

A Study on improvement of curriculum for music education in elementary, middle and high schools: Focusing on statistical comparative analysis and meta-analysis

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Abstract

The purpose of this study is to analyze the contents of the current 2015 revised music curriculum in Korea and to present the contents of the music to be improved. Research methods were documentary research, Delphi investigations, and FGI. The comparative criteria for documentary research were the music curriculum of 2009 that was previously revised in Korea and the content of music that was recently discussed in the OECD. The Delphi survey and FGI also included a total of 20 music education professors and teachers. As a result of analysis, first, in the future, Korean music curriculum should include various music cultures from around the world and their contributions. Second, ethical content related to music should be added, and third, music content that develops creative skills and thinking skills in the music curriculum must be additionally included.

Keywords: Curriculum, Content, Music, Music Education, Improvement

1. Introduction

Korean education is conducted according to the curriculum made in the country. In Korea, the curriculum is periodically revised in consideration of educational trends and learner needs. The music curriculum systematically includes objectives, content, methods and assessments for school music education [1] and is the most important foundation in music education. The curriculum has undergone various changes depending on educational values, the main content of knowledge, and the educational and social context. Currently, the revised music curriculum in 2015 is being applied. The curriculum, currently revised in 2015, has evolved more than ever in that it includes recent global education issues such as competency, core concepts and convergence, but is still considered to have limitations in the actual implementation of these issues [2], [3]. In addition, although a new curriculum study [4] is currently being conducted internationally in the OECD, there has not been much discussion in the curriculum considering these international trends in Korea.

At this point, it is necessary to study the problems of the current music curriculum revised in 2015 and what needs to be improved in the future. So far, many studies have been conducted to analyze the 2015 revised curriculum in the field of music education [5], [6], but due to the introduction of new competencies, many studies have performed competency analysis in the macroscopic aspect. So, for example, content analysis from a more detailed perspective, such as which music content is unnecessary or which should be further included in order to improve capacity, is still insufficient. In addition, the OECD, which has a great influence on improving curriculum worldwide, has been conducting various studies focusing on curriculum change and content composition from 2015 to present [7], [8]. However, studies examining the OECD results in Korea are still insufficient. In other words, since the music curriculum research conducted by the OECD includes music education trends in various countries, it is necessary to reconsider the direction of music education in Korea by comparing this OECD study with the current Korean music curriculum.

Therefore, the purpose of this study is to analyze the contents of the 2015 revised music curriculum in more detail and to propose the necessary improvements when revising the new music curriculum in the future. In order to achieve the purpose of this study, the contents of the Korean music curriculum revised in 2015 were analyzed in two aspects. The first is to compare Korea's previous curriculum to take into account the context and situation of Korea's education, and the second is to compare it with the OECD music curriculum currently being studied to confirm the global education situation. Based on the analysis of these two aspects, the researcher tried to systematically grasp the contents of the current 2015 revised music curriculum and propose improvements. The school music curriculum consists of elementary, middle and high schools, and this study covers all three school levels.

2. Theoretical Background

2.1. Overview of Korean Music Curriculum

The content areas of Korea's 2009 and 2015 revised music curriculum are summarized in elementary, middle, and high schools as shown in Tables 1, 2 and 3 [9], [10].

Table 1. The Composition of the Contents	of the 2009 and the 2015 Revised	Music Curriculum for Elementary School

2009 Revised Music Curriculum			
Content Area	Content element(Elementary school grades 3-6)		
Expression	Expressing in the right posture Expressing the characteristics of the music Make and express music creatively		
Appreciation	Understanding the elements and concepts of music Listening to the music and understanding the characteristics of the music		
Music in Life	Have an attitude to enjoy music Recognizing the value of Korean traditional music		
	2015 Revised Music (Curriculum	
Content Area	Content element (Elementary school grades 3-4)	Content element (Elementary school grades 5-6)	
Expression	Construction of music Posture and performance	Construction of music Posture and performance	
Appreciation	3-4 grade level musical elements and concepts Music expressing the situation or story	5-6 grade level musical elements and concepts Music from various cultures	
Music in Life	Music and Events Music and Play korean traditional music	Music and events Music and health Korean traditional music and cultural heritage	

	2009 Revised Music Curriculum	2015 Revised Music Curriculum
Content Area	Content element	Content element
Expression	Expressing in the right posture Expressing the characteristics of the music Make and express music creatively	Construction of music Posture and performance
Appreciation	Understanding the elements and concepts of music Listening to the music and understanding the characteristics of the music	1-3 grade level musical elements and concepts Various types of music Music history and cultural background
Music in Life	Have an attitude to enjoy music Recognizing the value of Korean traditional music	Music and events Music and industry Korean traditional music in the world

Table 2. The Composition of the 2009 and the 2015 Revised Music Curriculum for Middle School

Table 3. The Composition of the 2009 and the 2015 Revised Music Curriculum for High School

2009 Revised Music Curriculum		2015 Revised Music Curriculum	
Content Area	Content Element	Content Area	Content Element
Musical expression and communication	•Elements and principles of music composition	Expression	Construction of music Posture and performance
	•Expression pleasure • The influence of music		High school level music elements and concepts
		Appreciation	Various types of music
	Music as a social phenomenon		The historical and cultural background of music
Music as a cultural product	 Diversity of music 		Music and events
product	Global community music	Music in Life	Music and profession
			Succession and development of Korean traditional music

2.2 Overview of OECD Music Content

Table 4 shows the contents of music education suggested by the OECD during recent educational research [11], [12].

	The Composition of Music Education
AMU1	The contribution of locally and globally recognized musicians and composers and their works (contemporary and classical) to cultural heritage
AMU2	The history of and knowledge about music, including major musical styles and compositions used in different music works
AMU3	Activities involving the production and creation of music and the performance of musical compositions (instrumental and vocal) for a variety of purposes
AMU4	Activities involving feelings and ideas expressed through music.

AMU5 How to think and appreciate music like musicians, how music contributes to and relates to real life/ real world (epistemic knowledge)

AMU6 Moral, ethical and legal issues in music (e.g. copyright)

3. Research Methods

3.1. Documentary Research

This study analyzes the contents of Korea's current music curriculum and suggests ways to improve it. Two research methods were used to achieve this goal. First, a documentary research was conducted, which is a comparative analysis of the current curriculum based on the contents of the revised music curriculum of 2009, the previous curriculum in Korea. In addition, the current Korean curriculum is compared and analyzed based on the recently studied OECD music content (2018).

The main contents of this research method are shown in Table 5 below. The criterion comparing Korea's 2009 and 2015 revision curriculum was content composition and achievement standards. In these two aspects, researcher analyzed from three perspectives: deleted content and achievement standards, newly added content and achievement standards, and content and achievement standards that have been relocated between domains since the revision to 2015. Next, the criteria for comparison with the OECD music content were the extent to which the six contents suggested by the OECD were included in the current Korean curriculum. In other words, by reviewing the goals, contents, methods, evaluations, etc. of the entire document of the 2015 revised music curriculum, it was analyzed how much OECD music content is included.

Curriculum	Comparison Criteria and Contents	
2009 vs. 2015	Content Composition	 Deleted or Newly added Content and Achievement Standards
	Achievement Standards	 Content and Achievement Standards that have been Relocated between Domains
OECD vs. 2015	The Extent to which the OECD's Six Music Contents were Included in Korea's 2015 Revised Curriculum Document	

Table 5. Overview of Documentary Research

3.2. Delphi Survey and FGI

Next, a Delphi investigation and FGI(focus group interview) were conducted. First, the Delphi survey was conducted to collect expert opinions on the future direction of improvement in the Korean music curriculum, targeting a total of 20 people composed of music education experts and music teachers. This Delphi investigation was conducted twice. In the first Delphi survey, based on the results of documentary research, answers to the future directions of improvement in Korea's current curriculum were collected in a subjective opinion. In the 2nd Delphi survey, the 5th scale was used to respond to the most important improvement among the major improvements presented in the 1st Delphi results.

In addition to the Delphi survey, FGI was also conducted to collect in-depth expert opinions on the direction of improvement of the music curriculum. The FGI was conducted two times with four experts who responded diligently in the Delphi survey. The summary of the Delphi investigation and FGI is shown in Table 6 below.

Research Method	Research Subject	Main Contents
Delphi Survey	A Total of 20 People - Music Education Professors 8	Delphi 1: Aspects to be Improved in Korea's Current Music Curriculum
. ,	- Music Teachers 12 (Elementary 4, Middle 4, High 4)	Delphi 2nd: Most Necessary of Major Improvements
FGI	 Music Education Professor 1 Elementary School Teacher 1 Middle School Teacher 1 High School Teacher 1 	In-depth opinion on the aspect of improving music education

Table 6. Overview of Delphi Survey and FGI

3.3. Research Procedure

The procedure for the above-mentioned research method is presented as the following Figure 2.

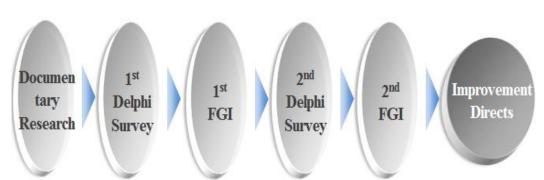


Figure 1. Research Procedure Diagram

4. Results

The results of this study are presented in three parts. First, the results of comparative analysis between the 2015 revised curriculum and the 2009 revised curriculum in Korea were presented. Subsequently, the extent to which the OECD music content was included in the 2015 revised curriculum in Korea was presented. Lastly, the results of collecting opinions on the aspects of improvement that Korea's music curriculum should go forward were presented.

4.1. Analysis Result through Comparison with 2009 Revised Music Curriculum

First, the contents of the music curriculum revised in 2009 and 2015 were compared and analyzed in terms of domain composition. As a result, it was confirmed that both curriculums consisted of the domains of 'expression', 'music appreciation', and 'music in life' and maintained the same context. However, comparative analysis at the detailed item-level below the area confirmed that there was a change. Compared to the 2009 music curriculum, it was confirmed that there were contents deleted from the current 2015 revision music curriculum, newly added contents, and contents moved between domains. Table 7 shows the results of elementary, middle, and high schools.

Table 7. Comparative Analysis of 2009 and 2015 Revised Music Curriculum

		Analysis of the Contents of the 2015 Revised Music Curriculum
	Contents Deleted	- Nothing has been deleted.
	Contents Added	 In the domain of music life, 'event', 'play', and 'cultural heritage' are more specifically presented.
Elemen-tary	Added	- 'Health' has been newly added to the daily life of music.
School	Contents Moved	 In the 2009 revised curriculum, the contents of 'expressive music such as situations and stories', which were in the 3rd to 6th grade domains, were moved to the 3rd to 4th grade 'music appreciation' domain in the 2015 revised curriculum. Although within the same domain, 'the composition of music (music elements, etc.)', 'the performance method', and 'the various cultures' presented at the achievement standard level are presented at the content system level.
	Contents Deleted	- Nothing has been deleted.
	Contents Added	 Partially added: In the music appreciation domain, 'kind of music', 'play form', 'background', 'historical culture', etc. are more specific.
Middle School	Auueu	- Newly added: 'Music and Industry' is newly added to the domain of music life.
	Contents Moved	 Although it is within the same domain, the composition of music, 'attitude and performance method', 'events', and 'Korean traditional music in the world' that were presented at the achievement standard level are presented at the content element level.
	Contents Deleted	 The contents of 'Music Influence', 'Music as a Social Phenomenon', and 'Music in Global Village' have been deleted.
High School	Contents Added	 Contents such as 'posture and performance method', 'music and events', 'music and profession', and 'succession and development of traditional music' have been newly added.
	Contents Moved	 "Elements and Principles of Music Composition" and "Pleasure of Expression" have been moved to the "Expression" and "Music Appreciation" domains of the 2015 revised curriculum.
	woved	- 'Music Diversity' was moved to the 'Music Appreciation' domain of the 2015 revised curriculum.

Subsequently, the achievement standards of the 2009 and 2015 revision music curriculum were compared and analyzed. The achievement standard is a statement that embodies the above-mentioned music domain and sub-details as a standard for students to achieve through learning. Compared to the 2009 curriculum, the achievement standards added, modified, and deleted in the 2015 revised music curriculum are summarized in Table 8, Table 9, and Table 10, respectively. It was analyzed that new achievement standards were added in all elementary, middle, and high school levels, but those that were modified or deleted compared to the previous curriculum were found only in high school.

	Domain	Element	Achievement Standards Added
Elemen-tary School	Music in LIFE	Music and Health	Students Present the impact of music on mind and body health.
Middle School	Music Appreci- ation	Various types of Music	Listen to various types of music and explain the characteristics of the music.
		History and Cultural Background of Music	Listen to music and explain the characteristics of music in a historical and cultural context.
	Music in Life	Music and industry	Research and present the industry related to music.
	Components of music		Express the body according to the type of music.
High School	Posture and performance		Sing with correct posture, breathing, and correct pronunciation, or learn how to play along with the instrument to express it.
	Music and events		Participate in and comment on a variety of music-related events.
	Music and profession		Research and present about music-related jobs.
	Succession and development of Korean traditional music		Present ways to succeed and develop Korean traditional music.

Table 8 Achievement standards added to the 2015 revised Curriculum

Table 9. Achievement Standards Modified to the 2015 Revised Curriculum

	Category	Achievement Standards Presented in the 'Domain' of the 2009 Curriculum	Achievement Standards Presented by Moving to the 'Achievement Standards' of the 2015 Curriculum
High School	Music Components, Principles	 Through various musical activities, students understand the elements and principles that make up music, such as rhythm, melody, harmony, timbre, texture, and form. Listen to the performances of others and explain the characteristics according to the elements and principles of music composition. 	 - Understands the characteristics of a piece of music and sings or plays on instruments. - Make music works by understanding the composition of music. - Express and distinguish music elements and concepts corresponding to high school level.
	Various types of Music	 Explore the diversity of music and the role of musicians and the way they experience music. Students learn the musical characteristics of different cultures through differences in notation systems and creative methods. 	 Listen to various types of music and compare and explain the characteristics of the music. Listen to music from various eras and compare and explain the characteristics of music in relation to historical and cultural backgrounds.
	Expression	 Introduce your favorite music and express its characteristics. By editing or transforming the music played, it is used as an expression tool along with videos and dances. Create or play on your own and explain your intentions. 	- Make music works that fit various arts.

Table 10. Achievement Standards Deleted to the 2015 Revised Curriculum

		Achievement Standards Deleted
	The Influence of Music	Find and present musical examples that affect human emotions and emotions, such as reconciliation and homogeneity, comfort and relaxation, self-esteem and courage.
		Experience the joy and communication of collaboration through various music activities with different people.
		Discuss the interrelationship of music-related value judgments with social, economic, political, environmental, and religious experiences.
High School	Music as a Social Phenomenon	Knowing that there are various cultural promises, such as gestures, costumes, performance styles, and distribution structures, as well as sound, are present in the musical phenomenon, and find and present examples.
		Since the introduction of Western culture into Korean society, students investigate and present examples of musical conflicts and communication that have occurred in our society.
	Diversity of Music	Presents examples of the impact of the environment of life on music activities.
	Global	Discuss the meaning of culture and cultural products.
	Community Music	Appreciate new forms of art that attempt to dissolve and fuse genres.
		Discuss ethical issues related to copyright.

The results of analyzing the contents of the 2009 and 2015 revision music curriculum are as follows. The same music domain was maintained, but there was a change in the composition of sub-content. In other words, it was found that it was intended to further connect non-musical content such as health, industry, occupation, etc., and to emphasize Korean traditional music more. On the other hand, it was found that there were relatively few high-thinking contents such as social phenomena that could be connected to music or the influence of music, or a wide range of music contents.

4.2. Results of Analysis through Comparison with OECD Music Content

The researcher compared and analyzed the music content in the recently proposed OECD study and the content of the 2015 revised music curriculum in Korea. The OECD presented the following six types of music content: 1) local and globally recognized musicians, composers, and their contributions and contributions to cultural heritage; 2) the history and knowledge of music, including major music styles and various composition styles; 3) production and creation activities of musical works and performances of works composed for various purposes; 4) activities related to feelings and ideas expressed through music; 5) how to think and appreciate like a musician, how music contributes to and relates to life; 6) moral, ethical and legal issues in music(eg copyright).

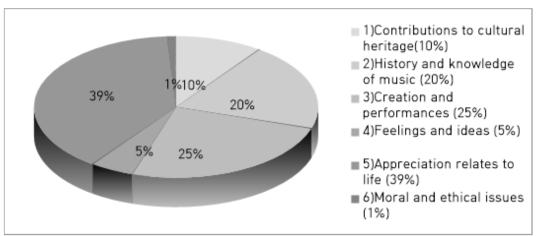
The extent and level of these six music contents of the OECD were analyzed in the 2015 Korean revised music curriculum, and the results are shown in the following Fig. 2. Summarizing the results, the current curriculum in Korea had the most content related to listening to and playing music. However, the ratios presented in the current Korean curriculum were low for learning related to moral and ethical problems in music, thinking learning such as ideas, and learning related to the contribution of various cultural heritage.

Professor

Teacher

4 5

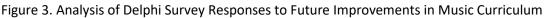
Figure 2. Analysis of Music Contents of the 2015 Revised Curriculum in Korea by Comparison with OECD Music Contents



4.3. Delphi Survey Results on Music Curriculum Improvements

Through the Delphi survey conducted by professors in music education and music teachers in the field, the contents of the music curriculum to be improved were examined. The major improvement of the curriculum was derived through the results of the first Delphi survey and the comparative analysis of Korean and OECD music curriculum documents, and the second Delphi results based on these improvements are shown in Fig. 3. The results are as follow. First, rather than overemphasizing Korean traditional music, it is necessary to present a wider variety of musical cultural heritages and their contributions. Second, we need to pay more attention to the ethical issues surrounding music. Third, it is necessary to present music content related to high-level thinking skills. And fourth, it is necessary to be able to enjoy music related to daily life.





5. Discussion and Conclusion

5.1. Discussion about the Results of Analyzing Content

Contributing to various music cultures

Musical high thinking skills

Listening to music related to life

In order for education to be carried out well, there must be well-organized educational goals, contents, and methods. This is called a curriculum, and the way this curriculum is created varies by country. In Korea, the curriculum is periodically updated at the national level. Currently, the 2015 revised music curriculum is

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applied, and it is very necessary to examine how this curriculum differs from the previous one. This is because by checking what changes have been made, future improvements can be better understood.

In this regard, the purpose of this study is to analyze the contents of the current 2015 revised music curriculum in Korea and present the contents of music that needs to be improved in the future. For this study, the researchers first compared it with the previous 2009 revised curriculum. The comparison with the previous curriculum confirmed what was different in the content composition and achievement standards. That is, it was analyzed based on criteria such as newly added content, deleted content, and content moved between domains [13].

Following the comparative analysis between the curriculums in Korea, the OECD music content and the current curriculum in Korea were also comparatively analyzed. The OECD has conducted a lot of research on the direction of improvement in education, and in 2018-19, it summarized and reported six things that should be taught in music subjects from a global perspective. Therefore, the researcher analyzed how much the latest global trend, OECD music content, is included in the Korean music curriculum. Based on the comparative analysis between the curriculums, what was lacking and what should be improved in the current curriculum in Korea was analyzed through Delphi survey and FGI. First, the results of content analysis on the current curriculum in Korea are as follows.

First, the current curriculum of music in Korea has not changed in that the main areas as in the previous 2009 period are expression, appreciation, and music life. That is, in the Korean curriculum, music contents were classified into three types. Music curriculum in Korea has emphasized musical expression activities such as playing musical instruments, singing, and creating music, and listening to music. It also shows that the musical attitude of enjoying and participating in a variety of music outside of school at home or in the community is very important. However, there were some changes in the composition of the specific music content. Some were deleted because they were relatively less important, and others were added according to changes in the times. In addition, even in the same contents, there were some positions between the three categories. This change in location is a result of showing that even the same content may have different educational aspects depending on the teaching method. For example, some music content is more suitable for learning with expressive activities than with appreciation.

Second, the social phenomena, the influence of music, and the content of socio-cultural and moral ethics surrounding music, such as copyright, have been relatively reduced and deleted. In other words, the 2009 curriculum had copyrighted content, but it was deleted from the current curriculum in 2015. However, more and more ethical issues around music are emerging, and the OECD also presents ethical issues as one of the main contents of music. Therefore, this part needs to be improved in the future [14].

Third, various music in the world has been further reduced and Korean traditional music contents have been strengthened. As a Korean, it is very important to emphasize and learn Korean music. However, considering the globalization era and balanced learning, excessive emphasis can prevent various other types of music learning, so you should reconsider. In other words, it is necessary to pursue balanced music learning.

Fourth, areas such as the music industry and music-related health have been added. Health, industry, etc. are not music-internal, but elements outside of music. It contains the latest trend that music learning should not only stay within the music, but also expand outside the music. Therefore, I think it is very important to fuse music with other fields and look at the role of music in various worlds.

Fifth, the content of more creative areas, such as the feel and idea of music, was relatively low. It is still doing activities to create new works of music, but the process required to create new works is weak. This was confirmed through analysis with OECD music content. In other words, it is not a creative activity that is shown as a result, but a lack of content about the thinking process of how to make it in the process.

5.2. Discussion and Conclusions about the Future Improvement

Based on the results and discussion above, I would like to conclude about the direction in which the music curriculum in Korea should be improved.

First, the future music curriculum should include more diverse music cultures from around the world. When including such music, it is necessary to include not only contents such as music pieces or information, but also contents of influences and contributions of the music. In other words, more meaningful learning occurs when music is connected both internally and externally. Therefore, a higher level of thinking and learning about how music has been influenced historically and historically and what contribution it will make in the future is required [15].

Second, the moral ethics of music like copyright should be added to the music curriculum. In today's world, where music information is overflowing with diversity, students must learn about the various moral issues surrounding music. Due to the information age such as computers and the Internet, ethical problems related to music are becoming more serious. Education should be conducted from school to ensure that music can be used without problems in life.

Third, we need to present creative and highly thoughtful music content such as ideas and reflection. Be able to compose with the content of music you think beyond expressive activities such as singing and playing musical instruments. In other words, it is not only the musical expression that emerges as a result. As a process, it is necessary to worry about what kind of thinking process is needed in the music subject.

Fourth, it is necessary to organize a curriculum so that you can enjoy music in everyday life. In other words, you should be able to appreciate a variety of music that is closely related to real-life in different situations. It should be composed of learner-centered music [16], not professional composition.

This study is meaningful in that it provides implications to understand how the school music education curriculum in Korea has changed and what the current situation is. In addition, it was meaningful in that it can predict the future of Korean music education in the future compared to major music education contents recognized in the world. In conclusion, music learning should not only stay within a specific music area, but should be expanded in various ways, such as the connection between various areas in music, the connection between music and society, and the connection between music and real-life. In the future, it is necessary to put more effort into the composition of the school curriculum to develop Korean music education.

REFERENCES

Ju, Dae. Chang. Trends and Challenges in Music Education Research. Seoul: Hakjisa, 2018.

Lee, Keun Ho, Kwak, Yeung Soon, Lee, Seung Mi and Choi, Jeung Sun. National Curriculum Initiative for Cultivation of Core Competencies for Future Society, Seoul: Korea Institute for Curriculum and Evaluation (2012).

Park, Ji Hyun and Yang, So Yeung. "The Development of a Textbook Model for Enhancing the Music Competency in the Music Curriculum." Korean Journal of Research in Music Education 47.1 (2018): 101-121.

Organization for Economic Co-operation and Development. CCM Draft Competencies Framework for Main Study. Unpublished manuscript, 2018.

Yang, Jong Mo. "International Comparisons of Core Competence and Musical Competence: Korea, Japan, Singapore, the United Kingdom, and USA." Korean Journal of Research in Music Education 46.4 (2017): 77-103.

Song, Ju Hyun. "A Study on the Music Subject Competency in the School Music Education." Korean Journal of Research in Music Education 44.4 (2015): 117-146.

Lee, Mi Kyung, Seou, Ji Yyung, Lee, Keun Ho, Cho, S. M., Kim, Ki Cheul, Yoo, Chang Whan, Kim, Jong Yoon, and Lee, Ju Yeun. OECD Education 2030 Curriculum Content Mapping Participation Study. Jincheun: Korea Institute for Curriculum and Evaluation, 2018.

Park, Ji Hyun. "Comparative analysis of competencies presented in OECD education 2030 and 2015 revised music curriculum: Focusing on the degree of reflection of competency." Korean Journal of Research in Music Education 28.4 (2019): 163-183.

Ministry of Education. 2009 Revised Music Curriculum. Seoul: Ministry of Education, 2011.

Ministry of Education. 2015 Revised Music Curriculum. Sejong: Ministry of Education, 2015.

Organization for Economic Co-operation and Development. CCM Main Study: Revised Proposal for Curriculum Content Mapping. Unpublished manuscript, 2018.

Organization for Economic Co-operation and Development. CCM Draft Competencies Framework for Main Study. Unpublished manuscript, 2018.

Park, Jihyun. "Analysis of 2015 Revised Music Curriculum in Korea." Journal of Education and Social Science 1. (2020): 23-28.

Jeong, Jaeeun, and Ryu. Mihae. "Investigation of Adapting Havruta Learning for Pre-teacher in Music Education." International Journal of Child Warfare Promotion and Management 2.2 (2018): 89-94.

Jang, Han-A, Choi, Jeong-Ho, and Park, Jong-Lyoul. "The Effect of Middle School Students` Participation in Saturday Sports on Physical Self-Efficacy and Self-Directed Learning Ability." International Journal of Child Warfare Promotion and Management 2.2 (2018): 13-18.

Lee, Jeong-Hwa, and Kim. Ji-Young. "Analysis of the Concept Map about Constructivist Teaching and Learning in Early Childhood Education." International Journal of Child Warfare Promotion and Management 1.1 (2017): 1-8.