



A Comparative Study of Creativity Education Programs for Japanese, Korean and Singapore Primary School Students: Lessons for Iran

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ARTICLE INFO	ABSTRACT
<p>Received: 12 September 2019 Revised: 05 February 2020 Accepted: 28 February 2020 Online: 17 March 2020</p>	<p>The purpose of this study was to investigate the experiences of creativity education in primary schools of Japan, South Korea and Singapore in order to provide useful suggestions for educational policy makers of the Iranian education system. The present study is a qualitative, non-experimental and comparative research using a four-stage approach introduced by George. Z. Bereday and John Stuart Mill's method of agreement. The observation unit of study is macro, and the strategy of countries' selection is "similar systems, similar results". Research findings show that in all three countries, and especially in the last two decades, educational policymakers have been focusing on diminishing the authority of the test-driven system and replacing it with a learner-centered system based on creativity. Also, the similarities between the social systems of all three countries have led to many similarities in the current practices of their educational environments (schools and classes). Other research findings show that in all three countries, numerous national initiatives focusing on the training of creative learners have been approved by educational policymakers. Despite these similarities, it has to be said that the success of rejecting the test-driven system and adopting new teaching-learning approaches are not the same across the three countries. For educational policy makers in Iran, this research finding can imply the dangers that rejection of the test-driven system will create if there is no proper social context.</p>
<p>KEYWORDS</p> <p>Creativity Primary School Japan Singapore South Korea</p>	

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1. Introduction

The Iranian education system, in its new form with more than a century of history, was modeled on the French education system. For many years, this modeling has been an excuse for critics to attribute all of its problems and challenges to the false imitation of the West. The victory of the Islamic Revolution in the late 1970s and the collapse of the Pahlavi regime increased the volume of these criticisms (Vejdani, 2015). In fact, the educational system was at the forefront of the revolutionaries' attack, and they sought to change its various dimensions with utmost force. The main idea of the revolutionaries - backed by many education scholars at the time - was that the Pahlavi regime's education system had failed to nurture the young generation who believed in authentic Iranian / Islamic values, textbooks are inadequate in content, and learners are mostly retaining content that is unrelated to their real lives (Rajaei, 1984). Indeed, critics of the former regime in the early 1980s were heavily criticized those in the education system who imitated Western education systems such as France, Britain and the United States - regardless of the characteristics of Iran's society. For more than a decade, the majority of Iranian education policymakers have been strongly opposed to modeling and borrowing experiences of other countries, emphasized more on the history of education in Islamic civilization. Thus, over ten years, revolutionary teachers were hired, new textbooks - with the least tendency to alien values - were produced and all students' activities took an Islamic form (Yazdanjoo, 2012).

With the beginning of the 1990s and the end of the Iran-Iraq war, the views of statesmen and educational policymakers were moderated. They found that comparing the modern education system with the traditional education system - which is a combination of ambiguities with historical nostalgia - did not fit well with current realities. Thus, over the next two decades, the political system through expanding the quantitative aspects of educational system - such as building new schools, changing teacher training practices, increasing teacher qualification, and revising textbooks- sought to enhance the quality of its graduates. Despite this slight expansion, dissatisfaction with the functioning of the education system never diminished. An overview of mass media, public lectures, specialized meetings, national conferences, and organizational reports showed that all agreed in conveying one message, and that Iran's current educational system, a test-oriented system relies on memorization, lacks the ability to foster creative and innovative learners. Their solution was to focus on the experiences of Eastern countries rather than Western colonists. Thus, most of Iran's education policy-makers have focused on modeling countries such as Japan,

Malaysia, South Korea and Singapore, countries with excellent educational performance and no colonial background in Iran. At the same time, education system stakeholders have attempted to examine the performance of Iranian learners on a wider global scale and from a comparative perspective. Therefore, Iranian students participated in six TIMSS (Trends in International Mathematics and Science Study) and four PIRLS (Progress in International Reading Literacy Study) tests from 1991 to 2015 (Majdafari et al., 2019). The common feature of all these tests is that the performance of Iranian students is significantly lower than the international average. For example, a report by the National Center for TIMSS& PIRLS indicates that Iran ranked 32 out of 35 among participating countries in 2001, 40 out of 45 in 2006, 39 out of 46 in 2011, and 39 out of 46 in 2015. It has witnessed a decline in its position compare to 2011 too (Karimi et al., 2012; Aslani, 2019).

Research literature also shows that Iran's education system has not been successful in nurturing creative learners. About 15 years ago, Shabanzadeh Chamachai (2005) showed that in the Iranian curriculum system, the most emphasis is on the acquisition of all kinds of information and the transfer of scientific facts imposed on learners by mechanical and memory methods. With a short interval, Roshan, Pourkaz and Moradzadeh (2008) investigate barriers of students' creativity and revealed that the lack of educational facilities, inappropriate goals and content of school textbooks, traditional teaching methods and high emphasis on the score as a criterion for evaluation are major obstacles of Iranian students' creativity. Also, Rahmani (2011) in the content analysis of the Farsi book of first Grade of primary school based on Guilford's Creativity Factors concluded that the content of the book is more focused on the level of cognitive memory and there is no proper balance between the different levels of creativity. Salimi and Asareh (2013) also showed that Iranian students did not perform well in mathematics and science subjects, and most of them were unable to answer applied, judgmental, and compositional questions, and were ranked lower in skills such as hypothesis making and problem solving. Barai, Mehram, and Karashki (2013) indicated that in primary school textbooks, the most attention was given to presenting of solution instead of problem solving, situational change, and problem construction - which requires efforts for creative thinking. In two more recent studies, Jamshidpour (2011) and Kazemi (2011) highlighted that the content of science textbooks of primary schools did not place students in ambiguous and creative situations and less attention was paid to developing divergent thinking situations in the classroom. A number of comparative studies that have studied the content of primary school textbooks with other countries also point to the lower status of Iran. For example, Qaderi (1999), by comparing the subject of science in primary education curriculum in Iran and the US showed that the type of scientific activity in American textbooks is more than Iran. Badrian and

Rastegar (2006) through a comparative study of science education standards in Iran and leading countries in TIMSS test found that the content of science courses did not change with the development of science and technology. Also, due to the lack of attention to practical activities, Iranian students are weak in skill and attitude goals. The findings of Zamani (2007) also showed that the authors of Iran's school textbooks did not pay more attention to teach subjects like uncertainty and fanaticism which is required for creative activities.

These research findings have shown to Iran education policymakers and curriculum planners that they need to find new solutions to foster "creative learners". One solution is to use the experiences of successful countries. Accordingly, the purpose of the present study is to identify and explain the similarities and differences of cultivation methods and programs of "creative learners" in primary schools of Japanese, South Korean and Singapore educational systems. Given the nature of the research, the key question is that what are the similarities and differences between the countries under study in terms of "creativity" policies and programs in elementary school.

2. Research Method

This study is a qualitative, non-experimental, applied and comparative research. The present study employed a qualitative comparative method based on regional approach of George. F. Bereday (1964) following its four stages of description, interpretation, juxtaposition, and comparison. Also, the researchers have selected three successful countries of Japan, South Korea and Singapore. The strategy of selection under study is strategy of "similar systems, similar outputs", meaning that all three countries are assumed to be culturally, socially, politically, as well as economically - with respect to the variable of the study that is creativity - have the same educational outputs. International and national organizations' reports as well as journal articles and databases were used for collection of data.

3. Results

This section contains information related to the four stages of description, interpretation, juxtaposition and comparison. First, researchers will describe the phenomenon under study based on the evidence and information obtained from various sources and through the study of documents and reports. Due to the nature of the research, the interpretation (second stage) will

indicate the status of the phenomenon under study in each country separately. In the third stage, the information reviewed in the previous two steps is categorized and put together. The results of this step will provide a framework to pave the way for the next step - comparing the similarities and differences of phenomenon under consideration in selected countries.

A) Description

According to Bereday's approach, the description is a note-taking stage to provide sufficient information about each country:

Japan

It can be said that the politicians of the Islamic Republic of Iran have always mentioned Japan - and especially its role in World War II. Their reminder focused on two things: first, the war with the United States and the condemnation of the atomic bombing of the two cities of Nagasaki and Hiroshima every year; and, second, Japan's post-war developments (Lafeber, 1997). For this reason, the politicians of the Islamic Republic from the early years of the victory of the revolution believed that one of the countries to learn lessons from is Japan. For them, Japan is an eastern country that still adheres many of its traditional customs; its social system emphasizes collectivism, which is similar to many nations in the Asian continent, including Iran. From a political point of view, Japan has a monarchical constitutional system which has a historical background in other Eastern nations and economically is self-sufficient, although it cannot be said with certainty in the age of "globalization" (Salimi and Seifi Atashgah, 2008). All these similarities in social dimensions have made Japan one of the "desirable models" for Iranian education system policymakers, though they are not alone.

The structure of the Japanese formal education system follows the 6+3+3 pattern. In primary education, children attend schools from 8 am to 15:40 pm. Japanese primary school activities - despite the slight environmental difference - can be divided into two general groups: The first group consists of five specific educational activities: Japanese Language, Ethics Education, Physical Education, Science Education, Accounting and Foreign Language. The second group includes flexible educational activities including Living Environment Studies, arts and crafts, and extracurricular activities such as understanding the place of residence (neighborhood and city) (MEXT, 2018). In addition, flexible educational activities can be divided into 5 categories of

integrated studies, special activities (Tokkatsu), student councils, peace and human rights activities and club activities (Tsuneyoshi, 2012). Integrated studies are cross-curricular studies in which pupils develop problem-solving and creativity activities. Children can learn to identify and explore problems of society and life by themselves. Each school decides what subject to be explored. The period of Special Activities (“Tokkatsu”) provides educational activities in which the school and classrooms are considered as “societies”. Through group activities conducted there, independent and practical attitudes are cultivated in children to enable them to build better group life and make better personal selves. To enrich and improve children’s school lives, all the students participate in the various student council activities and researching their school trip destination, children think about war and peace, share views through discussions and other activities on what they can do in the future, and think about the importance of peace and human rights. In clubs for children with similar interests that go beyond the school grade, classroom or subject, children can deepen interaction in a mixed-age group and pursue common interests and pastimes (Cave, 2004).

Among all these programs, there is a short break for rest, exercise activities, staying in the classroom without teacher, eating, taking care of personal hygiene, and cleaning the classrooms, halls and toilets. It is also the turn of all students to perform daily tasks - called *Nicchoku* - such as turning on lamps in classrooms, laboratories and hallways, opening and closing windows, and administering the classroom before the teacher enters and welcomes him (Usui, 1996). Japanese schools provide delicious, nutritionally balanced lunches. School lunches contribute to the sound physical and mental development of children and also have the important role of fostering in children proper understanding and appropriate decision-making concerning food. Rice or bread is served with a main dish of fish or meat, a side dish of vegetables, soup and milk. Special considerations are also made such as using local ingredients and making traditional dishes (Sanborn, 2017). When eating, all students do three things: prepare meals together, eat together, and wash and tidy all dishes together. In addition to in-school activities that foster creative spirit in learners, Japan's primary education system provides opportunities to foster creativity outside of school. Schools, families and local communities work together on a broad range of activities so that the entire society can work to develop the children. For example, local residents support schools, including providing after-school and Saturday learning/experiential programs, by having parents and local residents help to run schools and by having community coordinators set up networks connecting schools and their local communities (Tett, 2004) .

South Korea

The Korean Peninsula experienced many bitter political events during the 20th century, such as the Japanese occupation, World War II, and the formation of two South Korean and North Korean states. Despite these calamities, South Korea has been able to transform itself from a backward country into an advanced industrialized country over the last half century. For this reason, politicians and practitioners of social institutions in many countries of the world seek "learning" from it. The performance of the South Korean educational system in training successful students has also attracted the attention of Iran education system stakeholders and decision-makers. Although the structure of the South Korean education system, similar to Japan, follows the pattern of 6 + 3 + 3, but is divided into two semesters each school year (Mwenda, 2013). According to the American Institute National Center on Education and the Economy in primary school, students in grades one and two are instructed in Korean language and mathematics, as well in subjects called: "Good Life," "Wise Life," and "Happy Life." (NCEE, 2019). These subjects focus on the transition to school life and include basic study skills, problem-solving, creativity, and learning through play. English, social studies, science, arts, music, and physical education are added in the third grade, at which point the social formation subjects are no longer offered. Promotion and graduation are based on internal school-based tests and assessments at all stages of the Korean school system (Mani, 2018). Korean children have a school year of 11 months and often spend over 16 hours a day at school and at afterschool programs called Hagwons (Singh, 2017). In addition, Pupils study a set national curriculum that is updated every 10 years; the latest revision was adopted in 2015 (Mani, 2018).

Singapore

Singapore as a city-state has continued its economic and social progress internationally in the last two decades in competition with Japan and South Korea. In Singapore, the majority of the schools from the primary to the pre-university levels are state schools (known locally as 'national schools') under the Ministry of Education (MOE). Primary school students enrolled in national primary schools study core subjects such as English language, Mother Tongue Language (Chinese, Malay or an approved Indian language), Mathematics and Science. They are also encouraged to participate in Co-Curricular Activities (CCAs) such as sports and music, and Community Involvement Programmes (CIP) where they are involved in service learning projects (Tan, Koh, & Choy, 2016). CCAs are an integral part of our students' holistic education. Through CCA, students

discover their interests and talents while developing values and competencies that will prepare them for a rapidly changing world. CCA also promotes friendships among students from diverse backgrounds as they learn, play and grow together. Participation in CCA fosters social integration and deepens students' sense of belonging, commitment and sense of responsibility to school, community and nation. Every secondary school student takes part in one CCA taken from the following options:

- Clubs and Societies
- Physical Sports
- Uniformed Groups
- Visual and Performing Arts Group

Students who are keen on an activity not offered in school may seek the school's approval to start their own activities. This gives students the chance to pursue their specific interests or ideas, and expands the range of activities available in school (Ministry of Education Singapore, 2018a).

B) Interpretation

At this stage, the emphasis is on examining the status of creativity education in each country in light of previous findings (research evidence). Depending on the purpose of the research, the status of each country is examined separately:

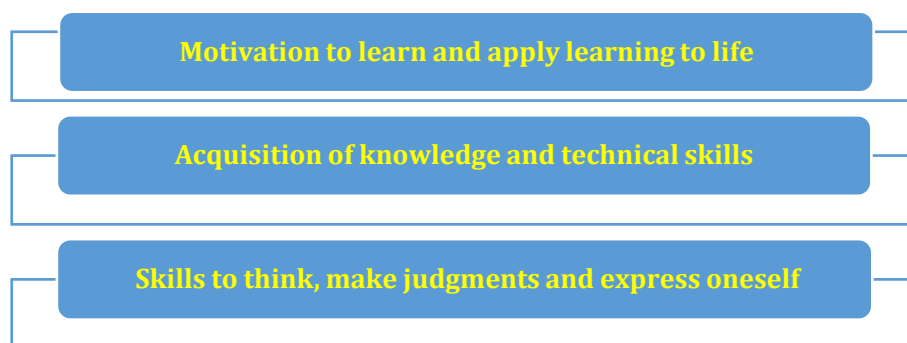
Japan

The concept of creativity, like many human concepts, has its own complexities that make various conceptions inevitable. Many scholars believe that the concept of creativity in the culture of East Asian countries like Japan is not the same as in Western culture (Mason, Nakase & Naoe, 2000; Naoe, 2003; Nakagawa, 1991; Mizuno & Xu, 2018). Traditional Japanese notions of creativity are engaged in a sense of being spiritually permeated and reinforced within a value system derived from animistic, Confucian and Buddhist beliefs (Mizuno & Xu, 2018, P5). So by the late 1990s, many researchers believed in Japan, *Sozosei kyoiku* or creativity education refers to efforts made by schools and industries. The term creativity (*sozo*) is frequently associated with arts, music and special social activities (*Tokubetsu katsudo*) to cultivate creativity (Gill and Ganea, 1998, 3).

In fact, the keywords "effort" and "cultivate" represent two different views on creativity. While in the western world everyone believes that schools can foster creativity in children, in Japan the emphasis is on maximizing the child's talents. In this respect, Shigemasu and his colleagues believe that key words representing creative attitudes such as flexibility, imagination and enterprising are conceptualized differently by Americans and Japanese (Shigemasu et al., 1993 as cited at Girl and Ganea, 1998, 8). Because of these differences and in contrast to their Chinese and German counterparts, Japanese teachers felt creativity was an innate trait and therefore difficult to enhance (Zhou et al., 2013, p. 245). On the other hand, reports made mainly by Japanese researchers over the last two decades have emphasized Japanese students - although performing well in international competitions- lack creativity (Yumino, 2002). Japanese policymakers in the first decade of the 21st century, therefore, sought to incorporate reform programs that focused more on the Western concept of creativity (Girl and Ganea, 1998, p. 10). In fact, these reform programs are, on the one hand, a response to the effects of globalization on Japan's social and educational system, and on the other, an attempt to modify a test-driven education system (Kapitzke & Hay, 2014). Thus, the 1980s saw four steps in Japanese education policy to increase the role of schools in fostering creativity. In the first phase that coincides with the 1980s, a perception of a breakdown in school discipline, with rising juvenile violence and dropout rates blamed on rigidity and uniformity (Beauchamp, 1987). In this situation, creativity is emphasized as individuality: "Individuality was a necessary condition for authentic creativity" (Smith, 2018, p3). The second phase of the 1990s, entitled "Room for Grow" (in Japanese Yutori), began by giving children more freedom and reducing school hours from six days to five days. Policy involved the introduction of integrated studies, the expansion of electives, and the encouragement of "zest for living" (ikiru chikara) and innovative pedagogy (Ibid, p4). The third phase began in the first decade of the 21st century, which coincided with the fall of Japanese students in the PISA 2003 international exam. The decline of Japan's position in the International Student Assessment Program (PISA) has led to the negative view of Japanese educational policymakers on more freedom for learners and the re-orientation of traditional teaching practices. At the same time, emphasis was placed on individual freedoms and authentic Japanese values in the process of nurturing learner creativity. In fact, as Smith (2018, p. 4) put it "creativity is again attached to a (re)discovery and renewal of Japanese cultural identity". Affected by issues such as population crisis, recession and other social problems, the fourth phase of education policy related to creativity education begins with reports from the Japanese Ministry of Education in 2011 and 2013. The authors of the 2013 Japanese Ministry of Education report emphasized that "What is truly needed in Japan is independent-minded learning by individuals in

order to realize independence, collaboration, and creativity.” Based on this, an approach is designed that educates Japanese children on the three pillars of independence, cooperation and creativity. At this stage, creativity is about creating new social and economic values. The extent to which the Japanese education system has been able to achieve this approach requires further research. According to a report prepared by OECD (2018:1) with a curriculum revised around every 10 years, Japan has established a regular cycle to continuously update it, building on evidence from teaching practices. In the new curricular reform, however, Japan has recognized the need to update teaching and learning to foster competencies for the 21st century. In addition to knowledge, this includes developing cross-curricular skills, such as problem-solving and creativity, and good learning habits. To do so, the new curriculum (to be implemented from 2020-2022) focuses on using active learning strategies to develop the competencies of students around three pillars:

Figure 1. Competencies of Japanese Students According New Curriculum (2020-2022)



Source: OECD, 2018

South Korea

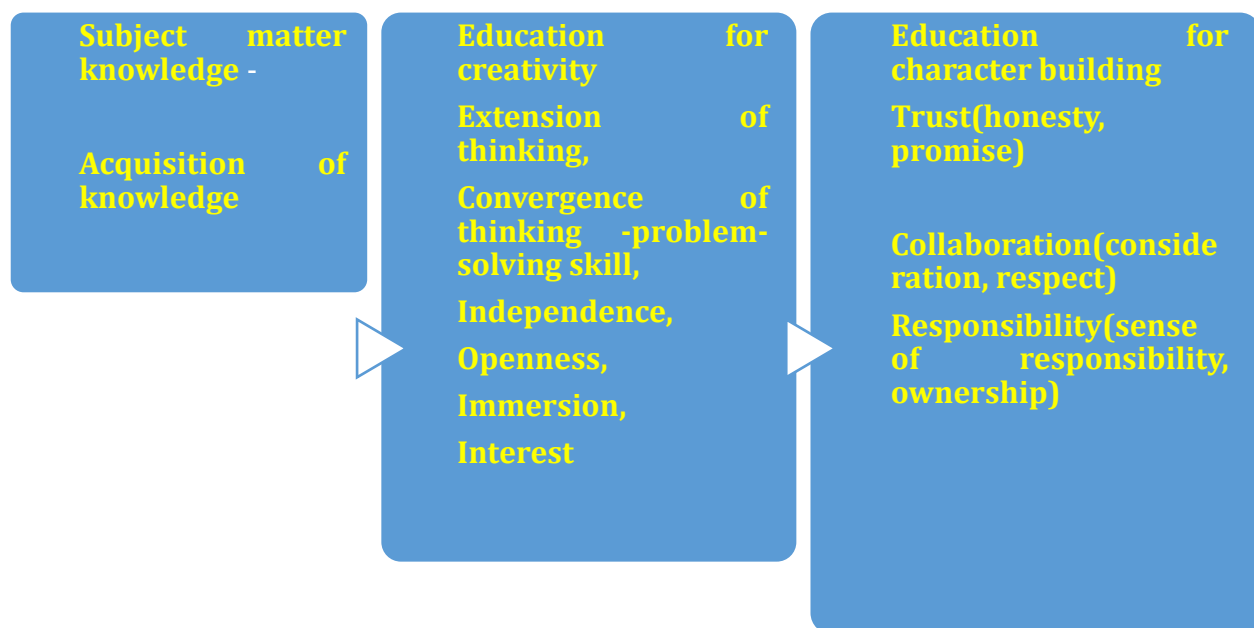
A report by Yong Zhao for the Washington-based Mitchell Institute outlined seven lessons that other countries around the world can learn from Japan, South Korea, Hong Kong and Singapore's successful education systems. These 7 lessons are:

- Expanding definition of education outcomes
- Improving equity of educational opportunities
- Loosening central control
- De-emphasizing testing
- Transforming pedagogy from knowledge transmission to inquiry-based and constructivist

- Capitalizing on technology
- Broadening the curriculum
- Reducing the academic burden (Zhao, 2015)

For the past three decades, policy makers and practitioners in South Korea's education system have been trying to implement new educational reforms aimed at fostering "21st Century Skills". Skills like creativity, communication, collaboration, and higher order thinking skills (Ibid, p7). In fact, the Korean education system on one hand tried not to limit educational output to success in international tests and on the other hand, instead of over-emphasizing on standardized tests and memorizing textbooks, more emphasis was placed on learners' creative activities such as moral education, the arts, physical education, and social skills. Looking at the upstream documents of the Ministry of Education over the past two decades, Soo, Ho and Park (2017) critically review the Korean government's policy efforts for increasing the fostering of creativity in schools. The results of their investigation revealed three themes: increasing flexibility in the national curriculum, developing teachers' creativity, and supporting creative teaching and learning. Each of these themes was further divided into subthemes (p. 80). One of the measures taken by the Korean Ministry of Education was the implementation of the "Exam-free Semester" program in 2013. Through this program, teachers encourage students to participate in learning by offering student-centred activities, such as debates and experiments in the classroom .Another action was to emphasize the training of "creative teachers" and to increase their role in nurturing learner creativity. In fact, since the early 1990s, the Korean government has insisted on changing teacher education programs through the introduction of the "Creativity education" program (So & Kang, 2014). Through this program, the Korean Government insisted on the "Teacher Researcher" and emphasis on teacher motivation through the formation of "Teachers Research Group" in all school programs (So, Hu, & Park p. 82). Third step was supporting creative teaching and learning by reducing the teaching hours and increasing teachers authority to use educational materials that themselves have developed through programs such as the Lesson Study.

Figure 2. Creative and character building education model in Korea



Source: Kim, 2013

Singapore

Since the late 1990s, the Ministry of Education of Singapore through programs such as "Thinking School, Learning Nation" has injected critical thinking and creative thinking into the curriculum, reducing the content of curricula and revising the assessment methods of learners (Chiam, Hong, Ning & Tay, 2014). In addition, programs such as "2004 Teach Less Learn More", "Every school, a good school" and "the Twenty-First Century Competencies Framework" guide the implementation of creative and inventive thinking in the classroom. Through Every school, a good school program, the main step by the Ministry of Education in Singapore was to resource each and every school for providing customized and specialized programs. According to the "Twenty-First Century Competencies Framework", the person who is schooled in the Singapore Education system has a good sense of self-awareness, a sound moral compass, and the necessary skills and knowledge to take on challenges of the future. He is responsible to his family, community and

nation. He appreciates the beauty of the world around him, possesses a healthy mind and body, and has a zest for life. In sum, he is:

- A confident person, who has a strong sense of right and wrong, is adaptable and resilient, knows himself, is discerning in judgment, thinks independently and critically, and communicates effectively.
- A self-directed learner, who questions, reflects, perseveres and takes responsibility for his own learning.
- An active contributor who is able to work effectively in teams, is innovative, exercises initiative, takes calculated risks and strives for excellence.
- A concerned citizen who is rooted to Singapore, has a strong sense of civic responsibility, is informed about Singapore and the world, and takes an active part in bettering the lives of others around him ((Ministry of Education, Singapore, 2018b).

The 21st Century Competencies (21CC) Framework



Source: Li, 2013

A report released by the Organization for Economic Cooperation and Development (OECD) in 2014 highlights five innovations in Singapore's education policy:

- More use of incentives for secondary teachers
- More external evaluation of primary and secondary school classrooms
- More parental involvement in school projects, programs and trips
- More peer evaluation of teachers in secondary education
- More enrichment education for secondary science students (OECD, 2014).

Despite these innovations, some researchers still believe that the Singapore education system is incapable of fostering creative learners (Manley, 2015; Ten et al. 2016). In fact, despite such improvements ability to provide quality universal schooling, consistently tops international educational rankings, produces students that win international competitions, and churns out graduates that are among the most desired in the world (How, 2015) why has Singapore not been able to nurture innovative minds? These are some possible reasons:

- *Competition:* for some countries, acing PISA has become the main aim or one of the aims of education policies (How, 2015), and Singapore falls in one of those countries.
- *Parents' expectations:* Parents are increasingly expected to have their pre-school aged child reading and writing, and with basic math skills before they even enter school
- *Tuitions:* students are under constant pressure of doing well in academics and thus are always under the mentorship of teachers or their parents.
- *Rote learning:* In Singapore, there is so much testing based on rote learning that all the system does is create students who become really good at short term memory
- *Low risk-taking capacity:* students in Singapore go through their education period under stress and pressure, from their parents, teachers and their competitive environment (Abrol, and Gupta, 2018: 389-391).

C) Juxtaposition

According to the information in the previous step, the research evidence based on the interpretation phase is categorized in this step to pave the way for the next step, namely comparing the similarities and differences of the educational phenomenon under study. This phase includes the juxtaposition of the social system, the educational environment, national initiatives and the challenges of creative education. It is also worth noting here that the four factors under consideration are subdivided into other sub-factors. Table 1 shows the four main factors in terms of number of sub-factors:

Table 1: The four main factors of the study, broken down by number of sub-factors

Factor	Sub-factor
Social system	4
Learning environment	4
National Creativity Plans	11
Challenges	3

Juxtaposition of the Social System

The social systems of Japan, South Korea and Singapore have very close ties. In addition to the geographical proximity between Japan and Korea, history and customs shared between the three countries should be mentioned. The rapid pace of economic development in these countries - especially after World War II - has also been the focus of international attention. Social and family cultures also share many similarities in all three countries: the high status of the education system and its role in individual success and the preference of collective culture over individualistic culture in all areas of life such as creativity.

Juxtaposition of Learning Environment

The status of the educational environment in the schools of all three countries - in terms of features such as educational facilities, student performance, educational space, and teacher role - should be taken into account:

Table 2: Juxtaposition of selected countries in terms of the characteristics of the creativity-based learning environment

Factor/ Country	Japan	Korea	Singapore
Educational Facilities	*	*	*
Educational Space	*	*	*
Role of Teacher	*	*	*
Learner Performance	*	*	*

The first point to note is the similarity of schools and classrooms in all three countries in terms of the appropriate space for educational activities (workshops and laboratories) as well as facilities such as sports and art facilities (playgrounds, music halls and Theater, painting, sculpture workshops, etc.) to prepare learners to engage in creative education activities (Kim, 2015). The second characteristic of the educational environment that can be emphasized in this stage is the educational space in the schools of all three countries. This space is influenced by the exam-based system, the strong parental interest in active participation of children in complementary private classes, and emphasis on high scores for admission to prestigious universities. This educational environment has for decades prevented teachers, parents, and students from engaging in creative activity. The superior role and position of the teacher can be seen as one of the common features of the educational system of the three societies, in that the extraordinary obedience of the teacher sometimes impedes the creativity of the learners. The previous three characteristics have made the students' performance in the three areas of "academic achievement" and "creativity" follows the same trend. On the one hand, the performance of learners in all three countries in the TIMSS and PIRLS international tests is brilliant, and on the other hand, the emphasis on vital role of exams has made learners - along with their teachers and parents - pay less for creativity.

Juxtaposition of Creativity Training Programs

After the slight growth of the education system, whose effects are evident in all three countries until the early 1990s, it is important to point out that "creativity" is an important issue in terms of the attention of policy makers and educational planners. In fact, since the 1990s, we have seen the launch of creativity training programs in the Japanese, South Korean and Singapore education systems. Table 3 lists some of the country-specific creativity-driven programs.

Table 3: Juxtaposition of National Creativity Programs by Country and Period

Country/ Period	1980s	1990s	2000s	2010s
Japan	Breakdown in school discipline	Room to Grow	Renewal of Japanese cultural identity	Competencies for the 21st century
South Korea	-	Creativity education	Supporting creative teaching and learning	Exam-free Semester
Singapore	-	Thinking School, Learning Nation	Teach Less Learn More/ Every school, a good school	Twenty-First Century Competencies Framework

The table data can be analyzed in several ways: First, while Japan's education system practitioners have been trying to reduce the role of the test-based system since the mid-1980s in favor of creating more opportunities to foster creativity in learners, educational planners in South Korea and Singapore have been paying attention to the importance of creativity in students since the 1990s. This means that although all three countries in the past decades have more or less emphasize on importance of training creativity in educational programs (for example, Japan since the 1950s), but until the 1990s, there was no specific plan in their National Documents for fostering "Creative Student". Second, the content analysis of these programs in all three countries shows that the educational system's involvement is shifting away from the role of the exam-driven system

towards learner-centered activities. Third, all programs focus on teamwork, learner-centered activities, teacher-participatory roles, curriculum diversity, problem-solving skills, openness, sense of responsibility and collaboration, and intellectual development as ways of enhancing creativity. Fourth, while the South Korean education system still seems to be struggling with parents and community's traditional thinking about role examinations, Japan and Singapore have turned their attention to a generation that can respond to the life's needs of the 21st century.

Juxtaposition of Challenges

Content analysis of the two sections of description and interpretation shows that the officials of education system in all three countries have and continue to face challenges in training "creative people". The cultural affinities between Japan, South Korea, and Singapore have led the "competence-based Confucian system" to play an effective role in educating the young generation. It should also be remembered that educational planners from South Korea and Singapore have learned a great deal from the Japanese (Yang and Yorozu, 2015). For this reason, the economic competition between these three countries (especially South Korea with Japan) has been drawn to the field of education over the last two decades - particularly on the international scene, such as TIMSS and PIRLS). Therefore, all three communities are highly exam-oriented, teacher-centered, and curriculum-based.

Another challenge that can be pointed out is the lack of specific mechanisms for accurate diagnosis and evaluation of creativity. While theoretically, many definitions of creativity have been proposed by psychologists and educators, there are still no precise criteria for identifying creativity and the extent and degree of it in learners. In fact, the nature of creative activities - largely associated with happiness, play, and leisure - while giving learners many opportunities at the same time can free them from their habit of doing homework and reduce their sense of responsibility. For this reason, in analyzing the content of national programs and initiatives, it can be seen that the Japanese are trying - through presenting a new definition of creativity- to reconcile the educational tradition with new ways of learning. This new definition for the Japanese is a combination of the more traditional and Western concepts of creativity. Indeed, while South Korean policymakers still seem to be proving the importance of "creative generation" education, the Japanese are seeking to make a rational adjustment between the Eastern and Western concepts. In this situation, it seems that given the authoritarian structure of Singapore society, its educational system can better and

easily replace the western concept of creativity with the eastern concept, although further research needs to be done to prove it.

Table 4: Juxtaposition of Challenges of Selected Countries in Creative Education

Country/ Challenge	Dominance of test-based system	Parental Resistance	Conceptual ambiguity of creativity
Japan	Decreasing	Slow decline	Critical and obvious
South Korea	Decreasing	Resisting	Unclear
Singapore	Decreasing	Fast decline	Unknown

D) Comparison

At this stage, the research topic is examined precisely with respect to details based on similarities and differences. The design of similarity and difference is based on John Stuart Mill's method of agreement and difference:

Comparison of Social System

In terms of social system, we can determine the similarities and differences between these three countries:

Table 5: Frequency of similarities and differences in term of social systems

Factor	Similarities	Differences
Geographic area	3	0
Population size	0	3
Political system	0	3
Economic situation	3	0
Cultural system	3	0

All three countries are geographically small, in terms of population while Japan is the most populous country (approximately 127 million in 2017), South Korea has an average population (approximately 52 million in 2017) and Singapore's population (nearly 6 million in 2017) is less than many cities in different countries. Also, while the differences in the structure of the political system between the three countries are obvious, they are similar in economic and are among the advanced countries. The sovereignty of Confucian-Buddhist culture in all three countries implies their cultural similarity.

Comparison by Educational Setting

The findings of the previous section illustrate the validity of the strategy of "similar systems, similar results" for the present study, which is also supported by the findings in Table 6. As mentioned earlier, there are many similarities between Japan, South Korea and Singapore. All three nations have provided adequate educational facilities for their children. Also, the educational environment shows that parents are deeply concerned about children's educational achievements and therefore play an active role in their educational affairs. Confucian thinking and Eastern culture in all three societies have made teachers highly respected and their authority overwhelmingly influenced the educational environment. These similarities have led us to see similarities in the performance of learners in all three countries in international competitions.

Table 6: Frequency of Similarities and Differences by Characteristics of the Learning Environment

Factor	Similarities	Differences
Educational Facilities	3	0
Educational Space	2	0
Role of Teacher	3	0
Learner Performance	3	0

Comparison Based on National Creativity Programs

According to the factors listed in Table 7, it is possible to determine the similarities and differences between the countries under study:

Table 7: Frequency of similarities and differences according to national programs

Factor	Similarities	Differences
Availability of National Programs	3	0
Time Priority	2	1
Frequency of Programs	3	1
Contents of Programs	3	0

According to Table 7, the most similarities among the three countries can be attributed to the existence of national programs. Education policy makers in all three countries have recognized the need for national creativity program at all levels of education since the 1990s and have adopted these programs. In terms of time precedence, Japan has naturally been a pioneer in creativity training - especially for primary school children. In terms of the number of national creativity projects, Japan was more active compared to Singapore and South Korea, although during the first decade of the new century we have witnessed the approval of two national projects in Singapore. There is an interesting similarity among three countries focused on national creativity project contents suggest that issues such as learner-centeredness, independence, problem solving, critical thinking and teaching of thinking techniques should be considered in the process of creativity.

Comparison based on Challenges

In terms of creativity program contents and factors listed in Table 8, it is possible to determine the similarities and differences between the countries under study:

Table 8: Frequency of similarities and differences according to challenges of nurturing creativity

Factor	Similarities	Differences
Dominance of Exam-based system	3	0
Parental Resistance	0	3
Conceptual Ambiguity of Creativity	0	3

All three countries face similar challenges in terms of exam-centric domination. A long history of hard exams, repeated teachers' emphasis on periodic examinations, parental pressure on students to score high, and intense competition to enter prominent universities have made the exam system a standard practice in all three countries, so it's hard to find a substitute for it . However, parental resistance to national creativity programs in all three countries is not the same. However, Japanese parents have still maintained a tendency towards a test-driven system. The prevalence of the private education system in South Korea has caused parents to resist new methods of academic evaluation, but the social and political structure of Singapore has made parents less resistant to national creativity programs (Lee, 2019).

4. Conclusion

In terms of social systems, Iran has little proximity with all three countries under investigation. Also, Iran's education system is not similar to any of Japan, South Korea or Singapore. In fact, neither the test-based education system in Iran has full sovereignty, nor have national creativity training programs been adopted. Nevertheless, Iranian policy makers and comparativists tend to be more "learning" from Asian to Western countries. In this tendency, they are not alone, and many countries are interested in learning from successful Asian countries. Therefore, it seems that Iranian policy makers and comparativists are keen to follow "stranger familiar, familiar stranger" approach, one that does not like looking at neighboring countries and most seeking to learn from strangers. However, from the point of view of educating creative children, we are seeing increase attention from policymakers in all three countries. Also, findings showed that similarity of social systems has caused similarity in different dimensions of educational environment in three societies. The findings also indicate that over the past two decades, all three countries have adopted and implemented numerous national initiatives to train creativity. The target groups in most of these projects are especially primary school pupils and then upper secondary students. The latest research findings indicate that all these countries face different challenges in implementing creativity training programs. These findings may include various lessons for Iranian policymakers. The first lesson is that the Iranian educational system must specify its direction to fully comply with the sovereignty of one of the two test-driven or creativity-based strategies. Compared to students in these three countries, Iranian students spend much less time in schools. Simultaneously, parents and educators are subjected to conflicting pressures on the Iran's education system: On the one

hand, many parents want teachers and schools to be tougher on students and also object to the contents of school textbooks and programs. On the other hand, many educational scholars consider the Iran's educational system to be highly test-driven and elitist, seeking more opportunities for children's creative activities. On this basis, it may be argued that Iranians, like the Japanese, have uncertain tendency toward the exam-based or creative-based systems, but one should not forget is that their doubt are not definitely same.

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