Dynamic Education for Individual and National Development: The Case of the Republic of Korea
Dynamic Education for Individual and National Development: The case of the ROK

Summary
The historical World Education Forum in 2015 is held in Incheon in the Republic of Korea (ROK). This paper in the Korean session aims to share the ROK’s experience in educational development with education communities across the world, and reveal ideas to achieve greater quality education in the post-2015 agenda. It is also expected to be utilized as a meaningful document for affirming the pivotal role of education for individual and national development.

This paper consists of three chapters. Chapter 1 presents the successful case of educational and economic development in the ROK. Chapter 2 suggests three factors and three strategies for educational development, which could be referred to as the ROK’s educational model. Lastly, Chapter 3 demonstrates upcoming challenges and the innovative policy direction being taken by the Korean government as its response to challenges in development even beyond 2015.

First, Chapter 1 displays the keen interconnection between the economic and educational development. Since the Six-year Compulsory Education Plan was initiated and implemented in 1959, the government of the ROK has attempted to expand educational opportunities and the range of free education for all. This led to the country’s unprecedented quantitative growth and its step toward qualitative growth on education. It is through this development in education that the ROK continues to foster a skilled labor force, leading to its remarkable economic growth.

The Chapter 2 suggests three factors and three strategies of the ROK’s successful and dynamic educational model. In the rapid process of industrialization, the ROK achieved prominent economic development because of its strategic with well-equipped education provisions. With this, the Korean educational model is considered to have three factors: the government’s leadership for educational development; competent teachers; and societal enthusiasm for education, which serves as an essential foundation of educational achievement. Evidently, it denotes that the Korean society has strongly emphasized education as a fundamental catalyst for individual development as well as national prosperity.

With regard to the ROK’s educational strategies, they are created using three kinds of approaches: systematic, stepped, and sequential. First, the systematic approach is defined as a comprehensive process of planning, implementing, and evaluating
educational policies in a cyclical manner with integrated efforts from central and regional governments, government-affiliated research institutes, and schools. Second, the stepped approach indicates educational development that is closely aligned with the dynamic national development plan. Third and final, the sequential approach means that the ROK has shifted its focus from the quantitative growth of education to its qualitative growth.

Lastly, Chapter 3 presents the ROK’s educational policy responses to new challenges beyond 2015. Given the ethos of creative economy actively supported by the ROK government, it strives to carry out the enhancement of learners’ talents and creativity, along with the reconstruction of education policies as a response to the dynamic demands of industries and society. To cope with upcoming challenges, including low fertility and population aging, the Korean government continues to expand opportunities for quality education for vulnerable learners and establish the foundation of lifelong learning for all. Now, with a wider global partnership for educational development, the ROK will endeavor to implement the post-2015 global education agenda across the world.
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Chapter I

Miracle on the Han River through Education

1-1. Past 60 Years of Educational Development
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Rapid Expansion of Educational Opportunity for All

Expansion of primary and secondary education

After the country’s liberation from the Japanese colonial rule in 1945, the Korean government declared to enforce compulsory education to provide educational opportunities for all students. Starting from the Six-year Compulsory Education Plan in 1959, the Korean government has expanded the range of the country’s compulsory education system into middle schools in 1985, and is now preparing to spread compulsory attendance into high schools. With such efforts to realize “education for all,” the enrollment rate by school level has continuously increased.

With the establishment of the Six-year Compulsory Education Completion Plan (1954–1959) in 1953, primary school enrollment dramatically increased to 91% in four years. This accomplishment has been globally recognized as an exemplary policy initiative to promote opportunities for basic education and widened access to education.

Furthermore, Early Childhood Care and Education (ECCE) has played a pivotal role in the establishment of a fundamental basis of the “ready to learn” scheme for every child in the Republic of Korea (ROK). The ROK established the Early Childhood Education Promotion Act in 1982, which led to an increase in the number of kindergartens of more than 3,000. This led to the formation of a total of 8,826 kindergartens as of 2014. With this, kindergarten education has continued to experience qualitative growth since the 2000s. In particular, the government introduced the nationally standardized curriculum called the Nuri Curriculum, which aims to provide equal opportunities for quality education for children aged 3–5 in both kindergartens and childcare centers, in 2012. With this curriculum, the government provides the financial support for tuition and other expenses. This has contributed to the country’s establishment of a system to ensure “equity at the starting line” of children.
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[Figure 1-1] Quantitative growth of Korean education


Development by School Level

Such rapid expansion that characterizes a dimension of Korean education is clearly indicated in the increased number of schools, students, and teachers by education level. For instance, the number of high schools has increased from 701 in 1965 to 2,300 at present. In addition, the student-teacher ratio in high schools has dropped from 30.2 in 1965 to 13.7 in 2014. Such a dramatic improvement is the result of nation-wide efforts to create an appropriate educational provision for quality education and to fulfill different educational demands. This indicates a rapid qualitative growth of education in the ROK.
Figure 1-2: Quantitative growth of education in the ROK


The Remarkable Achievement in PISA–TIMSS–WorldSkills International

- **Qualitative enhancement of education: high achievement in PISA and TIMSS**

Along with the expansion of educational opportunities, the ROK has continuously strived to achieve quality education. This can be seen in the way the ROK is internationally renowned for its outstanding performance in the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS), maintaining high rankings in reading, mathematics, and science.
Among 34 member countries of the Organisation for Economic Co-operation and Development (OECD), the ROK ranked 1st in Mathematics, 1st and 2nd in Reading, and 2nd to 4th in Science. Among 65 countries, including OECD member countries, the country still maintains its high rankings, being 3rd to 5th in Mathematics, 3rd to 5th in Reading, and 5th to 8th in Science.

The ROK also displays top-tier performance in computer-based assessment of mathematics (CBAM) and digital reading assessment (DRA). In PISA 2012, in CBAM and DRA, the country ranked 3rd in Mathematics and 2nd in Reading among the 32 participating countries, and ranked 1st in both assessments among OECD member countries. This outcome reflects the high level of educational achievement in the ROK and the fact that there is a constant effort to move forward with sophisticated teaching and learning methods in this knowledge-based society.

In TIMSS 2011, Korean students in their 4th grade also ranked 2nd in Mathematics achievement and 1st in Science achievement, while those in their 8th grade ranked 1st in Mathematics achievement and 3rd in Science achievement.

※ Mathematics achievement of 4th graders: 2nd (’95) → 2nd (’11)
※ Science achievement of 4th graders: 1st (’95) → 1st (’11)
**Performance in WorldSkills International**

Since its first participation in WorldSkills International, a biannual event, in 1996, the ROK has won the top award (the Albert Vidal Award) 18 times as of 2014. This can be considered as an outstanding achievement in the area of technical educational and vocational training.

**Salient Achievement in SCI Journal Publication**

Through secure funding and strategic investment in research and development (R&D) across diverse disciplines and interdisciplinary areas, the ROK has ranked 10th in the world as of 2012 in the SCI journal publication rate. This reveals the nation’s high R&D capacity and continuous endeavor in the education field. In addition, as of 2013, the country has applied a total of 430,000 intellectual property rights, positioning itself in the IP5\(^1\) (Intellectual Property Five (5)), along with the United States, Japan, Europe, and China, while attaining the world’s top semiconductor technology.

![Figure 1-3](image_url) The ROK’s status of SCI journal publication


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1) The five IP offices (IP5) is the name given to a forum of the five largest intellectual property offices in the world, approximately of 90% of world’s patent application, and is comprised of offices in the United States, Japan, China, Europe and the ROK.
1-2. Past 60 Years of Economic Growth

Since the establishment of the ROK in 1948, the country has developed itself enough to belong to the world’s top 10 economies, away from its previous status as the least developed country. With this, the country’s per capita income achieved unprecedented growth from USD 69 in 1955 to over USD 28,000 in 2014.

[Figure 1-4] Changes in per capita income (USD)


The 7th Country of the '20-50 Club'

In 2012, the ROK became the 7th country to join the 20-50 Club (as a country with a population surpassing the 50 million mark while maintaining a per capita income of over USD 20,000). This achievement can be recognized as a significant landmark in the ROK’s dramatic journey of national growth. The country’s noticeable record has also attracted great attention from the international society.
The ROK laid a fundamental basis of economic development through the labor-intensive light industry between 1948 and 1969. Building upon the capital-intensive heavy and chemical industries in the 1970s, the country attempted to position itself as a technological power with heavy investment in technology-intensive industries, including information and communication technology (ICT), in the 1990s. With this, the economic landscape continues to evolve in case of a new demand in the innovative market.

Major export products have changed over time, in alignment with the rapid industrial transitions, from labor-intensive products, such as textile, plywood, and wigs in the 1970s, to technology-intensive ones including semiconductors, automobiles, flat panel displays in 2013.

[Figure 1-5] Changes in major export products


In particular, the record shows a great proportion of labor-intensive industrial products, such as iron and clothing, in the 1960s–1970s, which later shifted toward capital-intensive heavy and chemical industrial products, including automobiles and vessels, during the 1990s. At the same time, the number of trading partners has increased from 59 to 213. With this, it can be seen that the ROK’s export-oriented industrial development has accelerated its economic development. From the 2000s, the ROK successfully shifted toward IT-based industrial products, such as semiconductors
and flat panel displays, revamping the structure of economy and raising its competitiveness in the world market.

[Figure 1-6] Changes in major export products and target countries

<table>
<thead>
<tr>
<th>Year</th>
<th>Major export products</th>
<th>Major products and goods (unit: %)</th>
<th>The number of major target countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940</td>
<td>Squids, agar, salt, dried shrimps (80% seafood)</td>
<td></td>
<td>2 (1946)</td>
</tr>
<tr>
<td>1950</td>
<td>Agar, rice, tungsten</td>
<td></td>
<td>No data</td>
</tr>
<tr>
<td>1960</td>
<td>Iron, tungsten, ginseng</td>
<td></td>
<td>59 (1965)</td>
</tr>
<tr>
<td>1970</td>
<td>Clothing, plywood, wigs</td>
<td></td>
<td>163 (1975)</td>
</tr>
<tr>
<td>1980</td>
<td>Vessels, clothing, footwear</td>
<td></td>
<td>185 (1985)</td>
</tr>
</tbody>
</table>


A Member Nation of OECD DAC

As the 24th member nation of the OECD Development Assistance Committee (DAC) in 2010, the ROK took the leap to transform itself from a beneficiary to a donor country. It has been acknowledged that the ROK has become a bridge between developing and developed countries by hosting a series of global meetings including the G20 Seoul Summit in 2010, the Fourth High Level Forum on Aid Effectiveness in 2011, the 2012 Seoul Nuclear Security Summit, and the 5th APEC Education Ministerial Meeting in 2012.
1-3. Inter-related Virtuous Cycles of Educational Development and Economic Growth

Substantial evidence shows that Korean education has revised its system as a response to the rapid process of industrialization. Education has greatly contributed to the fostering of a skilled labor force. With this, it is evident that the Korean government has steadily expanded educational opportunities and its diverse channels to meet dynamic economic demands, aligning with the national development plan. As shown in the figure below, continuous improvements in the enrollment ratio in primary and secondary education (99%) and higher education (70.9%) accompanied the rapid increase of GDP growth rates from USD 1,779 in 1980 to USD 25,977 in 2013. This implies a close interrelation between the economic and educational development in the ROK.

[Figure 1-7] Gross enrollment ratio of primary, secondary & higher education and GDP growth rates of the ROK

□ **Well equipped with a highly skilled labor force**

Education in the ROK aimed to produce the right people equipped with diligence and dedication during the period of industrialization. Schools were expected to provide adequate knowledge, skills, and teach attitude to students. In particular, social studies and moral education played a crucial role in nurturing students’ talents and social attitude, while underlining cooperation and solidarity as required by the societal constitution.

□ **Active response to industrial and social demands**

Social demand for a highly productive labor force has continuously multiplied during the time of industrial development in the past few decades. In response, the education system in the ROK has reflected such demands, and has provided grounds to boost labor productivity. With regard to labor productivity, the country reached 110.2% in 2010, which is considered as truly remarkable progress considering its rate of 7.8% in 1975. Aside from this, the country’s manufacturing sector ranked 2nd among the 19 OECD member countries, recording USD 97,382 in 2013.

[Figure 1-8] Labor productivity per person in the ROK

![Figure 1-8](image)

Chapter II

The Model of Korean Education: Dynamic and Future-Oriented Education

2-1. Three Key Elements of Success

2-2. Three Major Development Strategies
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2-1. Three Key Elements of Success

**Government's Strong Leadership**

The education system in the ROK was developed under the leadership of the Korean government, wherein the government has systematically designed and operated the overall education system, while, in the process, providing a practical means for the implementation of diverse policies.

On the basis of a number of educational think-tank institutions and their ongoing R&D in the field of education, the ROK was able to effectively establish and implement educational plans.

- **Secured educational budget**

The Korean government put a considerable amount of effort to secure expenditure on education by increasing the percentage of education expenditures of the total government expenditures and of the gross national product (GNP). It is noticeable that the government has legislated the education tax system to secure educational finance.

Moreover, the government sought to increase the education expenditures to 5% of the GNP as stipulated in the 1995 Education Reform Plan. In addition, recent efforts are focused on higher education with an objective to reduce the financial burden on tuition to enhance educational opportunities for higher education as well.
Figure 2-1] Public education expenditures by level of education (% of GDP)

[Figure 2-2] Budget changes of the government and the Ministry of Education


Provision of high-quality educational content for all and the national curriculum

Formulating a standardized national curriculum and seeking its universalization have become the stepping-stone to provide equal, non-discriminating educational content to all, regardless of an individual learner’s region, social class, or gender. Based on the Education Law and the legislation of the educational system in 1945, the first national curriculum of the ROK was adopted from 1955 to 1962. Until today, the national curriculum is reformed on a periodic basis with a five- to ten-year cycle to respond to the newly rising demands for education and emerging needs of a changing society. For instance, the current curriculum was revised in 2009 and the curriculum has been effectively monitored and managed at the national level to sustain the quality of education. Thus, it can be stated that the country has taken the egalitarian approach to ensure quality education for all learners regardless of their social backgrounds.

Quality management in education

The ROK developed an evaluation and monitoring system at the national level with an aim to provide quality education to all learners regardless of their region and social status. In particular, since the 1990s, the country has emphasized the improvement of quality education and educational accountability by creating an evaluation and monitoring system at diverse levels, including an evaluation on the metropolitan/provincial offices of education that are in charge of education in local regions; on schools and school leaders; on and general guidances; on the teacher appraisal for professional development, and on the National Assessment of Educational Achievement (NAEA). At the same time, the nation has increased the autonomy of school education in respect of the diversity of schools as an individual, which, consequently, contributes to quality education at the grassroots level. In 2010, four distinctive pillars of school autonomy were developed: curriculum autonomy, human resource management autonomy, expansion of autonomous schools, and establishment of a classroom support system.

To monitor and manage the quality of education, it is critical to ensure data collection both in terms of quantity and quality to accurately determine the current status and reshape the direction being taken. Recognizing such importance, the ROK initiated the National Education Statistics Monitoring System in 1962, which until now plays an important role in classifying and analyzing large amounts of statistical data in education.
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The ROK puts its core value on the quality of teachers with its belief that the quality of teachers is what determines the quality of education. Therefore, the country’s quality management of education focuses on teacher recruitment and training through its national teacher training system including both pre-service and in-service programs. Within these programs, teachers are given opportunities to enhance their professional capacity. In particular, at teacher training institutions, teacher candidates are provided with opportunities to take various education-related courses and substantial field practices. Teachers are recruited through an open competition selection process (i.e., the national teacher qualification examination), which is governed by the Ministry of Education, to ensure the selection of only outstanding talents.

Competent Teachers

Competitive selection process and continuous professional capacity-building

The position of teacher is one of the most sought-after occupations by excellent students in the ROK with the aim of pursuing it as their career. Those recruited as teachers mostly belong in the top 5% of student cohort graduating from the country’s school system. This standard is higher than that of top-performing countries for education where teacher recruits are usually made up of people in the top 15–30% of their respective cohort. This proves the robust foundation of quality education in the ROK.

One of the qualifications required for people to enter teacher training institutions is to be part of the top 5–10% of their respective cohort. For the students attending comprehensive universities, only those with high academic performances can apply for teacher training courses. The high qualifications of Korean teacher candidates and the competitive selection processes allow well-qualified and competent teachers to take the teaching post. As a result, Korean teachers are internationally recognized for their excellent capacity.

In the ROK, specialized teacher training institutions provide quality education and training courses to recruit only outstanding teacher candidates. Also, retaining educational power that ensures excellence is closely related to teachers’ continuing capacity development. In this regard, the country not only emphasizes the recruitment of qualifying talents, but also provides professional programs for teachers to respond to the changing educational environment. Diverse programs allow teachers to gain new
knowledge, skills, and methods. For instance, it offers various teaching methodologies including ICT methodology, constructivism-based pedagogy, and communication skills.

**Wage and pension system**

The ROK has established a stable wage and rewarding system for teachers with its provision of extensive financial benefits and pension schemes. One of the reasons behind the popularity of the teaching profession is its occupational stability, which is based on legislative support systems including the Lifetime Employment Act (retirement age of 62) and the Special Act on the Improvement of Teachers’ Status. Such efforts are made to ensure that excellent talents can be retained in the teaching post, thus upholding quality education in a sustainable manner.

[Figure 2-3] Comparison on teacher’s annual salaries of the ROK and the OECD average (1999-2009)

High Emphasis on Education and Zeal for Education

High level of social value on education

In the ROK, education has been perceived as a basic human right, as well as one of the most justifiable vehicles to climb the social ladder. Education has also been a driving force behind individual self-realization and national development. Such social expectation provided a basis for the government-led educational policy development and voluntary public movement to harmonize and comply with one another.
Parents’ enthusiasm for education

The level of devotion of Korean parents in their children’s education, which is labeled as “education fever,” is a world-renowned phenomenon. From prenatal education to school education, and to lifelong education, such high level of parental support and expectation in education is recognized as the foundation of today’s education in the ROK. It is believed that passion for education—sacrificing everything for education—in the belief that “education is our children’s future” is one of the driving forces behind the nation’s development.

[Figure 2-5] Korean parents’ educational expectations on their children (2014)

The key to the success of Korean education is that the government and the civil society have endeavored to take a creative and holistic approach that integrates educational vision, goals, strategy, contents, methods, and evaluation contextually. This was implemented in the process of seeking for future-oriented education in partnership with the government, teachers, and parents, which make up the “trinity of collaboration by three stakeholders.” This features Korean education.
2-2. Three Major Development Strategies

Systematic Approach

☐ Systematic approach for educational development

The “systematic approach” refers to a process of planning, implementing and evaluating, called the “plan-do-see process,” which is systematically applied to policies for educational development. The ROK has been developing the education system by constantly repeating the systematic process of planning its policies, implementing its policies, and evaluating the result. Under the leadership of government, research institutes such as KEDI, KICE, KRIVET, KERIS, NILE, KICCE, and NYPI were established and contributed to realizing the plan-do-see process through performing R&D activities in educational development.

For instance, Korean Educational Development Institute (KEDI) was founded in 1972, which successfully designed and practiced educational plans, contents, methods, and evaluations, and contributed to sustainable educational development by effectively applying research outcomes into the next implementation phase. In response to the knowledge-based and information age in the 1990s, the ROK set its priority in the capacity development of ICT and established Korea Education and Research Information Science (KERIS), which contributed to the development of ICT in education. In the 2000s, the nation envisages a creative economy through the education reform to foster well-equipped and creative talents and to improve the quality of education.
A “stepped approach” refers to the staged development of education in alignment with the national economic development plan. Rather than investing all of the limited resources in every stage of education, the ROK has been developing its primary, secondary and higher educations separately in turn, according to its economic needs. A comprehensive policy approach, seeking balance with the economic growth and educational development, successfully enabled the society to foster adequately skilled workers and creative talents that are required in national development.

For instance, the 1960s in the ROK was a period of laying the foundation for economic development. During this period, the Korean government focused on the universalization of primary education and literacy education, which contributed to the development of primary and light industry. The 1970s and 1980s in the ROK witnessed the switchover from labor-intensive, light industries to heavy industries. Encountered by new economic demands, the government shifted its focus on the universalization of secondary education, advanced vocational education and training, which contributed to the development of secondary and heavy industry. Finally, in the contemporary context, the ROK put the emphasis on the universalization of higher education and R&D capacity development, corresponding with the knowledge-based society.
### Policies leading to educational development in the ROK

<table>
<thead>
<tr>
<th>Year Range</th>
<th>Major Educational Development</th>
<th>Major Educational Policy</th>
<th>Economic Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Improvement of welfare of rural regions by utilizing primary educational facilities</td>
<td>- Policy on standardization of high schools (1974)</td>
<td>- Securing labor force required in labor-intensive industries</td>
</tr>
<tr>
<td></td>
<td>- Holding of national efforts to reduce illiteracy</td>
<td>- 7.30 Education Reform (1980)</td>
<td>- Rapid industrial development and economic growth</td>
</tr>
<tr>
<td>1970-1984</td>
<td>- Formulated education system through 7.30 education reform</td>
<td>- Enactment of legislation on degree acquisition through self-education (1990)</td>
<td>- Fostering highly skilled human resources required in heavy and chemical industries</td>
</tr>
<tr>
<td></td>
<td>- Universalization of secondary education</td>
<td>- Formulation of autonomous entry system of higher education (1990)</td>
<td>- Economic structure shifts toward the technology industry</td>
</tr>
<tr>
<td></td>
<td>- Increased level of educational expenses and the improvement in roles of private schools</td>
<td>- S.31 Education Reform (1995)</td>
<td>- Diversification of industrial structure and the post-industrial society</td>
</tr>
<tr>
<td></td>
<td>- Fostering human resources in science and technology</td>
<td>- Introduction of University Establishment Regulations (1996)</td>
<td>- Emergence of the knowledge-based society</td>
</tr>
<tr>
<td></td>
<td>- Introduction of technical high schools</td>
<td>- Formulation of Comprehensive Plan for Lifelong Education (1996)</td>
<td>- Emergence of a creative economy and the era of integrated knowledge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- 1st Phase of BK21 (1999-2005)</td>
<td></td>
</tr>
<tr>
<td>1996-2007</td>
<td>- Fostering professional and research human resources required in high-tech industries</td>
<td>- Implementation of projects to foster world-class research-oriented universities (2008)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Establishment of vocational training centers</td>
<td>- The 2nd Lifelong Education Promotion Plan (2008-2012)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fostering 2-year colleges and science-and-engineering-specialized universities</td>
<td>- Revision of the National curriculum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Increased opportunities of higher education</td>
<td>- Revision of vocational Education and Training Promotion Act (2011)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Encouragement of various types of colleges and autonomy in student quota</td>
<td>- Implementation of BK+ Project (2013)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- BK+ Project</td>
<td></td>
</tr>
<tr>
<td>2008-present</td>
<td>- Implementation of national projects to support research-oriented universities to enhance research capacity of universities (BK21)</td>
<td>- The 2nd Lifelong Education Promotion Plan (2008-2012)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fostering world-class creative talents and the expansion of lifelong learning</td>
<td>- Revision of the National curriculum</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Implementation of BK+ Project (2013)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Formulation of National lifelong learning system in the age of life expectancy to 100 year (2013)</td>
<td></td>
</tr>
</tbody>
</table>
From quantitative development to qualitative growth

A “sequential approach” describes a shift of focus from quantitative development to qualitative growth. In cases of primary and secondary education, it started from overcrowded classrooms in order to increase accessibility to educational opportunities to a wider range of learners and later focused on improving the quality of education by reducing the number of students per classroom over time. In the same vein, higher education policy first focused on the access issue. At the early stage of development, the Korean government encouraged the establishment of wide ranges of higher education institutions and diverse channels including open universities and cyber universities to expand the access to higher education. Since 2000, the Korean government has placed more weight on enhancing quality. It has increased financial support for higher education institutions through national projects including Advancement of College Education Project (ACE), Leaders in Industry-University Cooperation Project (LINC), and Brain Korea 21 Project (BK21).

The expansion of educational opportunities for primary and secondary education was followed by increases in higher education enrollment. Such rapid expansion of higher education was led mainly by two policy initiatives: 7.30 Education Reform (1981-1987), which doubled the college admission quota and the revision of University Establishment Regulations in 1996, which aimed to increase the institutional autonomy related to the establishment of higher education institution as well as student quota.

[Figure 2-8] Policy shift from quantitative development to qualitative growth in primary & secondary education and higher education
The policy on the quantitative expansion of higher education has developed into a policy on the quality improvement of higher education in the late-1990s, changing its policy trajectory over 20 years since its initiation in the 1980s. Policy focusing on the quality of higher education was guided by three pillars: a) strengthening the research capacity of higher education institutions, b) strengthening the educational capacity of higher education institutions, and c) enhancing the relevance of higher education through academy-industry cooperation.

- The flagship project of the first pillar, “strengthening the research capacity of higher education institutions,” is called in Brain Korea 21 project, a grand scale financial support system for higher education led by the government. This project was initiated in 1999, during which national efforts were being made to recover from the IMF financial crisis. The project continued until 2012, providing a total of KRW 3,870 billion to universities. As a result, the universities in the ROK have made the dramatic advancement in research capacity within a decade, ranking 18th in the world in 1998 and 11th in 2011, in terms of the number of SCI journals published.

[Figure 2-9] Research performance of Korean universities

![Graph showing research performance of Korean universities](image)

Note: * International journals, Korean professional journals, and publications (publications not included for graduate schools) are included for research performances in humanities and social sciences.

- In addition, the Korean government strives to enhance the quality of undergraduate education, which is the foundation of higher education through the ACE (Advancement of College Education) project. The Ministry of Education has
been steadily increasing the number of universities participating in the project since 2010. In 2014, a total of KRW 57.3 billion was allocated to 27 universities, reaching over 10% of the total number of 4-year universities in the ROK. With this, to further enhance the capacity of college education, universities in the country continuously introduce various educational programs and teaching & learning methodologies.

- Strengthening academy-industry cooperation is one of the major policy strategies for the quality enhancement of higher education institutions. Through implementing the Leaders in Industry-University Cooperation Project (LINC), the government set its priority to foster talents in key industries of the local community where the university is located. The project was designed to reform curriculum more tailored to industrial needs, to recruit more faculty members with industrial work experiences, to improve educational environments of industry-academia cooperation, and to increase the internship program for students. As a result, a greater number of businesses and students participated in the field study/experiences, in addition to the increased number of faculty hired with their own professional field experiences. All this contributed to the enhancement of relevance of higher education and the promotion of the flexible model of working and learning at this period.
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The case of the ROK
Chapter III

Innovation of Education: Upcoming Challenges and Future Directions

3-1. New Context of Challenges
3-2. Directions of Innovation in Korean Education
3-1. New Context of Challenges

The Age of Creative Economy

The evolution of economy

The ROK experienced a dramatic transition from a technology-intensive economy to a knowledge-based one, accompanying the unprecedented advancement of industrial technologies and the explosive growth of knowledge-based industries and services. The added value in the service sector has been steadily risen in the ROK since the 1970s, with knowledge services’ share of the total output of the sector growing from 14.1% in 1995 to 17.7% by 2008.

On the other hand, the share of general services’ total output has declined by 1.3% approximately since 2000. With the growing emphasis on and high value of knowledge in the service industries, however, there is yet another major transition taking place: from knowledge to creativity. The age of creative economy has dawned upon the ROK in this period, shifting economic paradigm from knowledge utilization and distribution to creation of new horizon of economy.
Rising demand for developing ICT and software

The ROK’s economy is currently undergoing a watershed moment and is faced with two major tasks: first, to find and develop new growth engines in the high-tech industry for the growth of the creative economy, and second, to establish a sustainable and virtuous cycle of economic growth through efficient distribution and use of resources. Since the 1990s, the structure of the Korean economy has consistently changed from the technology intensive industries centering around telecommunication to the knowledge-based society that emphasizes creativity.

The creation of a new knowledge-based cycle structure, producing new knowledge out of advanced information and communications technology (ICT), has also expedited the switch to the creative learning society. The emphasis on creative learning, in turn, has been increasing the use of and the need for new IT, bio technology, and software.

Advent of the creative economy and new challenges for education

In the context of the creative economy, the ROK’s economy needs to outgrow its role as a “fast follower” and transform itself as a “first mover” that does not achieve economic growth through the imitation of other advanced economies. It is no wonder
that development of creative capabilities in students has become the first priority of education today, encouraging students to create things entirely new based on imaginations, ideas, and vision. The Korean society can no longer rely on the talented few. It demands a new paradigm on education that is capable of developing and enhancing the creative potential in everyone.

“Communication” and “collaboration” are two key words equally important as “creativity” in understanding the society and economy today. Innovation is the imperative in a creative economy. It requires increasingly complex, advanced, and more effective cooperation among members of each given organization. Innovation today comes about as a result of not individual talents but of collective synergy created by organization-wide harmony and teamwork. In the meantime, the growing diversity of cultures, values, religions, languages, and social groups in modern society has radically increased the likelihood of conflicts and the need for skills for effectively resolving such conflicts. In light of this, communicative capability, engaging with others, and collaboration are more important than ever today.
Declining birth rate and the post-aged society

The size of the school-age population in the ROK has been on a steady decline since the 1980s, along with the rapid aging of the Korean population caused by the declining birth rate and the increasing average life expectancy. The country is expected to join the league of post-aged societies by 2026.

- The birth rate in Korea was 1.3 children per household as of 2013, which is the second lowest in the world, next only to the 1.1 children per household of Macau (State of World Population, 2013).


- Aged population (aged 65 and older): 12.2% in 2012 → 14.5% in 2018 → 24.3% in 2030.

[Figure 3-2] The population pyramid of the ROK (2014)

Source: Index Mundi (2014). South Korea age structure.
As the lifespan of knowledge increasingly shortens amid the rapid changes sweeping across modern society, lifelong education is what this age demands. As of 2014, the participation rate of lifelong education in the ROK reached 36.8%, which is below the OECD average of 40.4% as of 2012. Thus, effective and sustainable lifelong education provisions is required in the ROK, which should supports widened access to various lifelong education programs and self regulated learning communities in the local level. It also underlines a wide range of lifelong learning platform including online channels. Korean educators and policy makers are now doing their part to ensure that everyone can enjoy quality education at any point in his or her life cycle, “from cradle to grave”.

The Age of Globalization

Increased international mobility and globalization of education

Increasing cross-border exchange and global interconnectedness have started to embody the concept of a global village in practice. Globalization, in the meantime, has had a large impact on education, and this can be seen in the salient changes of higher education since the 1990s. Many higher education institutions have started to invite international scholars as faculty members and run various international exchange programs. The number of foreign faculty members in the ROK thus multiplied dramatically, from 402 in the early 1990s to 4,953 in 2011.

Korean educators are further paving the ground for the globalization of education in the ROK, inviting international students to Korean universities and promoting student exchange programs at an international level (e.g., Study Korea Project, Global Korea Scholarship, CAMPUS Asia, etc.). For instance, the Study Korea project, launched in 2004, has brought to bring a dramatic increase of the number of foreign students from 12,000 in 2003 to 84,800 by 2014.
Multicultural context and cultural diversity

The march of globalization has made society all the more plural and diverse, which calls Korean educators and policy makers to develop new measures in order to reshape social configuration in the increasingly diverse society. The total number of foreign residents living in the ROK has tripled in just 10 years, from 536,627 in 2006 to over 1.7 million in 2015, while the total number of foreign workers has also doubled from 250,000 to 540,000. The ROK can now be described as a country that goes beyond an ethnically, culturally, or linguistically homogeneous society. This change, however, prompts concomitant changes in the Korean education system as well.
In the meantime, the proportion of students with multicultural backgrounds has steadily increased from 0.44% in 2010 to 1.08% in 2014 on a national scale. This requires a transformation of the Korean education system and school culture to be able to fully embrace difference and diversity. It is necessary to ensure that any anti-racism and anti-multicultural elements in the ROK’s pedagogics, curricula, and evaluation systems are eliminated, and to find innovative measures to enhance the learning capability of students with the multicultural backgrounds. It is critically expected that teachers would use multicultural learning resources and methods to enhance diversity and equality in the classrooms.

[Figure 3-5] Proportion of students with multicultural backgrounds in Korean schools

3-2. Directions of Innovation in Korean Education

Fostering Creative Global Talents

□ Character-building and competency-building education

To foster creativity and build students’ character, the Korean education system provides creative and character-building education that is equipped with both cognitive and non-cognitive elements. To pursue innovation to secure a creative economy, the Korean education needs to foster creative global talents and purify students’ character by competency-based education and learning to live together with a spirit of coexistence and caring for others.

□ Future School 2030 project utilizing ICT

With the development of ICT, the ROK continues to prepare the future school that fosters competent talents equipped with creativity, cooperative problem-solving skills, communicative skills, and self-directed learning ability. The future school will stimulate students’ interest and participation in learning using digital textbooks and a much wider range of interactive learning materials. It will enhance teachers’ ability to help students complete their self-directed learning within the framework of the given curriculum.

The teaching–learning support platform in the future school will analyze big data generated by all teaching and learning activities, thus providing customized information for teachers, students, and parents alike. It will perform real-time analyses of all evaluative and learning activities as they take place, and use the findings of such analyses for test-free evaluations of students. The future school will also feature an online learning community (Wedorang) that supports daily and routine teacher–student interactions outside school and also a Linked Open Data (LOD) that provides numerous learning materials.
The Future School 2030 Project has launched in 2015 to test some of the new ICT elements for teaching and learning functions at 134 digital textbook pilot schools across the ROK. The future school in the country will enable educators to overcome limits of teacher-oriented and classroom-centered programs, and realize bona fide student-oriented and participatory learning experiences based on diverse information resources and enhanced interaction. It will mark a major paradigm shift in education.

□ Happy education for all

The Free Semester System aims to enhance the happiness and well-being of students by shifting the focus in the Korean education system from knowledge accumulation and competition onto self-directed learning and future-oriented capability development. During their middle school years, students can choose to spend one semester on exploring their dreams and aptitudes and planning their future through activities encouraging self-reflection and all-round development. This meaningful step toward making schools happier places for students began with 42 schools in 2013, and is now implemented in over 1,500 schools nation-wide. Schools cooperate with government organizations, public institutions, universities and businesses to develop increasingly diverse Free Semester System. Thus, it can be noted that the Free Semester System could expand the infrastructure for students’ experiential learning in a great deal of diversity.

In an effort to nurture creative talents, the nation has also diversified the channels in which students can move onto higher education, allowing colleges and universities to recruit students according to their potential, talents, and academic vision instead of academic achievement. The Korean Admissions Officer System, introduced in 2012, is a good example of new measures with which universities can now recruit and select students in diverse ways. It is expected to reduce the high competition in the field of education, which enables students to enjoy their journey of learning in schools.

□ New educational demand in creative economy

The rapid diversification of the industrial structure and the increasing specialization of occupational techniques have revealed the deep-seated limits of the existing education model since the 1990s, raising the demand for a new model that caters better to the changing industrial and social needs. The “5.31 Education Reform,” announced in May 31, 1995, thus declared openness, diversity, and autonomy as the new principles
for education, tailoring programs of innovation accordingly. The Education Reform Advancement Commission, organized in March 2015, also emphasizes the need to reform the education system to help students realize their dreams and talents and fulfill the changing demands of Korean industries and society. There is an evident need for a transformation of the higher education system in the ROK, underlining a high-skilled labor force and being well-suited to industrial demands of the creative economy. Hence, Korean educators and policy makers have set out to provide more field-oriented education programs and customized special programs of academic–industrial cooperation. Korean education strongly supports the “PRogram for Industry needs Matched Education (PRIME)” and reinforces the implementation of the “Sandwich Education System,” which could provide a field training during the semester and “industry-tailored educational courses.”

The specialized high schools were established in 2011 in an effort to help students find their career paths and aptitudes early on while studying and learning in courses catering to the changing and diversifying needs of the future society and economy. The “meister” high schools in the ROK also enable students to acquire knowledge and skills required by emerging industries. It can provide the flexible model of work to learn, learn to work at the same time. The number of meister high schools has multiplied in just several years, from 21 in 2008 to 48 in 2014, all of which are now partnered with over 3,000 businesses and corporations. The employment-oriented and field-centered educational model is just one example of the diverse efforts of Korean policy makers and educators to enhance the education-industry match.

[Figure 3-7] The number of the specialized- and the meister high school

Work-Study Dual System

The Work-Study Dual System was introduced to enhance the job-related skills and practical abilities of students instead of forcing them to acquire irrelevant knowledge. The school-business partnerships occasioned by this program help students discover and develop their career-related potentials, and increase the employment rate among the youth in the ROK. The Specialized High Schools for Academic-Industrial Partnership, for instance, allow students to learn and study both in classroom and at work. The “Uni-Tech” system, on the other hand, allows students to finish their education and training in given trades through five years of high school and vocational college. Graduates of specialized high schools and meister high schools now have greater opportunities than their counterparts to land jobs after high school and go onto higher education later. Through these and other channels, Korean policy makers and educators are supporting the lifelong education and continuous vocational training of Korean workers.

Promoting multicultural education

The Korean government began to develop the infrastructure for multicultural education in 2008, but its focus was originally on supporting multicultural education in the interest of improving the welfare of the marginalized. With a new plan established in 2014, however, the Korean government has promoted multicultural education for over 70,000 multicultural students in pursuit of ‘integration’, ‘empowerment’ and ‘capacity building’ across the overall education system.

The new efforts being made in this regard include: developing and enhancing the capabilities of children from multicultural background families; providing multicultural education and awareness on cultural diversity all students; supporting the
120 pilot schools that provide classes on global citizenship; enhancing the multicultural awareness and capability of teachers; developing a supportive and cooperative system for multicultural education (mentoring programs, the Global Bridge Project, Dakkum Schools, etc.); and educating and training language teachers for multicultural students.

**Stressing the importance of unification education**

The Korean curriculum on unification education has changed and evolved over time in response to the changing relationship between the Korean peninsula and the rest of the world. Today, the emphasis is on improving mutual understanding, tolerance, and cooperation between the two Koreas by promoting greater human exchange and mutual understanding. The goal is to maintain the consensus on the need for a peaceful reunification, while also building up social capability of North Korean defectors and improving their integration at schools and in society at large.

**Providing fair educational opportunities**

The Korean government works hard to improve the equity of educational opportunities for all students, especially for those in remote rural areas and vulnerable groups. The Educational Welfare Priority Project was thus launched in 2003 to support the educational improvement for vulnerable learners. The government even amended the Elementary and Secondary Education Act to enhance the long lasting effect and enactment of the project, adding new rules to the designation of and support for eligible schools. The fiscal support for the project was also improved in 2011 when the project became a beneficiary of general grants instead of special ones. The project has been consistently growing in size and scope, with 1,833 elementary and secondary schools, or 16.1% of all such schools in the ROK, participating as of 2013. The project enables these schools to form communities of education with local societies to provide holistic learning, cultural, artistic, psychological, and emotional and material support for students.
Expanding financial support in education

The Korean government provides direct and indirect forms of financial support for students in higher education through the National Student Aid Program, thus ensuring that all students can enjoy the benefits of education. The objective of the program is to ensure the equality of opportunities in sustained learning for all students. Since the establishment of the Korea Student Aid Foundation (KOSAF) in 2009, the number of beneficiaries has been growing by 10% year-on-year. The amount of aid for individual students is also increased annually, from KRW 4.5 million in 2014 to KRW 4.8 million in 2015.

In 2015, the Korean government also set aside a fund of KRW 7 trillion (KRW 3.9 trillion from the National Treasury and KRW 3.1 trillion from universities), which is about half the KRW 14 trillion that is estimated to be the total amount of university tuition fees (based on records from 2011). The fund will go toward providing 50% discounts on tuition fees for students from low-income households.

The Korean government also has reinforced the pool of financial aid for students in low-income households, including the KRW 1.75 trillion set aside for the Korea Student Aid in 2012 and other accounts. The average tuition fee in Korea has slowly declined since the enactment of “Half-Price College Tuition” policy in 2012.
policy is believed to have lowered the amount of tuition fees charged by KRW 708.2 trillion. The government has increased its pool of financial aid by KRW 35.2 billion to a total of KRW 2.4452 trillion this year so that more students can benefit from it.

※ Changes in the tuition decline rates (four-year universities):
   - National/public: 0.9% in 2011 → 5.4% in 2012 → 0% in 2013 → 0.3% up in 2014.
   - Private: 2.2% in 2011 → 3.9% up in 2012 → 0.4% up in 2013 → 0.3% up in 2014.

[Figure 3-8] The amount of National Grant type by income level


☐ Revitalizing lifelong learning society

The ROK is renowned for the highest enrollment rate of higher education in the world, but the Korean government has still strived to eradicate the illiteracy for low-educated adult learners through the implementation of the adult literacy education policies and programs. For instance, in accordance with Article 40 of the Lifelong Education Act, adult learners could achieve primary and middle school diplomas by participating in the literacy education program. As the result of these efforts, 2,539 adult learners completed this program and successfully achieved diploma from 2011 to 2014.
As the average lifespan is expected to reach 100 year, the Korean government has strived to build up a lifelong learning society in which all people enjoy equal opportunities and benefits of learning throughout their lives. Designating 118 lifelong learning cities in 2013, the government continues to increase the number of regional institute for lifelong education, now amounting to over 400 nation-wide, since it could offer diverse learning channels and broadened learning opportunity for all in grassroot level.
**Systematic support and education welfare for marginalized groups**

The Korean government is striving to provide quality education programs that cater to the diverse needs and requirements of different students. For instance, the government sets aside a special budget every three years to support students with learning disabilities. The government also renews its Primary Teacher Training Plan regularly to better accommodate students with special needs. In fact, the Center for Supporting Students with under-achievement was established to develop effective teaching models and provide a mentoring service for students. These are substantial efforts of Korean policy makers and educators in order to enhance the quality and systematic support for students with special needs.

[Figure 3-11] Process on the educational support for underachieved students
In 2008, provincial offices of education and schools began to work together to operate “We Education Emotion (WEE) Centers,” thus improving educational services for local students and helping them better adapt to school with help on character building and finding the right career path. Thus a multi-level network of integrated learning support services has come into being, connecting schools, provincial offices of education, and local communities.

The Korea National Institute for Special Education (KNISE) was established in 1994 to provide practical support for the teaching and learning of children and students with special needs, providing special education research, teacher training, and IT programs. The scope of KNISE’s roles has expanded to support the development of special education curricula, textbooks, and learning tools, as it also provides professional/career education of students with disabilities and supports for the higher and lifelong education for the disabled. Having enacted the Special Education Act for people with disabilities in 2007, the Korean government continues to improve the equality of opportunities in education for all.

Global Cooperation in Education for Peace and Prosperity

Strengthening the education system for global citizenship

In line with the tide of globalization sweeping around the world, the Korean government continues to improve and harness its education system with the goal of producing productive, talented, and warm-hearted global citizens. The focus is on educating young people into healthy and responsible adults capable of enjoying and respecting peace, human rights, prosperity, and diversity, regardless of national, ethnic, class, and gender differences. The revised National Curriculum of 2009 thus states as its goal the education of “individuals who participate in the development of communities as citizens of the world with the spirit of respect and sharing with others.”

Global citizenship is not dealt with separate subject in the Korean education, but is a key topic of interdisciplinary learning that spreads over social studies, cultural studies, history, ethics and morality. With this, the Korean government has begun to develop and implement a global citizen education model and also provide support for the training of the Global Citizenship Education Path finder Teachers in 2015. It amirs to enhance global capacities of teachers in a system based on the partnership of central and local governments as well as schools.
Dynamic Education for Individual and National Development: The case of the ROK

Reinforcing global education partnership

Having successfully transferred from a recipient of OECD development assistance into a donor, the ROK started to participate actively in various global initiatives and efforts for achieving the goals of Education for All (EFA). Since joining the OECD Development Assistance Committee, the Korean government has also been increasing its contributions to education worldwide.

The Korea International Cooperation Agency (KOICA), for instance, regularly invites civil servants, researchers, engineers, and policy makers from developing countries to the ROK to share the country's experiences and extensive know-how on social and economic development. Since KOICA’s foundation in 1991, the number of such invited trainees has been steadily increasing, reaching a cumulative total of 53,953 in 2014.

Active initiative on global citizenship education by UNESCO Category-II institutions (Asia-Pacific Centre for Education for International Understanding; APCEIU):

- Established in 2000 according to the agreement between the Korean government and the UNESCO, APCEIU serves as a center of the worldwide network for global citizenship education.
- Main program areas: Global Citizenship Education Instructor training, teacher exchange, policy R&D, learning material development and distribution, information exchange, etc.

Rainbow Youth Global Citizen Project by the Korean National Commission for UNESCO:

- Main program areas: peace, human rights, multicultural issues, environment, international organizations, regional cultures, and economy.
There is also an increasing number of young Koreans conducting volunteering service for the development of developing countries, which is a noticeable trend. World Friends Korea, for instance, has dispatched 46,000 volunteers worldwide to work in various sectors and areas. In particular, the education sector is accounted for 56% of all volunteering activities of the organization as of 2013. Not just young people, senior citizens and retired people in the ROK have participated in the international volunteering work to make a better world.
Knowledge sharing in educational development

It is widely acknowledged that the ROK now serves as a bridge among developed, emerging, and developing countries. In this regard, there have been international calls for sharing the country’s experiences. In 2011, Tony Blair, former British prime minister, said that the ROK is able to pass on its experience in economic development and provide many lessons to developing countries.

In an effort to share the ROK's experience with, and knowledge of, effective and innovative economic growth and dramatic national development, the Korean government launched the Knowledge Sharing Program (KSP) in 2004. The program supports diverse projects that promote the development of the global village, narrowing down the knowledge gap between the developed and developing worlds, and supports the economic growth of various countries. The program has supported over 400 projects so far for 39 partner countries, including projects on adult literacy, vocational education and training, curricular development and school consultation the Korean government continues its search for better and wider-ranging channels of international cooperation to help the international society accomplishing its education goals by 2030.
Recognizing the importance of education, the ROK strengthens inclusive partnership for development to contribute more to better education in the developing world, and, in particular, in conflict countries caught in war and crises. Indeed, it is believed that education is the only fundamental path toward international peace and prosperity, sustainable development, and realization of pan-global hopes. International cooperation over education is also a key stepping-stone for embodying the ideal of global citizenship. The Republic of Korea thus joined the Global Partnership for Education (GPE) on September 2014, making solid contributions to the cause of promoting quality education worldwide. The country will share its knowledge and experience of educational development with partners worldwide, strengthen its solidarity with the international communities, and create and implement ways to enhance global education partnerships that embrace the principles of global citizenship.