

Implementing Curriculum Integration: The Experiences of Korean Elementary Teachers

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This study examines 1) how Korean elementary teachers implement curriculum integration in their teaching practice and 2) what Korean elementary teachers experience in implementing curriculum integration. Several issues evolved from the analysis of three teachers' experiences: firstly, the teachers' lack of theoretical frameworks for curriculum integration, secondly, the teachers' pragmatic approach to curriculum integration, and thirdly, the limitations on implementing curriculum integration. In order for curriculum integration to be properly implemented and sustained, teachers' roles in and understanding of the curricula are crucial. Thus, the implications of the findings are discussed in terms of teacher preparation and training.

Key words: Korean elementary teachers, curriculum integration, implementation

Since the 1950s, the Korean educational system had adopted the policy of teaching subject matter in separate lessons based on various subjects. This approach has been heavily criticized, mainly for three reasons: 1) knowledge is constantly accumulating and fundamentally changing, 2) there is a discrepancy between the learners' holistic perceptions of the world and the artificial fragmentation of content, and 3) there is the serious problem of student alienation and a lack of engagement with school. Curriculum reform efforts in Korea, therefore, have gradually highlighted curriculum integration.

Integrated approaches to curriculum and teaching are a recurring curricular trend that has become popular around

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the world. A number of programs for curriculum integration have been planned and carried out in many countries, and numerous discussions and debates regarding curriculum integration have taken place. A recent literature search of the ERIC database using terms such as "interdisciplinary approach," "integrated curriculum," "cross-curricular approach," and "multidisciplinary approach" yielded more than 6,400 articles at the elementary level alone. An extended bibliography exists that analyzes various integration methods, clarifying the different terms used to describe integrated curriculum and presenting potential problems with putting curriculum integration into effect. However, less than 8 percentages were empirical research studies, and even fewer focused on teachers' actual experiences in implementing curriculum integration.

Curriculum integration has been extensively researched in Korea, but most of the research has focused on the need for curriculum integration (Hwang, 1998; Kim, 1992) and the theoretical models of integration (Kim, 1996; Lee, 2001). The research has also reported on the effectiveness of

integrated approaches in teaching and learning, as well as the problems, limitations, and obstacles involved in its implementation (Na, 2004; Park, 2007). However, relatively few studies document how Korean teachers implement curriculum integration and what they experience during its implementation.

Several exceptional studies have described Korean elementary teachers' experiences in implementing curriculum integration (Hong, 2006; Jeong, 2006), but they are strictly focused on the experience of implementing integrated textbooks developed for first and second graders by the national curriculum² and a theme-based interdisciplinary unit which is purposefully integrated by the researcher. In contrast, this study focuses on curriculum integration as experienced by Korean teachers who are directly engaged in its implementation, as opposed to following integrative textbooks or theoretical models constructed by researchers.

Many studies have reported that curriculum integration was initiated in Korea in 1981, but that teachers have not actively participated in its implementation (Hwang, 1998; Park, 2007). Teachers' roles in and understanding of the curriculum are crucial to curriculum integration's proper implementation. Though theoretical frameworks are indeed comprehensive, detailed and thorough, teachers who do not understand these frameworks will not be able to successfully implement the curriculum.

Thus, the purpose of this study is to provide a glimpse into what is actually happening with the alternative curricular approach of curriculum integration in Korean school settings where subjects constitute the foundations of curriculum structure, and to better understand teachers' attitudes and understandings of curriculum integration. The two overall research questions guiding this study are: 1) How do Korean elementary teachers implement curriculum integration in their teaching practice? and 2) What do Korean elementary teachers experience when implementing curriculum integration? I present the experiences of three elementary teachers in the form of a narrative text resulting from analyses of their interviews. Next, I discuss what findings I have derived from their narratives, and finally, I suggest some implications for teacher education and in-service training programs, as gleaned from the three teachers' narratives and applicable research.

The Theoretical Underpinnings for Curriculum Integration

The primary theoretical support for curriculum integration is found in progressive educational philosophy (Ellis & Fouts, 2001). John Dewey (1902), who established the philosophical and epistemological base for the progressive movement, insists that school is so unlike the real world that it has little or no meaning to the average child. It strikes a blow to the separate-subject, textbook-dominated school curriculum and becomes foundational to integrated curricular efforts (Arcavi & Schoenfeld, 1992).

The contemporary philosophy of constructivism also provides a more recent theoretical basis for integrated curriculum (Harris & Alexander, 1998; Kaufman & Brooks, 1996). Constructivism is a theory of learning that states that knowledge is constructed by each person (Gutek, 2004). It means that one's own direct experience, not someone else's experience abstracted and condensed into text-book forms, is the key to meaningful learning (Bodner, 1986; Tobin & Tippins, 1993). The importance of active construction of knowledge by the learner provides a central tenet for curriculum integration. Additionally, the constructivist focus on the social context and larger community of learners shifts away from individually-based teaching and learning to interdisciplinary teaching and learning (Kaufman & Brooks, 1996). Thus, the teaching of discrete knowledge in a linear sequence is rejected by constructivists.

Furthermore, Gardner's theory of multiple intelligences has justified integrated approaches to teaching and learning. Multiple intelligence theory broadens view of learning to encompass diverse ways human beings share information and make sense of their world. It encourages students to search for meaning and problem-solve across a wide-range of subjects areas (Mansilla, Miller, & Gardner, 2000). Moreover, brain-based research indicates that the brain seeks patterns and apparently resists information that is fragmented, personally meaningless, and presented in isolation (Caine & Caine, 1991). It suggests that students learn best when they are fully immersed in an educational experience and consider multiple views and connections across subjects.

The attention to integration is growing exponentially, and with such rapid growth comes confusion, uncertainty, and concern over what exactly is meant by integration and how schools ought to go about implementing such ideas. A

wide range of theoretical and practical conceptualizations of integration exist. Fogarty (1991), for example, suggests an integration continuum with several models arranged upon on it. The continuum begins with the study of separate subjects within isolated disciplines, then works through models integrating a few subjects, and ends with models where the integration occurs within the learner. Drake (1998) describes a progression in the process of curriculum development through multidisciplinary, interdisciplinary, and transdisciplinary approaches, each involving fewer distinctions between subjects.

While acknowledging some of the advantages of a continuum used to categorize different forms of integration, Hargreaves and his colleagues (1996) criticize the need for educators to classify in such a way. They suggest that a continuum does not capture the complexity of integration and possibly clumps together behaviors that do not in fact belong together. Similarly, such integrated models are criticized by Panaritis (1995) because of the implied value position that more integration is better than less. In light of those criticisms, Drake (1998) argues that “one position is not superior to another: rather different approaches are more appropriate than others according to the context in which they are used” (p. 19). Based upon those arguments, I cannot say that some approaches are better, but merely that they are different. Further, I cannot say that integration is better than subject-based curricula. With this balanced understanding of the situation, I have attempted to comprehend the various forms of integration implemented by the participant teachers, instead of estimating how well they are practicing curriculum integration.

Research Method

Overall Approach and Rationale

The main purpose of this study is to investigate what Korean elementary teachers experience when implementing curriculum integration. As the elementary teachers’ subject realities, including their concerns, achievements, and understanding about curriculum integration are significant in this study, I adopted the qualitative research interview method. As Kvale (1996) states, the qualitative research interview is intended to provide a rich and detail description and in-depth understanding of individual experiences.

Date Procedure and Analysis

I interviewed three Korean elementary teachers for this study: Rose, Orchid, and Lily. The information on each participant teacher will be described in detail in the next section. The participant teachers were selected based on their availability and willingness to participate. The interviews were semi-structured, using an open-ended interview guide inviting the participant teachers to speak in their own words and in narrative structures (Mishler, 1986). The research questions guiding the interview were: how the participant teachers defined the concept of curriculum integration, how they had acquired this understanding, how they applied the idea of curriculum integration to everyday practices, what those practices were like, and what successes and difficulties were encountered during their implementation. All issues brought up by the participant teachers were pursued through follow-up questions.

Although the researcher is supposed to play an active role in the semi-structured interview, I attempted to minimize my control over the course of the interview by allowing the participant teachers to tell their stories on their own. Moreover, I attempted to create a reciprocal relationship with the participant teachers by sharing my knowledge on curriculum and my experience on teaching.

The interviews were conducted with each participant teacher over a one to two-hour period. A total of nine interviews were held, and the responses were tape-recorded and transcribed verbatim.

Interview data was processed through qualitative content analysis. Qualitative content analysis, a flexible method for analyzing text data, is intended to “to provide knowledge and understanding of the phenomenon under study” (Downe-Wamboldt, 1992, p. 314). In this study, qualitative content analysis is used for the subjective understanding of the participants and interpretation of the data through the systematic classification process of coding and identifying themes or patterns.

Data analysis was conducted as follows (Miles & Huberman, 1994; Morgan, 1993): the interview data was read several times to obtain a sense of the teachers’ experiences as a whole. While reading, I took field-notes outlining my notions about what I could do with the data. The field-notes were used when I interpreted the data and found the themes to be addressed. In this process, the

condensed meaning units were abstracted and labeled with a code. The whole context was considered when condensing and labeling meaning units with codes. The various codes were sorted into sub-categories that constituted the manifest content, which showed differences and similarities among the codes. Then the underlying category meanings were sorted into six content areas: the participant teachers' understandings of the concepts of curriculum integration, strategies of integration, aims and advantages of integration, characteristics of the integrated curricula implemented, obstacles in their implementation, and the roles of teachers and students in an integrated curriculum. A story line for each participant's narrative was identified based on those content areas.

Member-checks were employed for validity. This involves allowing the participant teachers to review the data that has been collected. Each participant teacher in this study was afforded opportunities to read, correct, and make comments on the transcripts of the interviews and the themes found in this study (Lincoln & Guba, 1985). Additionally, I discussed the interpretations of the data and the findings with my colleagues who knew a great deal about curriculum integration. Such discussion served the purpose of "peer-debriefing", what Lincoln and Guba (1985) described as "exposing oneself to a disinterested professional peer to keep the inquirer honest" (p. 308).

Data Description

The curriculum integration experiences of three elementary teachers are described through their narratives, which show what they think curriculum integration means, how they implement curriculum integration in their everyday teaching, why they think curriculum integration is needed, what impedes them from actively implementing curriculum integration, and where they get viable information on curriculum integration.

Rose

Rose is a thirty-one-year-old married woman with seven years of experience as an elementary teacher. She graduated in 1998 from the Seoul National University of Education. Her major was social science education for

elementary students. Rose was teaching third grade students at the interview and actively attempting various strategies for curriculum integration. Curriculum integration seemed to her a central area to exert teachers' professionalism in terms of restructuring school knowledge that is prescribed and standardized by the national curriculum. While deconstructing and reconstructing the curriculum by combining and coordinating a cluster of subjects beyond the restricted framework of the curriculum, she has become a curriculum creator instead of a transmitter of the school knowledge given to her.

During her first year of teaching, Rose experimented with a more thematic planning approach in which a broad theme provided the basis for integration. But such planning took a tremendous amount of time and energy, which made her feel overburdened. Eventually, Rose reverted to more traditional forms of teaching. The next year she was in charge of organizing and managing the overall structure of curriculum for the third graders. This experience enabled her to become more knowledgeable about the structure of the curriculum and obtain a more comprehensive understanding of curriculum beyond subject matter, including *Jaeryang-hwaldong*,³ *Teukbyul-hwaldong*,⁴ and *Chuehum-hwaksueb*.⁵ As she developed a more flexible and less prescriptive sense of curriculum while connecting learning areas among subjects and between various parts of the curriculum—*Jaeryang-hwaldong*, *Teukbyul-hwaldong*, and *Chuehum-hwaksueb*—she opened up to the intrinsic virtue of curriculum integration and to implementing curriculum integration with respect to the school's specific circumstances, such as the classroom climate, student characteristics, the nature of subject matter, etc.

Rose employed a set of learning activities such as role-playing and *Modum-hakseub*⁶ as strategies for curriculum integration. Employing these activities, she helped students work cooperatively in teams and construct knowledge on their own. Role-playing and *Modum-hakseub* were the most frequently employed methods of integration in her class. Rose noted:

While I implement role-playing, although I don't mean to integrate curriculum, curriculum integration naturally happens. For instance, when I ask students to role-play, they do some research, write scripts, make preparations for set pieces, and make presentations in front of the class. Those processes bring together various spheres of knowledge and various

subjects of study, such as social science, art, Korean writing, and speaking class, too. Eventually, the curriculum is integrated. Modum-hakseub is another strategy for curriculum integration. This activity also allows students to participate in various learning areas and choose learning sources depending on their own learning styles. Furthermore, I work cooperatively with students in the educative process to ensure successful learning.

Rose underlined the fact that when students were involved in an integrated curriculum, they became more engaged and excited about their learning and demonstrated less competition and more cooperation. She seemed to consider the benefits of curriculum integration in terms of improvement in the affective areas beyond epistemological aspects, while other participant teachers thought of curriculum integration as subject-matter content. Additionally, Rose reported some of the benefits of curriculum integration as follows: shared learning outcomes, active participation, individualized and diversified education for each student, working together for group work, and independent learning.

However, Rose was challenged by a subject-dominated curriculum structure. She complained that while she organized learning activities around an integrated curriculum, she was still required to evaluate her students in terms of student outcomes in the separate subject areas. This gap between integrated curriculum and subject-based evaluation systems made curriculum integration difficult.

Orchid

Orchid is a thirty-five-year-old married man with nine years of experience as an elementary teacher. He graduated in 1995 from the Seoul National University of Education. His specialty is mathematics education for elementary students. He was teaching fifth grade students when I interviewed him.

Orchid was in favor of an integrated approach because he thought it was an effective way to save time by overlapping concepts and ideas around different subjects. However, he was simultaneously concerned that an integrated curriculum might lead to an “amorphous mass”. He advanced the criticism that curriculum integration could become a potpourri approach when integrative links were either forced or very tenuous and lacked obvious

connections and touch-points between subjects. Indeed, not all subjects can be interrelated. His notion of curriculum integration was rooted in an understanding of how contents and ideas could be interrelated and integrated. The key point for curriculum integration, he thought, is that it should be adopted only when there are obvious connections and touch-points between subjects.

At the initial interview, Orchid expressed his confusion and uncertainty about the notion of curriculum integration. Though he mentioned different levels of integration such as thematic integration, topic integration, knowledge integration, and learner-initiated integration, he was unaware of the different levels and degrees of integration. Furthermore, although he seemed familiar with the idea of curriculum integration, his view limited to a thematic- or topic-based integration. At the beginning of the interview, he did not recognize that he was implementing curriculum integration because his implementation was not concerned with a systematic integration by design, such as theme-based integration. However, Orchid realized that he was naturally implementing curriculum integration in his everyday teaching practice during the interview:

Well, I think, when several subjects are connected and integrated around a thematically integrated topic, we call it curriculum integration. But it requires extraordinary time and energy. That’s why I hesitate about the implementation of an integrated curriculum, although I think it is a good idea. I’m trying to implement curriculum integration once or two times in a semester. But more frequently, I simultaneously teach related ideas between and within separate subjects. For instance, if students read a passage titled “solar system” in a Korean reading class, I spontaneously mention a body of knowledge related to the solar system in a science subject. Like this, dealing with related ideas or concepts together, I make connections between and within subjects, and relate subject-based knowledge to real issues in students’ lives, and to other people, ideas, and events beyond the boundaries of the classroom. But I’m not sure whether I can call it curriculum integration.

In his teaching, Orchid frequently brought together related contents from various parts of the curriculum and coordinated them. This method of integration seems easier and more viable for classroom teachers because it does not eliminate the framework of the regular curriculum.

Despite his positive estimation of curriculum integration, he felt burdened by its implementation due to a number of practical barriers. Those barriers included an overcrowded and content-laden curriculum, excessive official duties, and parental pressure for traditional academic standards and subject-based qualifications. Among these, he emphasized the coexistence of overcrowded content and excessive official duties as a common argument against the implementation of curriculum integration. He voiced his opinions thus:

I think that the level of the Korean curriculum is too high compared to the curriculum from other countries. For example, in mathematics, high school students have to learn many things such as calculus one and two, and mathematical functions like college students in other countries. Students have to be ready to learn high school-level subject matter before they enroll in high schools. As a result, students have to learn a great deal of subject matter in elementary and middle schools. If I teach subject matter in a simple way, my students cannot catch up with classes when they enter the middle school. More seriously, I don't have enough time to cover each subject completely. There are many things for teachers to do in schools. Then I have missed what I have to do for my students. If I am relieved of official duties and only work at teaching students, I will be better able to do many things for them, such as reconstructing the curriculum.

This statement implies that the gains of developing an integrated curriculum were often offset by the time and energy that had to be invested in reorganizing the content of subjects, and the frustrations experienced by the lack of curriculum support.

Lily

Lily is thirty-six-year-old single woman with twelve years of teaching experience in elementary schools. Her field of concentration is science education for elementary students. Lily was teaching fifth graders when I interviewed her and was less likely than the other teachers to be interested in curriculum integration. She criticized the lack of appropriate in-service training programs to familiarize teachers with curriculum integration, the lack of viable methodologies for curriculum integration, and the lack of sufficient information for schools, pupils, parents, and teachers. By way of illustration of these concerns, Lily had this to say:

If I want to implement curriculum integration, I would have to research it myself. There is so much information on theoretical models but very little empirically grounded models and guidelines that I can refer to. I'm left alone to do it all myself. I'm supposed to do everything on my own such as rescheduling the timetable, selecting related elements from various subjects, reorganizing the contents, etc. It bothers me.

Lily's statement may explain why she drifted away from integrated practice and toward subject-based teaching when things were not going well. Subject-based teaching seemed to be her "default option" because it was so familiar to her. Another compelling reason for hesitating about the implementation of curriculum integration was that she did not want to take the risk of convincing parents, who were used to traditional subject structures, particularly those parents who were concerned that an integrated curriculum would reduce the level of each academic discipline. She also reported that she was overwhelmed by the pressure to have her students perform well on standardized assessments and by overcrowded curriculum contents in the upper elementary grades.

In addition to those problems, Lily expressed concern about the polarity problem between an integrated and a subject-based approach. She embraced a moderate view of the elementary school curriculum that encompassed both curricular approaches. Certainly, Lily assumed that students could not fully benefit from curriculum integration until they acquired a solid grounding in each subject. Although she supported the growing need for curriculum integration, she did not believe that curriculum integration and subject specialization were mutually exclusive alternatives. When I asked about her strategies for curriculum integration, Lily insisted that the subject-based knowledge should be taught and understood before authentic connections and links among content areas were made. She noted:

I think curriculum integration is necessary; however, we cannot use only integration strategy. For instance, in a clock-making class, the class needs mathematical and scientific knowledge. But, if students have not learned the subject matter knowledge through textbooks, how can they make a clock? Although curriculum integration is an important issue in the seventh national curriculum, I think students need to learn the subject matter content, too. The subject matter knowledge is the basic contents they are supposed to learn in

school so that they can apply them to other situations. Otherwise, students will acquire merely naïve understandings of each subject and show deficiencies in specific subject-matter knowledge.

Rose believed that the successful implementation of curriculum integration depended on a teacher's ability to sense how and when to implement subject-based or integrated teaching. However, she claimed that teachers rarely have the opportunity to get key information about theoretical frameworks and practical strategies regarding curriculum integration. It may explain that, although she insisted on instruction balanced between subject-based and integrated teaching methods, her teaching still leaned toward subject matter and content-centered teaching styles.

Findings and Discussions

This study attempted to examine three teachers' attitudes and understandings of the integrative approach and its implementation. Several issues evolved from analysis of the teachers' experiences: firstly, teachers lack the theoretical frameworks for curriculum integration, secondly, teachers adopt a pragmatic approach to curriculum integration, and thirdly, there are limitations to implementing curriculum integration.

Lack of Appropriate Theoretical Frameworks for Curriculum Integration

This study found that teachers' lack of appropriate and viable theoretical frameworks for curriculum integration was one of the more significant reasons for their reluctance to implement curriculum integration. Many Korean researchers have pointed out that teachers' limited understandings of curriculum integration lead to implementation problems (Hwang, 1998; Na, 2004). The participant teachers were only partially acquainted with the primary concepts behind the integrative approach, and their understandings of these concepts were largely intuitive and not based on a study of their significance and of the possibilities of applying them to their teaching. They planned curricular activities for integration that were mostly dependent on their intuition and experiences without an appropriate theoretical basis, which

affects the essence and quality of integrated curricular development in schools.

The interviews also imply that the language of curriculum integration is still confusing to teachers, which leads to uncertainty and concerns about the potential of integrated curricula to impact schools positively. The participant teachers clearly expressed uncertainty over the concept of curriculum integration. For example, Orchid and Lily were not sure that they were implementing curriculum integration, although integration strategies had been naturally implemented into their instruction by connecting related knowledge. Furthermore, Rose was very supportive of curriculum integration; however, her concept of curriculum integration was limited to a theme-based or activity-based approach. These experiences suggest that the participant teachers consider curriculum integration simply as a teaching method rather than actively applying it to the creation and reconstruction of knowledge in a new way.

This finding is important because if teachers are insufficiently informed about curriculum integration, they may not apply it to their teaching, despite the fact that they think it is valuable. In order for teachers to plan properly and develop an effective integrated approach, they need to be prepared by an adequate knowledge of curriculum integration. Furthermore, if teachers are planning curricular activities while lacking the appropriate theoretical background, it will affect the nature and quality of integrated curriculum development in schools. When implementing curriculum integration, teachers are required to make decisions related to the nature and the depth of integration. When a teacher lacks a thorough understanding of curriculum integration and simply bases his or her attempts on intuition, the results may prove amateurish and of low quality.

A Pragmatic Approach to Curriculum Integration

Although the participant teachers did not have enough theoretical background on curriculum integration, they were teaching by integrating and connecting interrelated areas from various parts of the curriculum. The teachers had not intended to, but they used curriculum integration strategies instinctively in the process of their teaching. For example, when Rose taught retrograde movement in her math lessons

for second graders in an elementary school—as in $8-3=5$ and its connection to $3+5=8$ —she spontaneously explained it by connecting this knowledge to the concept of retrograde movement in dance.

Most studies on curriculum integration have focused on topic- or theme-based approaches which are widely used in implementing curriculum integration (Cho & Kim, 1996; Hong, 2006). However, I found that even those participant teachers who felt uncomfortable working with thematic-based integration, made natural links and connections within, across, and beyond subject boundaries based on the framework of subject-based curriculums with which they were familiar. This finding yields significant implications.

First, the finding suggests that the teachers align integrated curricular approaches with a subject-dominated curriculum structure. In contrast to research that reports that Korean elementary teachers recognize curriculum integration and subject specialization as mutually exclusive alternatives (Na, 2004), the participant teachers embraced a pragmatic perspective on curriculum integration that coordinates and synchronizes learning areas maintaining established subject boundaries. This pragmatic approach allows the teachers to recognize and meet the needs of students and parents who are used to a subject-based curricular structure. Instead of attempting to ignore the boundaries, the teachers commingle integrated curricular with traditional subject-based approaches. This observation is critical in terms of linking theoretical positions with practical positions, which is a pragmatic approach to integrated curricula. Although theoretical scholarly work has explained the apparent divide between the proponents and opponents of curriculum integration (Gardner & Boix-Mansilla, 1994), I realized that from the teachers' perspectives, it is necessary that the two approaches—the integrated approach and the subject-based approach—be considered together and overlapped. These two approaches, as Goodson and Marsh (1996) pointed out, are like blocks in the mosaic of the curriculum.

Given the long-established curriculum structure based on school subjects, this pragmatic approach seems an advantageous and realistic means of integration, because it still views the subjects as the major forces of the curriculum. Moreover, working in this way does not require teachers extra time to plan. Instead, it requires teachers to spend time becoming familiar with what connections and overlaps

between subjects exist, how they are possibly connected, and what is important in connecting and relating knowledge between subjects. Additionally, the teachers felt more comfortable with this pragmatic approach because they could apply an integrated approach only when they found explicit connections and interrelations between contents, instead of forcing connections where connections do not exist. Some research that has been undertaken has found that teachers feel irritated when they are required to integrate contents that do not connect naturally with the integrated theme, topic, or project (Venville, Wallace, Rennie, & Malone, 1999).

Another implication of the finding is that the teachers have much broader understandings of curriculum integration and its implementation than theoretical models for integration do. Little attention is given to this practical approach in scholarly work, which mainly focuses on thematic or topic-based approaches with the implication that more integration is synonymous with better integration. In contrast, the teachers' experiences in this study present a broad spectrum of integrated classroom practices, ranging from deliberate and explicit attempts to integrate—including thematic and topic based approaches certainly defined as a major strategy for integration—to more incidental and informal efforts made by natural connections with related content areas or by linking students' prior knowledge, experiences, and interests to their learning. This wide variety of integrated practices needs to be considered to capture the complexity of integration.

Limitations on Implementing Curriculum Integration

Many studies have reported the problems that teachers have experienced in implementing curriculum integration (Na, 2004; Park, 2007), including a lack of information, an excess of official duties, a lack of facilities, and a lack of in-service education for curriculum integration. Through the participant teachers' discussions, I found similar results and concerns. Although the participant teachers emphasized the inevitable need for curriculum integration, they easily gave up when it came to implementation of it in light of those problems, which can be explained in terms of what Tylack and Tobin (1994) call "the grammar of schooling". Grammar underpins the culture of schools and is reinforced by the customs, rituals, ceremonies, and artifacts of everyday

school life (Deal & Kennedy, 1982). Once established, the grammar of schooling is difficult to change. Many factors contribute to the strength and persistence of the traditional grammar of elementary schools, including teacher recruitment and identity, assessment structure, content-laden curriculums, content-specific textbooks, and over-assigned official duties.

Throughout this research, the persistence of the grammar of schooling was expressed in many different ways. Traditional patterns of assessment, school structure and timetabling based on subject-based curricula, pressure for traditional academic standards, instructional periods, textbooks, curriculum guides, teachers themselves who are trained in the subject-divided curriculum and have developed long-standing attachments to it, and the lack of a culture of school collaboration, all pose significant barriers to the implementation and continuation of curriculum integration.

The social structure and school circumstances for teachers in Korea are the most challenging issues in curriculum implementation. It may imply that failures in implementation can be attributed to individual school circumstances rather than some underlying flaw in the integration method. Curriculum integration is not itself the problem. The problem is combined with other issues. The social structure and school circumstances need to be carefully examined to understand more about Korean teachers' implementation of curriculum integration.

Another reason teachers are reluctant to engage in curriculum integration is that parents are more used to the traditional subject structures. Parents want their children to achieve and most parents' notions of achievement are to duplicate what they did when they were in school. However, times have changed, students have changed, and the quantity of knowledge has changed. What has adequately served them in the past simply will not work today for the majority of students. Yet the new idea of curriculum integration is met with skepticism from parents. This implies that it is important to help parents understand what curriculum integration means, and what the potential benefits are for students.

Conclusions

Since the sixth Korean national curriculum⁷, Korean curricular policy has been changed from a mandatory formal

curriculum based on separate subjects to the encouragement of initiatives to develop integrative school-based curricula. Nevertheless, I found that the teachers in this study were not familiar with the models of integrative planning, did not find them relevant, and did not use them during their teaching. Despite the existence of sufficient theoretical frameworks to assist in integration, the teachers were implementing curriculum integration on their own, based on a pragmatic perspective in which integrated curricula coexisted with traditional subject-based approaches. Using combinations of subject-based and integrated approaches, the teachers achieved a balanced mode of instruction by implementing subject-based direct instruction and integrated teaching methods in reciprocal ways. Even when the teachers leaned toward curriculum integration, they were frustrated by some of its practical obstacles. Some of these limitations which discouraged the teachers from implementing curriculum integration within the framework of the grammar of schooling were discussed here.

Given these findings, I have consequently learned that Korean elementary teachers need to be more broadly and deeply educated and informed as to what is expected from this new curricular approach and fully trained to apply it in their teaching. Thus, I make three suggestions for training qualified teachers using more relevant and educationally-meaningful knowledge for curriculum integration.

Teacher Education

Korean teacher education is based on academic disciplines and the subjects taught in schools. Therefore, I recommend expanding this area of study and including interdisciplinary courses within the teacher education program, thus exposing teachers to considerations involved in making integrative frameworks and to the integration process itself. This would promote an in-depth understanding of the approaches and concepts of curriculum integration and provide opportunities for experiencing their application before teachers enter schools. Indeed, research indicates that if teachers are to engage in interdisciplinary curricular endeavors in schools, they must be able to experience and explore such settings in their teacher education programs (Kaufman & Brooks, 1996; Richards & Shea, 2006). Thus, the entire teacher education process needs to be restructured if we are to have teachers who can operate within an

integrated model of the school curriculum. For instance, teachers need to be taught by professors who can demonstrate the interconnectedness of content, and they should be expected to demonstrate their abilities to identify relationships between ideas and events.

In-Service Training and Guidance

An analysis of this study illustrates that teachers are unable to fulfill the expectations placed upon them by the idea of curriculum integration. The teachers claimed that they were not equipped in terms of knowledge and materials for covering the proposed aims of an integrated curriculum. Much research indicates that for curriculum integration to be successfully implemented, teachers must have knowledge of and learn how to effectively deal with school constraints and contextual factors (Gehrke, 1991; Huntley, 1999). Thus, the education system should include in-service programs that provide teachers and principals with extensive theoretical knowledge related to curriculum integration along with practical experience. Such in-service courses should emphasize the development of a rationale for school restructuring, for reformulating an educational platform, and for creating organizational and pedagogical flexibility.

Practical Guidelines Based on Teachers' Experiences

This study implies that Korean teachers need guidelines for dealing with immediate practical questions and problems encountered when implementing curriculum integration. Despite much research on the theoretical frameworks for curriculum integration, little research explores how those frameworks are manifest in school settings (Hargreaves & Moore, 2000). It is important to provide classroom teachers with more accessible guidelines grounded in their practical experiences of designing and implementing integrated curricula and with practical models for authentic curricula that are well-connected to students' needs and interests and to the world outside of school. We have often witnessed that when a new curriculum theory has been adopted and translated into official policy, classroom teachers normally do not implement it. Given this gap between an espoused theory and that theory-in-use, it is important to bring schools to the discussion table when identifying this new approach as beyond abstract theorizing. More research needs to

respond to the challenges and problems confronted by the practical implementation of curriculum integration.

Notes

- ¹ Historically, curriculum integration has been applied in the Korean schools since the fourth national curriculum in 1982. At the time, curriculum integration was applied only for the first and second grade in elementary schools. Since the sixth national curriculum, curriculum integration has been actively encouraged in Korea. An integrated approach has been added for all subjects and teaching paradigms in the elementary school in the seventh national curriculum.
- ² Three integrated textbooks exist for the first and second grades in Korea, which make it easy to implement curriculum integration in those grades. "Zeulgaun-saenghwal" is a textbook integrated with art, music, and physical education subjects. "Seulkiroun-saenghwal" is a textbook integrated with science and social science. "We are the first year" is created to make the first graders' transitional process smooth.
- ³ It means a class in which teachers can manage their classes on their own during the time given by school policy. Then, teachers do not need to follow usual rules in schools, such as their school policies, textbook progresses, and others.
- ⁴ It means a class in which students can choose by their interests during the time given by school policy, such as a soccer class, a poem-writing class, a physics experiment class, a reading class, and others. It usually meets once a week.
- ⁵ It means a class where students have other experiences outside of school, such as going to a movie, observing some places, etc. It is similar to field trips.
- ⁶ It means a class in which teachers give students problems or research themes and students solve their problems and research themes together. Teachers also arrange students' tables in free styles like triangles, circles, and other forms.
- ⁷ The sixth Korean national curriculum was initiated in 1992 and had lasted until 1998.

References

- Arcavi, A., & Schoenfeld, A. H. (1992). Mathematics tutoring through a constructivist lens: The challenges of sense-making. *Journal of Mathematical Behavior*, 11(4), 321-335.

- Bodner, G. M. (1986) Constructivism: A theory of knowledge. *Journal of Chemical Education*, 63(10), 873-878.
- Cho, Y., & Kim, K. (1996). The construction of theme-based curriculum integration. *The Korean Journal of Educational Research*, 34(1), 251-272.
- Caine, R., & Caine, G. (1991). Reinventing schools through brain-based learning. *Educational Leadership*, 52(7), 43-45.
- Deal, T. E., & Kennedy, A. A. (1982). *Corporate cultures*. MA: Addison Wesley.
- Dewey, J. (1902). *The child and the curriculum*. Chicago: University of Chicago Press.
- Downe-Wamboldt, B. (1992). Content analysis: Method, applications, and issues. *Health Care for Women International*, 13(3), 313-321.
- Drake, S. M. (1998). *Creating integrated curriculum: Proven ways to increase student learning*. Thousand Oaks, CA: Corwin Press.
- Ellis, A. K., & Fouts, J. F. (2001) Interdisciplinary curriculum: The research base. *Music Educators Journal*, 87(5), 22-26.
- Fogarty, R. (1991). Ten ways to integrate curriculum. *Educational Leadership*, 49(2), 61-65.
- Gardner, H., & Boix-Mansilla, V. (1994). Teaching for understanding in the discipline and beyond. *Teachers College Record*, 96, 125-140.
- Gehrke, N. J. (1991). Exploration of teachers' development of integrative curriculum. *Journal of Curriculum Studies*, 23(6), 107-117.
- Goodson, I. F., & Marsh, C. J. (1996). *Studying school subjects: A guide*. London: Falmer Press.
- Gutek, G. (2004). *Philosophical and ideological voices in education*. Boston: Pearson Education.
- Hargreaves, A., Earl, L., & Ryan, J. (1996). *Schooling for change: Reinventing education for early adolescents*. London: Falmer Press.
- Hargreaves, A., & Moore, S. (2000). Curriculum integration and classroom relevance: A study of teachers' practice. *Journal of Curriculum and Supervision*, 15(2), 89-112.
- Harris, K. R., & Alexander, P. A. (1998). Integrated, constructivist education: Challenge and reality. *Educational Psychology Review*, 10(2), 115-127.
- Hong, Y. (2006). A case study on elementary teachers' curriculum integration. *Anthropology of Education*, 9(2), 167-188.
- Huntley, M. A. (1999). Theoretical and empirical investigations of integrated mathematics and science education in the middle grades with implications for teacher education. *Journal of Teacher Education*, 50(1), 57-67.
- Hwang, Y. (1998). A recent trend of educational research for curriculum integration. *The Journal of Chunnam Education*, 92, 91-100.
- Jeong, K. (2006). A narrative inquiry into implementation of integrated textbooks based on Korean elementary teachers. *The Korean Journal of Curriculum Studies*, 24(3), 125-146.
- Kaufman, D., & Brooks, J. (1996). Interdisciplinary collaboration in teacher education: A constructivist approach. *TESOL Quarterly*, 30, 231-251.
- Kim, D. (1996). A model for developing integrated curriculum at the school level. *The Korean Journal of Curriculum Studies*, 14(3), 18-40.
- Kim, J. (1992). The necessity and validity of curriculum integration. *The Journal of Education Development*, 14, 92-103.
- Kvale, S. (1996). *Interview: An introduction to qualitative research interviewing*. Thousand Oaks, CA: Sage Publication.
- Lee, Y. (2001). *Curriculum integration*. Seoul, Korea: Hakjisa.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage Publication.
- Mansilla, V. B., Miller, W. C., & Gardner, H. (2000). On disciplinary lenses and interdisciplinary work. In S. Wineburg & P. Grossman (Eds.), *Interdisciplinary curriculum: Challenges to implementation* (pp. 17-38). New York: Teachers College Press.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage publication.
- Mishler, E. G. (1986). *Research interviewing—Context and narrative*. Cambridge, MA: Harvard University Press.
- Morgan, D. L. (1993). Qualitative content analysis: A guide to paths not taken. *Qualitative Health Research*, 3(1), 112-121.
- Na, J. (2004). Elementary school teachers' understandings on curriculum integration. *The Korean Journal of Curriculum Studies*, 22(1), 101-124.
- Panaritis, P. (1995). Beyond brainstorming: Planning a successful interdisciplinary program. *Phi Delta Kappan*, 86(8), 623-628.

- Park, H. (2007). A narrative inquiry into what school culture makes it difficult to implement curriculum integration: A beginning teacher's experience. *Anthropology of Education, 10*(1), 63-88.
- Richards, J. C., & Shea, K. T. (2006). Moving from separate subject to interdisciplinary teaching: The complexity of change in a preservice teacher K-1 early field experience. *The Qualitative Report, 11*(1), 1-19.
- Tobin, K., & Tippins, D. (1993). Constructivism as a referent for teaching and learning. In K. G. Tobin (Ed.), *The practice of constructivism in science education* (pp. 3-21). Washington: AAAS Press.
- Tylack, D., & Tobin, W. (1994). The grammar of schooling: Why has it been so hard to change? *American Educational Research Journal, 31*(3), 453-480.
- Venville, G., Wallace, J., Rennie, L., & Malone, J. (1999). *Science, mathematics, and technology: Case studies of integrated teaching*. Perth, WA: Curtin University of Technology.

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