

Curriculum Reform in Korea: Issues and Challenges for Twenty-first Century Learning

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Abstract Since the introduction of international achievement assessments, Korea has received a great deal of global attention because of its strong academic performance achieved at primary and secondary education levels. However, Korea has not fully benefited from these achievements in education for several reasons as discussed in this paper. The Korean education system is now faced with challenges that have emerged from these achievements. The purpose of this paper is thus to discuss the curriculum reforms in Korea, which were undertaken to achieve sustainable success and meet the challenges of the twenty-first century learning ecology. This paper highlights that beneath its high academic performance, the Korean educational system faces problems related to students' low interest levels in learning, a declining index of students' happiness, and increasingly deskilled teachers because of the prescribed national curriculum. This paper describes the current shift taking place in the Korean educational system as it move from knowledge delivery to competency development, from academic excellence to student happiness, and from centralized and detailed prescriptions to more autonomous decision making by teachers in order to overcome these problems and respond actively to twenty-first century learning ecology. In addition, this paper suggests that changes must be followed in terms of school practice, teachers' professional development, and socio-cultural structures as means of achieving these reforms.

Keywords Twenty-first century learning · Curriculum reform · International achievement assessment · Competency-based education · National curriculum · Korean education system

Introduction

Since the introduction of international achievement assessments, such as the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), Korea has received a great deal of global attention because of its high academic performance achieved at primary and secondary education levels. Korea's consistent academic excellence is impressive and it certainly deserves international attention. In terms of PISA and TIMSS, Korea has maintained its top ranking in all sections, since 1995 and its scores have even continued to improve (McKinsey and Company 2010). Moreover, Korea is well known for its high level of equality in education. According to the results of PISA 2009, Korea had the lowest gap between the top 10 % and bottom 10 % of students in mathematics, and the ratio of students falling below the lowest achievement level was only 1.1 % in PISA 2009 and 2 % in TIMSS 2007, the lowest of all nations (Mullise et al. 2008; OECD 2010). As a result, a number of studies have been conducted to examine Korea's successful educational system (Sorensen 1994; McKinsey and Company 2007).

However, Korea has not fully benefited from these achievements in education. The Korean education system is now faced with the challenges that have emerged from these achievements. The factors contributing to these high performances have now become the main causes of

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educational problems in Korea. These factors include students' low levels of interest in learning and their decreased levels of happiness; these issues are now being seriously considered as the new government sets its priorities for the national agenda.

Furthermore, the social context of the twenty-first century demands significant changes in the nature of knowledge and the type of educational content taught in schools. In today's society, knowledge is rapidly changing as a result of the ceaseless creation and production in various contexts. According to Gibbons et al. (1997), contemporary knowledge is created in broader and transdisciplinary socioeconomic contexts, while traditional knowledge is produced within cognitive and academic contexts. As a result, students must acquire new abilities to create and produce knowledge in practical contexts, rather than merely understanding knowledge that is relatively stable, abstracted, differentiated, and classified within disciplinary contexts. In addition, the impact of globalization on Korean society makes it necessary for schools to deal with the values and attitudes associated with global citizenry, such as living together, participating in and contributing to the global society, as well as self-management. Thus, in twenty-first century learning environments, it is not only imperative to focus on new learning that emphasizes innovation, creativity, and exploration, but also to sustain excellent academic standards (Hung et al. 2012).

Korea has recently pledged to overcome the problems associated with an excessive focus on academic achievement, which is seen as an illness in the Korea education system, and to meet the challenges of the twenty-first century learning environment. In particular, Korea has recently shifted its national curriculum away from knowledge-based education to competency-based education. The purpose of this paper is, therefore, to discuss how Korea has reformed its national curriculum in an effort to sustain its international educational success in the twenty-first century learning ecology. The subsequent section describes several problems faced by Korea in this respect and the contexts in which these problems are situated. The discussion then reviews how Korea has reformed its national curriculum in order to achieve sustainable success in the future. Finally, this paper concludes with some considerations on the practical challenges of undertaking curriculum reforms of Korea.

Challenges in Korean Education

Korean education has shown outstanding academic performance so much so that many Western Countries use Korea's results as a benchmark. However, in spite of its top ranking in international tests, Koreans are generally

unsatisfied with the school education system to the extent that they are willing to send their children to study in Western Countries with lower academic achievements. This is because beneath Korea's academic success lies the dark side of its education system, namely students' declining interest in learning due to excessive studying, increasing amounts of stress and unhappiness resulting from a test-driven education system, and a loss of skills among teachers associated with a prescriptive national curriculum. These problems were long overlooked, but they have now become critical issues in Korean society. The Korean government along with Korean scholars is currently struggling to find solutions to these issues.

High Performance, But Low Levels of Interest and Happiness

Korea has come into the spotlight because of its continuous high performance in TIMSS and PISA and its successful education system (McKinsey and Company 2007; Sorensen 1994). However, Korean students have poor attitudes regarding their learning. In the TIMSS 2007 report, students' attitudes toward mathematics were estimated according to three indexes: students' positive feeling regarding mathematics, their valuing the subject, and their self-confidence in learning. According to the report, Korean students' scores were below average in all three sections (Mullis et al. 2008), thus indicating their relatively negative attitudes toward learning.

It is surprising that Korean students have negative attitudes toward learning given their high performance, since achievement generally has a close relationship to learning interest (Chan et al. 2012). Yet in this case, Korean students achieve high scores even though they do not like to study. This finding shows that Korean students have a strong dependence on extrinsic and instrumental motivation rather than on intrinsic motivation. The strong extrinsic motivation of Korean students can be understood in terms of the historical and cultural contexts that shape Koreans and their opinions.

Koreans tend to perceive a strong connection between high test scores and gaining power, a belief acquired from their historical experience. During the Chosun Dynasty (1392–1897), only those who passed the public examination was permitted to become top Government officials, thus creating a cultural schema in which studying was a prerequisite for obtaining a powerful position in Government (Lee 2007). This notion of "knowledge is power" settled in the Korean consciousness during the Japanese colonial period (1910–1945). At the time, many intellectuals initiated an enlightenment movement to gain independence, since they considered the powerlessness of Chosun Dynasty to be attributed to the country's ignorance

of modern sciences (Jeong 2009). On the other hand, the Japanese colonial government established an employment system in which people were assigned different jobs according to their academic levels, which reinforced the need for school diplomas in order to enter the upper class. After the restoration of independence, there was a sudden increase in the demand for highly qualified human resources due to the rapid economic growth, and high education levels were regarded as objective indicators in Korean society. The result was that education played a significant role in the country as a ladder for climbing to the upper class (Kang 1996). Considering this particular historical context, it is not surprising that education is conceived as part of a “struggle to survive” in Korea.

On the other hand, Korean students’ obsession with academic achievement has been influenced by the role of the family in Korean culture. Students have a strong tendency to study not only for their own sake, but also for their family. According to one study, when asked what they should do to create harmony in the family, Korean students answered that it was important to “obey parents” (38.1 %) and “study harder” (16.1 %) for their family (Ham et al. 2003). Interestingly, in another study, when asked what makes their family life successful, parents responded that they have to help improve the “academic success and development of children” (Kim and Park 2006). This finding shows that Korean parents recognize their children’s success as their own success. Thus, it is clear that children’s academic achievement is a crucial part of the family’s agenda in Korean society.

The extrinsic motivation driving Korean students’ high performances has contributed greatly to maintaining the country’s top ranking in international tests. However, these external expectations and reward systems that depend on academic performance has made Korean students oversensitive to their scores and overly focused on obtaining knowledge for tests rather than enjoying the learning process itself. This exam-driven learning culture in Korea has also affected instruction, which has evolved into a “teaching to the test” method (Sung and Kang 2012). This problem has been an impediment to twenty-first century learning in Korea because it confines students’ learning to the narrow frame of test items.

A low index of happiness among Korean students has nevertheless become a more serious problem than their low levels of interest in learning. Korean students feel unsatisfied with their overall lives as well as their learning. According to a survey conducted by the Organization for Economic Co-operation and Development (OECD), when asked to rate their general satisfaction with life on a scale from 0 to 10, Korean students who had only completed primary education reported a 4.5 level, which was much lower than the OECD average of 6.2 (OECD 2011). The

low index of happiness among Korean teenagers has in turn led to an increase in suicide rates, which has recently become a social issue in the country. According to statistics from the Ministry of Education, Science, and Technology, the number of Korean teenage suicides increased rapidly from 264 in 2000 to 351 in 2010 (The Korea Times 2011), with one teenager on average taking his or her own life each day. The number of suicides among 15- to 24-year-olds climbed to 15.3 out of every 100,000 people in 2009, which represents a tragedy for Korean society (WHO 2012).

One main cause of the rise in Korean teenage suicides is the overwhelming stress tied to academic achievement. The National Statistical Office (2010) reported that 10.1 % of students had experienced urges to commit suicide, with the primary reason being poor test scores. This pressure stems from the great importance placed on academic achievement in Korean society, as discussed above. Higher expectations and rewards for students’ achievements lead to greater frustrations about poor grades, which can ultimately lead students to commit suicide.

Moreover, the dominant Korean student culture is far from happy. According to an analysis of the cultural themes among Korean High School students, five central themes emerge, namely grade marks, vagueness, deference, meaningless, and alienation (Jo 2008). The lack of positive words in their cultural worldview sheds light on students’ negative feelings about their own lives. Teenagers are not simply students who must study hard; they also have the right to live happily. Although there are many intelligent students in Korea, it is unfortunate that they feel unhappy about life. Happiness is a fundamental human right, and students’ unhappiness is thus the most urgent and crucial issue facing Korean education today.

Prescriptive National Curriculum and Deskilled Teachers

Research on Korean education often considers its high-quality teachers as the key to success. In fact, teaching as a profession has attracted many outstanding individuals due to the relatively elevated starting salaries and the profession’s high social status (McKinsey and Company 2007). In addition, 31.8 % of Korean teachers have postgraduate degrees (Korea Education Development Institute 2012), and as the recent economic crisis made the stability of teaching positions more attractive, the competition to become a secondary school teacher in Seoul has increased annually, with the success rate reaching 52.5:1 in 2010 (Maeil Economist 2010).

In spite of this influx of highly qualified teachers, teachers’ professionalism has been the main target of reform in Korea, because highly competent teachers who

entered schools turned out to be too passive and did not exhibit professionalism in school. The passive nature of Korean teachers is related to the long history of a national curriculum system, which manages the entire K-12 education. Under the national curriculum, teachers must follow detailed prescriptions, and they have little authority to determine the learning contents for their classes. In addition, all teachers are provided with textbooks published in accordance with the national curriculum guidelines. Hence, most teachers believe that implementing the national curriculum is equivalent to teaching the textbook; the textbook is not a merely learning material, but the standard to abide by at all costs (Jeong 2006; Park 2007).

In this way, Korea has maintained its teacher-proof national curriculum, instead providing ready-made packages of instruction materials. The national curriculum has been “closed text,” which means that teachers are forced to follow it in an orthodox way, thus closing the door to autonomy and diverse interpretations (Kim 2007). As a result, there is little room for teachers to create their own curriculum as part of their professionalism, which encourages them to stay close to textbook guidelines.

The heavy subject content prescribed in the national curriculum is another factor limiting Korean teachers’ professional development. With the onerous amount of content in the national curriculum, teachers have trouble teaching students using the diverse methods that they have developed (Lee and Choi 2004). Teachers are so occupied covering all of the teaching content that they become more dependent on textbooks, despite being aware what they are teaching is meaningless to students.

The more prescriptive the national curriculum is the more obstacles to teachers’ professionalism emerge, with the situation negatively influencing the quality of teaching as well as teachers’ equity (Apple 1978; Nichols and Berliner 2007; Schleicher 2008; Welner and Oakes 2008). The full and detailed national curriculum is too controlling and thus becomes an impediment for teachers to develop, implement, and assess their own curriculum by adapting it to their classroom. As a result, this may provide students with less meaningful learning experiences. While the dense learning content in the national curriculum seems to promote academic excellence, it fails to elicit creativeness and professionalism among teachers.

Curriculum Reforms

Korea has recently reformed its statewide curriculum to overcome the exam-driven learning culture—an endemic national problem as discussed above—and to respond actively to a transforming twenty-first century learning ecology. This reform challenges the prevailing learning paradigm in Korea

centered on knowledge acquisition and academic achievement. In other words, the focus of the Korean education reform is to shift away from knowledge delivery to competency development, from academic success to overall happiness, and from the detailed prescription of a centralized curriculum to more autonomous decision making by teachers.

Focus on Competency Development

In the twenty-first century, knowledge is no longer fixed, and traditional boundaries are becoming blurred. The rapid expansion of globalization means that people are members of various communities at the local, national, and global levels, and are involved in various complex contexts. This new social environment raises a serious question regarding the purpose of education in the context of twenty-first century learning.

The difficulties of education today lie in the uncertainty of the future. It will be difficult to define the expectations and needs for an individual’s education, and acquired knowledge is not enough to meet the long-term challenges of the ever-changing tasks that students will face in the future. Schools of the twenty-first century society should no longer depend on knowledge delivery. Instead, education should take into account the uncertainty of the future and help individuals develop their ability to act in response and adapt to that uncertainty. In this regard, “competency” is emerging as the most practical alternative for future education (Klieme et al. 2004). Competency is not an innate talent, but rather the ability obtained from experience and developed over the course of one’s life, which is adaptable to all kinds of problems.

Klieme et al. (2004) defines competency as “the cognitive abilities and skills possessed by or able to be learned by individuals that enable them to solve particular problems, as well as the motivational, volitional, and social readiness and capacity to use the solutions successfully and responsibly in variable situations” (p. 65). According to this definition, competency enables people to solve particular types of problems and deal with certain kinds of concrete situations. Weinert (2001) suggests that the individual degree of competency is determined by various aspects including ability, knowledge, understanding, skill, action, experience, and motivation. Therefore, the idea of competency has emerged as a way to move away from knowledge-delivery education, which is the predominant paradigm in school education (Boyd and Watson 2006; Jonnaert et al. 2007; Reid 2006; Webber 2006). This has been reflected in recent movements toward competency-based curriculum reforms in Canada, New Zealand, Australia, and Germany (ACARA 2009, 2010; Hong 2012; Klieme et al. 2004; Ministère de l’Éducation 2007; New Zealand Ministry of Education 2007).

Recently, in Korea, some curriculum scholars have argued for the necessity of a competency-centered curriculum reform, approaching this issue from various perspectives (Hong and Lee 2011; Lee et al. 2008; Park 2009; Shon 2011; So 2007; Yoon et al. 2007). These scholars tried to define key competencies for living in the twenty-first century society, which led to the exploration of ways to develop the national curriculum by focusing on these aspects. For the first time, the national curriculum revision in 2009 articulated the importance of competency at the development level, which presaged the paradigm shift away from traditional knowledge-delivery education in Korea. Thus, during the development of this new curriculum, discussions took place about the key competencies necessary for the future, such as creativity, imagination, and problem-solving skills.

However, the national curriculum revision in 2009 did not represent a complete shift to a competency-centered curriculum. As a result, additional studies were conducted by the Korea Institute for Curriculum and Evaluation to further research and develop the national curriculum (Hong and Lee 2011; Lee et al. 2008, 2009, 2012; Yoon et al. 2007). These studies have defined the competencies necessary for future society in terms of personal, intellectual, and social dimensions, and have searched for ways to adopt these competencies in the subject curriculum. Under the new government established in 2013, more enthusiastic reforms were advanced for a competency-centered curriculum along with financial support for research focused on developing subject curriculum with a competency-based approach.

Greater Focus on Student Happiness

Many Countries have begun to pay attention to raising students' academic excellence after the introduction of comparative studies focusing on international achievement assessments. Recently, the United States has showed an interest in adopting national standards for subject curriculum as part of a larger effort to improve academic performance (Zhao 2009). In contrast to this effort by the United States Government, American culture is not obsessed with measurable outcomes, that is, test scores (McCluskey 2010). Consequently, although they rank in the low-grade group for education, Americans have a higher index of happiness than the countries that dominate international tests. When asked, 70 % of Americans said they were satisfied with their life, well above the OECD average of 59 % (OECD 2011).

Korean students, in contrast to Americans, have the lowest happiness index of all OECD countries despite their high scores in the international tests (Park et al. 2010). This shocking finding has convinced Korean policymakers to

devote more focus to students' happiness than academic excellence. This change is reflected in the fact that one of the visions recently announced by the new Government was aimed at "happy education for helping students' dreams and talents" (Ministry of Education 2013b). To achieve this purpose, the Korean government has two principal aims: (1) eliminating the main causes of unhappiness among students and (2) allowing students to do what makes them happy.

Since 1990, Korea has used a standardized test to diagnose students' achievement at the national level. The test comprising five subjects (Korean, English, mathematics, social studies, and Science) was given to a random sample of students in sixth grade (sixth grade in elementary school), ninth grade (third grade in middle school), and tenth grade (first grade in high school). In 2008, the Government expanded its sample to include all students throughout the Country to reduce the number of underachieving students. As a result, there was a gradual decrease in both the rate of underachievers and the disparity in scores between urban and rural students (Ministry of Education 2013a). Nevertheless, these positive effects could not offset the negative consequences of having brought about intense competition between schools, which placed great pressure on students.

After this problem surfaced as an issue, the Korean Government made an effort to reduce the burden on students. In 2010, target students participating in the test were changed from the first to second grade of high school, and the number of tested subjects was reduced to three (Korean, English, and mathematics). Similarly, the number of tested subjects for sixth grade students at elementary school was decreased to three in 2011. In 2013, the new government abolished the standardized test in elementary schools and reduced the number of tested subjects for middle school to three (Ministry of Education 2013a). Accordingly, the national achievement test is now composed of three subjects (Korean, English, and mathematics), and only targets third grade students in middle school and second grade students in high school. Given that the government is pushing these policies in spite of some concerns about declining academic ability, this indicates that the focus of Korea's educational policy is moving more toward student happiness.

Moreover, the new government initiated a policy known as called the "exam-free semester" to help students to lead happier lives. According to this policy, currently in its trial phrase, during one semester of middle school, teachers have the flexibility to make their classes more student-centered by organizing debates or internships, and without organizing traditional exams; students are also given a better chance to explore career choices by taking part in diverse activities and hands-on experiences outside the

school (Ministry of Education 2013b). To date, Korean students have not had enough time or energy to reflect on their dreams or talents because they have been too busy preparing for tests. This has led to 34.4 % of middle school Students and 32.3 % of high school Students saying that they had no future dreams or hopes (Korea Employment Information Service 2008). The new Government expects that the exam-free semester will make students happier by encouraging them to have a variety of experiences and discover their dreams and talents without the pressure of exams. To formulate this policy, the Korean Government undertook several research projects aimed at identifying effective ways to reduce the onerous amount of curricular contents in secondary schools by reconstructing curriculums based on the minimum elements. In addition, the Government established the Center for Free-semester Program in 2013, which has developed and disseminated a variety of curriculum models and programs for extending the experience and participation of students and trained teachers responsible for implementing policies. The steps to implement the “exam-free semester” have been taken in a gradual way, since the approach is regarded as an innovative departure from the traditional Korean teaching model focused subject-specific knowledge in the limited context of school. The Government has designated forty-two experimental schools and provided much support for the management and implementation of the project. The Government plans to implement this policy throughout all middle schools in 2016.

Despite the adoption of exam-free semester stemming from the efforts to resolve the exam-driven culture in Korean education, some concerns have been raised. According to a recent survey on the adoption of exam-free semester (Hong et al. 2013), many respondents, including students, parents, teachers, and scholars, considered that exam-free semester policy was lacking in its preparation and conditions for effective implementation. Specifically, respondents were concerned about the lack of research on the new policy and the poor infrastructure for community programs. Others expressed their concerns that the exam-free semester would weaken students’ subject knowledge, which might result in increased demands from students and parents for the intensive learning, thus leading to the expansion of the private education market (Choi et al. 2013). The Government is striving to minimize these concerns and issues through its creation of the Center for Free-semester Program, monitoring the experimental schools, and responding actively to teachers’ views on the new policy.

Need for Local Decision Making

Korea has maintained a centralized curriculum covering all elementary and secondary school education. The national

curriculum contributes to improving the quality of all students’ performance by determining the conditions of schools and classrooms; however, it also contributes to lowering the quality of educational achievement by disrupting professionalism in schools and classrooms. Many scholars are concerned about the uninformed prescription (Schleicher 2008) and hard description (Welner and Oakes 2008) of the national curriculum. Apple (1978) argues that an excessively prescriptive curriculum with prepackaged materials and instruction “scripts” is likely to interfere with the professionalism of teachers and intrude on the quality of teaching. Nichols and Berliner (2007) explain that standardized prescriptions are characterized by a specified curriculum, continuous monitoring through high-stakes examination, and a punitive approach to accountability, which simplifies teachers’ tasks and hinders the quality of education.

According to Schleicher (2008), education should move toward a knowledge-rich system, which is different from the traditional knowledge-poor system. Under the traditional education system, the national curriculum provides the content taught and learned in the classroom, but this system implies distrust in teachers. In this way, a national curriculum requires a political approach to oblige teachers to teach the content determined by external guidelines, but this approach puts pressure on teacher accountability and incentives. This traditional approach entails uninformed prescriptive guidelines and professionalism. Moreover, these prescriptions involve highly centralized accountability measures without any resources or opportunities for teachers to develop knowledge- and evidence-based professionalism. The alternative to this approach is to design *informed* prescriptive guidelines by including core standards at the national level that define conditions where local communities can interpret, translate, develop, and implement their curriculum (Schleicher 2008). In other words, future national curriculum should encourage principals and teachers to become “knowledge-rich” professionals who have the autonomy and knowledge necessary to act wisely and access to effective supporting systems.

Korea has controlled school education through a national curriculum based on traditional education systems, which has been criticized by Schleicher (2008). Subjects, class hours per subject, and subject content for each grade are prescribed in detail at the national level. However, Korea has adopted a new policy to expand local and school autonomy to determine their curriculum with an awareness of the danger of a standardized school curriculums and over-controlling of the national curriculum. This new policy began in earnest in the national curriculum revision in 1992. A typical example is the adoption of “optional activities,” which allowed schools to organize their own curriculum according to the needs of each school and

student (Ministry of Education 1992). Initially, these “optional activities” were allocated more than 1 h per week, but only in elementary schools. However, the policy soon extended to secondary schools and increased the allocated weekly time. In the 2009 revised national curriculum, the name “optional activities” was changed into “creative, experiential learning activities” and comprised at least 3 h per week in elementary and middle schools and 4 h per week in high schools (Ministry of Education, Science, and Technology 2009). Contrary to its intent, however, scholars argued that “creative, experiential learning activities” did not allow schools enough room to create their own curriculum, because the Government made certain programs on emerging issues, such as ICT education and school violence prevention, compulsory in the program, which took time away from actual creative experimental learning (Choi 2010; Min 2008; Park 2008).

Nevertheless, the turning point in curriculum autonomy was the national curriculum revision in 2009. Guidelines for the new curriculum gave more freedom for schools to determine their own curricula instead of detailed prescriptions. One example was the reduced number of prescriptions, which previously imposed strict boundaries between each grade and subject. Instead, the new national curriculum enables schools to determine how to organize their curricula by using a cluster system that combines numerous subjects and grades. In addition, under this new system, schools have the authority to increase or decrease 20 % of class hours required by the national curriculum. The adoption of this new autonomy at the school level has permitted teachers to develop much of their school curricula based on their professional judgment (Ministry of Education, Science, and Technology 2009). As a result, Korea has created an institutional framework for giving more autonomy to local decision making.

However, this does not mean that the 2009 policy accomplished its original intent. The new guidelines based on the subjects and grades’ cluster system caused new conflicts among teachers over fixing the class hours per grade, as they had organized the school curriculum according to the time allocation prescribed in the national curriculum (Gim 2010). Moreover, it was shown that the guidelines to increase or decrease per subject class hours by 20 % resulted in increasing the class hours for Korean language, mathematics, and English because they were included the national achievement test and College Scholastic Ability Test, which came at the expense of reducing class hours of music and art (Jeong et al. 2011). This suggests that teachers did not fully understand the purpose of this policy and its intention to change the exam-driven culture in education and create greater teacher autonomy. On the other hand, Korean curriculum scholars and teachers criticized the school curriculum as still being

under heavy Government control in spite of the Korean Government’s effort to expand curriculum autonomy (Baek 2010; Hong 2011; Jeong and Lee 2011; Gim 2011). As a result, the decision-making authority given to the local district and schools only led to them increasing or decreasing the class hours or differently arranging subjects by grade. Thus, it is necessary for decision making on curriculum contents and class hours to be switched from the state to local district and schools so that they can have substantial autonomy to develop their curriculum.

Conclusion: Challenges Remaining

Korea has initiated reforms to respond effectively to its educational problems and react actively to twenty-first century changes in learning ecology. However, these reforms can only be carried out by schools. Given Korea’s history and experience with education, sociocultural considerations need to be taken into account for these reforms to be implemented.

First, changes in teaching styles, assessment tools, and even school culture are required for practical changes to occur in schools. Although it is important to transform the national curriculum, give greater autonomy to local communities, and develop a competency-based curriculum, these efforts should be aligned with teaching, learning, and assessment in the classroom. In other words, the proposed reforms to the national curriculum will only succeed if there are innovations in teaching and learning, and new forms of assessment. Furthermore, it is necessary to restructure school culture to respond to these changes. The latest curriculum reforms in Korea expect teachers to construct and enact their own curricula instead of uncritically implementing the given curriculum. This change requires the school culture to emphasize cooperation and communication between teaching staff and give greater support to their professional judgments (Yin et al. 2011). Therefore, measures are needed to support school changes along with the national curriculum reforms.

Second, there is a need to support teachers’ professional development, since the recent curriculum reforms call for teachers’ professional determination and judgment more than ever before (Anthony 2008). Curricula for twenty-first century learning ecology do not define the role of teachers in terms of delivering outside knowledge. Teachers are now expected to determine and construct their own curricula in order to develop the necessary competencies of students and include them in the decision-making process more than ever before. This expectation calls for teachers to develop a different type of professionalism, that is, not a reproductive, but an adaptive one (Darling-Hammond and Bransford 2005). Teachers can adapt or enact the

curriculum with respect to their students, changing contexts, and knowledge demands instead of reproducing defined prescriptions. Thus, these changes require finding ways to cultivate adaptive professional skills among teachers in order to ensure the success of the reforms.

Finally, successful educational reform in Korea calls for changes to both the socioeconomic systems underlying the education system and national educational policy. The fundamental reason why Korean students experience high levels of stress over test scores is that in the current system, test scores determine their future social status (Sung 2011). Without any systematic change in terms of the connection between academic performance and future career success, the recent struggles of Korea might remain at the rhetorical level like countless educational reforms in the past. Thus, we need to pay attention to the systematic transformation of the hierarchical system and unequal pay-off structure in Korea, which accompany higher expectations and rewards for students' test scores, with the aim of creating a more effective learning culture to meet the challenges of the twenty-first century.

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