum in Iran include some components that are available in most economically-developed countries; on the other hand, there are many components in the curriculum of these developed countries that are not covered in Iran. Different objectives and content can be used to improve the future curriculum according to the needs of the community.

### Differing objectives of the G7 countries with Iran

The differing objectives include respect for work and teamwork; economic development; respect for an individual's rights; increasing self-confidence; flourishing creativity and talent; inclusive education; creating equal opportunities for education; orientation towards more practical programs; attention and motivation to acquire success; preparing to enter university; strengthening job skills and preparing for the labour market; achieving progressive programs in professional skills and positions; paying attention to individual freedom and cultural diversity; performance-based education in line with changes in society; lifelong and autonomous learning; and creating more opportunities for cultural issues.

It is clear that these components are formed into two parts: 1. Economic principles, such as attention to work, professional and occupational skills; and 2. Social principles, such as attention to freedom, equality and respect. Although sociocultural issues are addressed in Iran, there are shortcomings in economic-oriented issues that connect to occupation as well as skills and knowledge required after graduating from high school. Therefore, a key recommendation for Iranian curriculum developers is to look at this important issue and set policy direction for economic growth and identify content, strategies and programs to improve the economy.

### Differing content of the G7 countries with Iran

It was a combination of national identity and cultural principles with some issues such as principles of democracy; individual freedoms; knowledge of textbooks (in three levels of easy, medium and difficult); handicrafts; music; computer and information technology; job empowerment; work-related learning; economics; extracurricular activities; some optional courses; problem-solving and search skills; communication skills; environmental and

resource protection; global citizenship; and creativity development. If these components are presented in a more general category, they can be included in academic disciplines and professional skills.

In Iran, these principles are presented at very different levels, especially professional skills and job empowerment. It seems that if Iran wants to prepare students to enter society, it is necessary to pay more attention to empowering them at the high school level in the areas of work and occupation.

The findings show that the objectives and content of the curriculum in G7 countries often emphasise the areas of occupation, work and employment and are somewhat economy-oriented, while there is not much emphasis on these areas in Iran. Although the principles and teachings of Islam (the official religion of Iran) are highlighted in the educational system and they emphasise trade, work and occupation, these issues are not properly met in the national, planned curriculum of this country.

Today, acquiring skills, intercultural competencies and efficient manpower are essential factors in the economic growth and social development of any nation (World Bank, 2021). It seems that Iran should pay a lot of attention to skills such as discipline; commitment; being a responsible person; improvement for a better life; mental health; social relations; understanding of social values and norms; environmental protection; safety and health in the workplace; optimal use of natural and environmental resources; and entrepreneurship, creativity and innovation (Shorkaei Ardakani, 2016). These components should be more substantially included in the high school curriculum in Iran.

Preparing and supporting young people for lifelong and autonomous learning with the inclusion of entrepreneurial skills can be one of the most useful goals of education in high school. Therefore, to increase knowledge and skills at the high school level, it is necessary to pay more attention to professional competencies. Curriculum planners need to refocus their role and accelerate reforms to equip students with the skills necessary for successful participation in the labour force. The low rate of unemployment of basic education graduates confirms the success of the curriculum at this level. As mentioned earlier, gender inclusion and gender equity for social progress are interesting topics that were not addressed in this article, but could be priority topics for future research.

Overall, education systems in general, and curricula in particular, serve as drivers of economic development (Yates & Young, 2010). The findings show that a new form of curriculum, combined with a wider range of learning features, in line with the context of different regions, leads to better secondary education and, ultimately, a better life and sustainable economic development for the nation.

## References

Aljarallah, R. A. & Angus, A. (2020). Dilemma of natural resource abundance: A case study of Kuwait. *SAGE Open*, 10(1), article 215824401989970. https://doi.org/10.1177/2158244019899701

Aspers, P. & Corte, U. (2019). What is qualitative in qualitative research. *Qualitative Sociology*, 42(2), 139-160. https://doi.org/10.1007/s11133-019-9413-7

Bell, L. & Stevenson, H. (2006). *Education policy: Process, themes and impact*. Routledge. https://www.routledge.com/Education-Policy-Process-Themes-and-Impact/Bell-Stevenson/p/book/9780415377720

Beltramo, J. L. & Duncheon, J. C. (2013). Globalization standards: A comparison of U.S. and non-U.S. social studies curricula. *The Journal of Social Studies Research*, 37(2), 97-109. https://doi.org/10.1016/j.jssr.2013.03.003

Bennett, E. (2021). An avoidable catastrophe: Pandemic job losses in higher education. *The Australia Institute*, 15 September. https://australiainstitute.org.au/post/an-avoidable-catastrophe-pandemic-job-losses-in-higher-education/

Blackmore, J. (2020). The carelessness of entrepreneurial universities in a world risk society: A feminist reflection on the impact of Covid-19 in Australia. *Higher Education Research & Development*, 39(7), 1332-1336. https://doi.org/10.1080/07294360.2020.1825348

Bradley, S. & Green, C. (Eds.) (2020). *The economics of education: A comprehensive overview* (2nd ed.). Elsevier. https://doi.org/10.1016/C2017-0-02304-2

Fleming, W. G. (1972). *Education: Ontario's preoccupation*. University of Toronto Press. https://www.jstor.org/stable/10.3138/j.ctt1vgw844

Hanushek, E. A., Schwerdt, G., Wiederhold, S. & Woessmann, L. (2017). Coping with change: International differences in the returns to skills. *Economics Letters*, 153, 15-19. https://doi.org/10.1016/j.econlet.2017.01.007

Hargreaves, A., Lieberman, A., Fullan, M. & Hopkins, D. W. (Eds.) (1998). *International handbook of educational change*. Springer Publishing. https://www.springer.com/gp/book/9780792335344

Haseeb, M., Kot, S., Hussain, H. I. & Kamarudin, F. (2021). The natural resources curse-economic growth hypotheses: Quantile–on–quantile evidence from top Asian economies. *Journal of Cleaner Production*, 279, article 123596. https://doi.org/10.1016/j.jclepro.2020.123596

IIASA (2008, August). *Economic growth in developing countries: Education proves key* (Policy Brief #03). International Institute for Applied Systems Analysis. https://previous.iiasa.ac.at/web/home/resources/publications/IIASAPolicyBriefs/pb03-web.pdf

Imamjome, S.M., Ahmadi G., Teymourian, M. (2014) A Comparative Study of Extracurricular Activities in Primary Schools of Iran, America, England, and Malaysia [in Persian]. *Journal of Curriculum Research*, 3(1), 17-65.

ISCED (International Standard Classification of Education) (2011). UNESCO Institute for Statistics. http://uis.unesco.org/en/topic/international-standard-classification-education-isced

Kamens, D. H., Meyer, J. W. & Benavot, A. (1996). Worldwide patterns in academic secondary education curricula. *Comparative Education Review*, 40(2), 116-138. https://doi.org/10.1086/447368

Kamens, D. H. & Benavot, A. (2007). World models of secondary education, 1960-2000. In A. Benavot, C. Braslavsky & N. Truong (Eds), *School knowledge in comparative and historical perspective*, 135-154. https://doi.org/10.1007/978-1-4020-5736-6_9

Kranthi, K. (2017). Curriculum development. *IOSR Journal of Humanities and Social Science*, 22(2), 1-5. https://doi.org/10.9790/0837-2202030105

Kreps, D. M. (1990). *A course in microeconomic theory*. Princeton University Press. https://press.princeton.edu/books/hardcover/9780691042640/a-course-in-microeconomic-theory

Kridel, C. (Ed.) (2010). *Planned curriculum*. SAGE Publications. https://doi.org/10.4135/9781412958806.n355

López, E. (2020). *Education for sustainable development: A roadmap*. UNESCO.

Maadandar Arani, A. & Kakia, L. (2015). *Comparative education: New perspectives* (Vol. 1). Iran Book.

Mariana, D. R. (2015). Education as a determinant of the economic growth. The case of Romania. *Procedia - Social and Behavioral Sciences*, 197, 404-412. https://doi.org/10.1016/j.sbspro.2015.07.156

Marquez-Ramos, L. & Mourelle, E. (2019). Education and economic growth: An empirical analysis of nonlinearities. *Applied Economic Analysis*, 27(79), 21-45. https://doi.org/10.1108/aea-06-2019-0005

Mill, J. S. (2006). *Collected works of John Stuart Mill*. Volume VII - A system of logic Part I [https://oll.libertyfund.org/title/mill-the-collected-works-of-john-stuart-mill-volume-vii-a-system-of-logic-part-i]; Volume VIII - A system of logic Part II [https://oll.libertyfund.org/title/mill-the-collected-works-of-john-stuart-mill-volume-viii-a-system-of-logic-part-ii]. Liberty Fund, Inc.

Moharami, M. & Daneshfar, S. (2022). The political climate of English language education in Iran: A review of policy responses to cultural hegemony. *Issues in Educational Research,* 32(1), 248-263. http://www.iier.org.au/iier32/moharami.pdf

Mosen-Lowe, L. A. J., Vidovich, L. & Chapman, A. (2009). Students 'at-risk' policy: Competing social and economic discourses. *Journal of Education Policy*, 24(4), 461-476. https://doi.org/10.1080/02680930902759712

OECD (2020). *Curriculum (re)design: A series of thematic reports from the OECD Education 2030 project*. Overview brochure. https://www.oecd.org/education/2030-project/contact/brochure-thematic-reports-on-curriculum-redesign.pdf

OECD (2021). *OECD economic outlook, interim report September 2021*. OECD. https://www.oecd-ilibrary.org/economics/oecd-economic-outlook/volume-2021/issue-1_490d4832-en

Ogwara, E. T., Kuria, G., Nyamwaka, E. & Nyakan, B. (2013). Philosophy as a key instrument in establishing curriculum, educational policy, objectives, goals of education, vision and mission of education. *Journal of Education and Practice*, 4(11), 95-101.

Pelinescu, E. (2015). The impact of human capital on economic growth. *Procedia Economics and Finance*, 22, 184-190. https://doi.org/10.1016/s2212-5671(15)00258-0

Priestley, M. & Philippou, S. (2019). Curriculum is – or should be – at the heart of educational practice. *The Curriculum Journal*, 30(1), 1-7. https://doi.org/10.1080/09585176.2019.1598611

Sajjadi, S. M. (2015). Development discourses on the educational system of Iran: A critical analysis of their effects. *Policy Futures in Education*, 13(7), 819-834. https://doi.org/10.1177/1478210315569413

Shorkaei Ardakani, J., Razaghi, H. & Navid Adham, M. (2016*). A collection of approvals of the Higher Education Council (For Schools)*. Organization for Educational Research and Planning (OERP). https://www.sce.ir/en/

Sudsomboon, W. (2010). Applications of competency-based education: In the context of diversity and change. *The Journal of KMUTNB*, 20(2), 370-381. http://www.journal.kmutnb.ac.th/web_old/journal/47318255313174.pdf

UN (n.d.). *Millennium development goals*. United Nations. https://www.un.org/millenniumgoals/

UNESCO (2012). *Youth and skills: Putting education to work, EFA global monitoring report, 2012*. United Nations Education, Scientific & Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000218003

UNESCO Institute for Statistics (2012). *International standard classification of education*. UNESCO Institute for Statistics. [not responding 2 Jan 2023] http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf

UNESCO (2018). *Issues and trends in education for sustainable development*. United Nations Education, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000261954

UNDP (2010). *The Human Development Report 2010: The Real Wealth of Nations*. United Nations Development Programme. https://hdr.undp.org/content/human-development-report-2010

Werner, M. C. (1994). *The development of generic competencies in Australia and New Zealand*. Adelaide: National Centre for Vocational Education Research. http://hdl.voced.edu.au/10707/110284

Williams, J. A. (2020). Guest Editor's note research on international social studies education. *The Journal of Social Studies Research*, 44(4), 323-324. https://doi.org/10.1016/j.jssr.2020.08.001

Woessmann, L. (2016). The economic case for education. *Education Economics*, 24(1), 3-32. https://doi.org/10.1080/09645292.2015.1059801

World Bank (2021). *Education overview*. The World Bank. https://www.worldbank.org/en/topic/education/overview

*World Development Indicators | DataBank* (2021). The World Bank. https://databank.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG/1ff4a498/Popular-Indicators
For Table 3:
https://data.worldbank.org/indicator/SL.TLF.INTM.ZS?end=2021&locations=US-IR-CA-GB-DE-JP-FR&most_recent_year_desc=true&start=2001(see Appendix 3)
For Table 4:
https://data.worldbank.org/indicator/SL.UEM.ADVN.ZS?end=2021&locations=IR-JP-IT-CA-DE-FR-GB-US&start=2000] (see Appendix 4)

World Economic Forum (2015). *Global Competitiveness Report 2015-2016*. http://reports.weforum.org/global-competitiveness-report-2015-2016/education/#view/fn-53
World Economic Forum (2019). T*he Global Competitiveness Report 2019*. http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
Yates, L. & Young, M. (2010). Editorial: Globalization, knowledge and the curriculum. *European Journal of Education*, 45(1), 4-10. https://doi.org/10.1111/j.1465-3435.2009.01412.x
Zheng, J., Hu, Z. & Wang, J. (2009). Entrepreneurship and innovation: The case of Yangtze River Delta in China. *Journal of Chinese Entrepreneurship*, 1(2), 85-102. https://doi.org/10.1108/17561390910956260

## Appendix 1: List of organisations/institutions

International Schools Association (ISA) https://isaschools.org/
American Council on Education (ACE) https://www.acenet.edu/
European Council of International Schools (ECIS) https://www.ecis.org/
Washington Office of Superintendent of Public Instruction https://www.k12.wa.us/
Association of International Educators (NAFSA) https://www.nafsa.org/
The European Education and Culture Executive Agency (EACEA) https://www.eacea.ec.europa.eu/index_en
Eurydice Network https://eurydice.eacea.ec.europa.eu/
*National Education Association (NEA) https://www.nea.org/*
Council of British International Schools (COBIS) https://www.cobis.org.uk/
Council of International Schools (CIS) https://www.cois.org/
International Association for the Evaluation of Educational Achievement (IEA) https://globaleducationcoalition.unesco.org/members/details/175
Australian Curriculum, Assessment and Reporting Authority (ACARA) https://www.acara.edu.au/

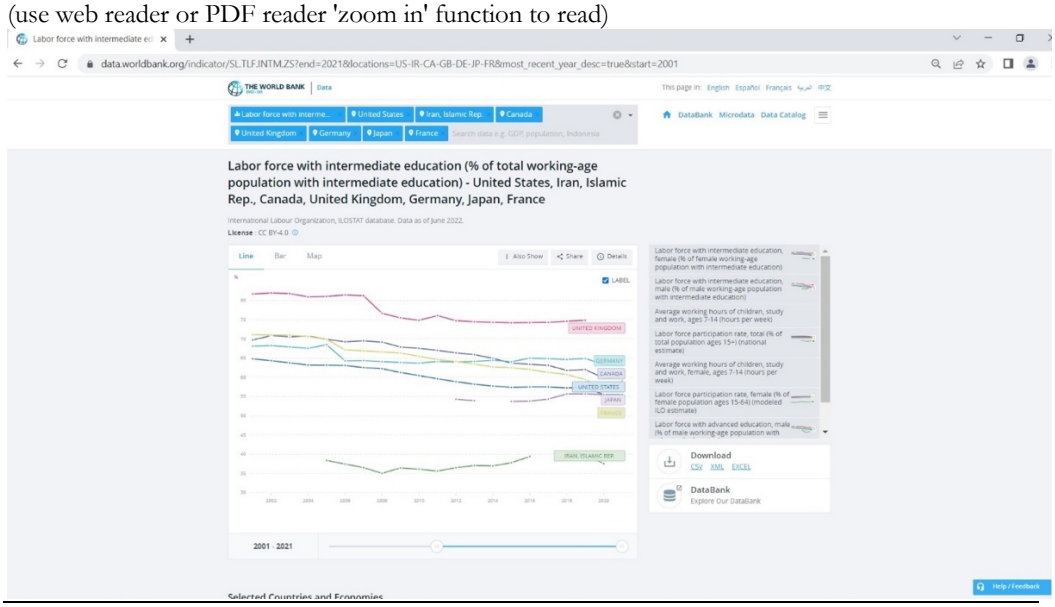
## Appendix 2: list of web addresses

| Country | Web address |
|---|---|
| Canada | https://www.educanada.ca/programs-programmes/secondary-secondaire.aspx?lang=eng<br>http://www.edu.gov.on.ca/eng/curriculum/secondary/ |
| UK | https://www.gov.uk/government/publications/national-curriculum-in-england-secondary-curriculum<br>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840002/Secondary_national_curriculum_corrected_PDF.pdf<br>https://www.goodschoolsguide.co.uk/ |
| Japan | https://education.stateuniversity.com/pages/746/Japan.html<br>https://www.japaneducation.info<br>https://spice.fsi.stanford.edu/docs/daily_life_in_japanese_high_schools<br>https://education.stateuniversity.com/pages/740/Japan-SECONDARY-EDUCATION.html<br>https://www.mext.go.jp/en/policy/education/overview/index.htm |
| Italy | https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/italy<br>https://eurydice.eacea.ec.europa.eu/national-education-systems/italy/secondary-and-post-secondary-non-tertiary-education |

| Country | Web address |
|---|---|
| France | https://eurydice.eacea.ec.europa.eu/national-education-systems/france/france<br>https://eurydice.eacea.ec.europa.eu/national-education-systems/france/secondary-and-post-secondary-non-tertiary-education<br>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<br>https://eurydice.eacea.ec.europa.eu/national-education-systems/germany/secondary-and-post-secondary-non-tertiary-education |
| US | https://world-schools.com/american-curriculum/<br>https://www.goodschoolsguide.co.uk/international/curricula-and-exams/american-curriculum<br>https://www.aralia.com/helpful-information/american-high-school-curriculum/ |
| Iran | http://ensani.ir/file/download/article/20120426185710-5200-189.pdf<br>https://mlseojournal.ctb.iau.ir/article_683723_77edbfc36d3010a92fca1e741cc860d8.pdf<br>https://ketab.ir/book/d54d3f9f-de14-4c90-9c79-ac2e04089517 |

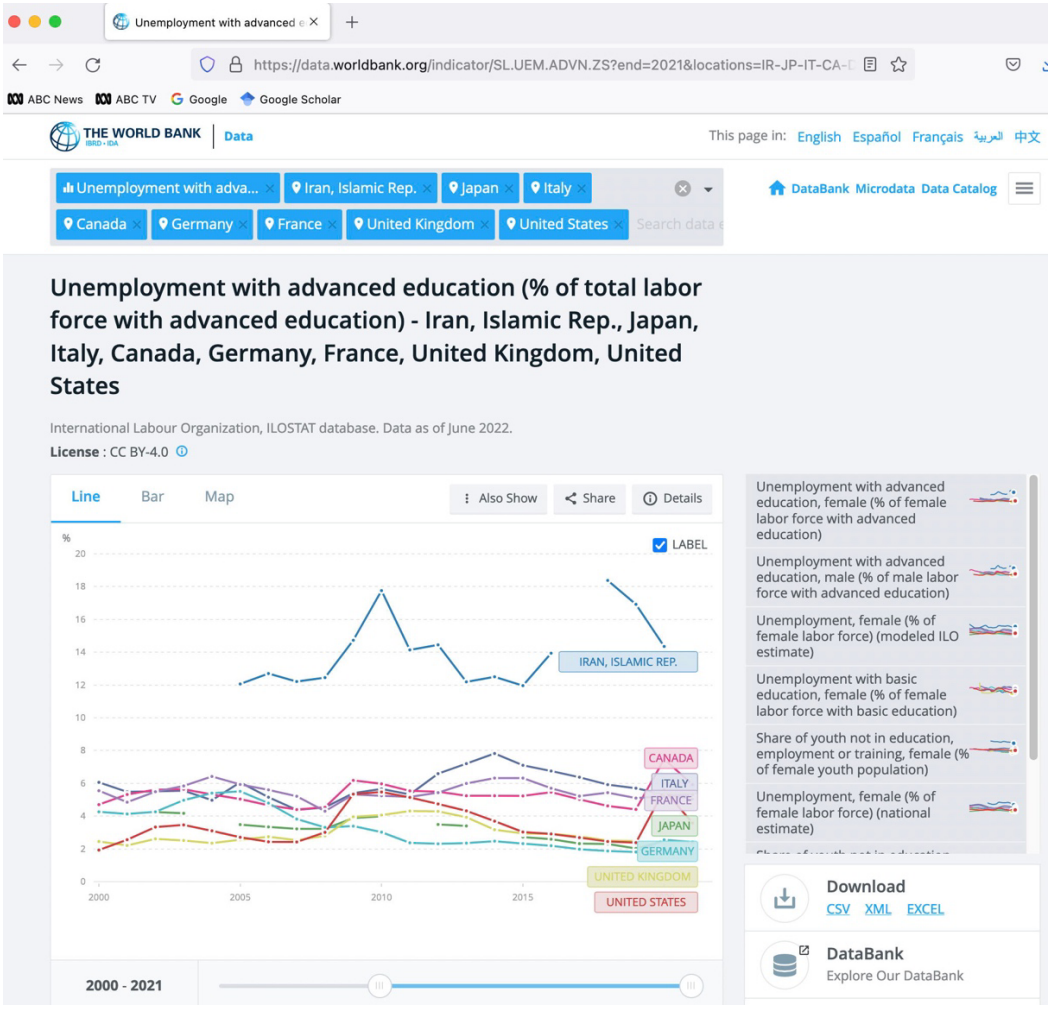
## Appendix 3: Procedure for obtaining data (Table 3) from worldbank.org

https://data.worldbank.org/indicator/SL.TLF.INTM.ZS?end=2021&locations=US-IR-CA-GB-DE-JP-FR&most_recent_year_desc=true&start=2001
(use web reader or PDF reader 'zoom in' function to read)



## Appendix 4: Procedure for obtaining data (Table 4) from worldbank.org

https://data.worldbank.org/indicator/SL.UEM.ADVN.ZS?end=2021&locations=IR-JP-IT-CA-DE-FR-GB-US&start=2000]
(use web reader or PDF reader 'zoom in' function to read)



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http://www.iier.org.au/iier33/toghyani-khorasgani.pdf