

## Research Trends relating to Nuri Curriculum through Keyword Network Analysis\*

Chung, Chung-Hee<sup>\*\*</sup> · Lee, Hyo-Rim<sup>\*\*\*</sup>

### Abstract

The purpose of this study is to analyze research trends relating to Nuri Curriculum through keyword network analysis. To do this, current study investigated the tendency of article published in KCI journals by year from 2012 to 2016. Also, it conducted network analysis on the keyword appearing in studies. Based on the result, first, 256 studies were conducted relating to Nuri Curriculum from 2012 to 2016, and most of them were published in the Journal of Korea Open Association for Early Childhood Education. Secondly, 'Nuri Curriculum' was the most common keyword followed by 'Guide Books for teachers', '5-year-old', 'early childhood teacher,' and 'connectivity.' There was a strong connection between two main words, 'Guide Books for teachers' and '5-year-old.' This study aims to comprehend core topics of research related to Nuri Curriculum using keyword network analysis and concrete tendency of each research topic.

*Keywords : Nuri Curriculum, research trends, keyword network analysis*

---

\* The Korean version of this article was published in the Journal of Korea Open Association for Early Childhood Education, Vol. 22, No. 4, pp. 309-406, 2017.

\*\* Professor, Kyungpook National University

\*\*\* Assistant Professor, Taegu Science University / Corresponding author, rimchild@tsu.ac.kr

## I . Introduction

Investment in infant and toddlers has various socio-economic effects through parent support, women's economic activity support, child support, and involvement for low-income infant and child, etc. The OECD emphasizes the importance of quality in early childhood education as a means of solving social problems, and emphasizes national accountability for early childhood education and child care in each country. It also recommends strengthening national support for early childhood education. The UNESCO International Standard Classification of Education (ISCED) has also strengthened the international standards for early childhood education since the revision in 2011, and embodied the early childhood education phase as 0 to 3-year-old child development and 3 to 5-year-old child education. In the publication 'Starting Strong III (2012)' of the OECD, Belfali emphasizes the quality of the institution and the quality of the teacher to improve the quality of early childhood education (Belfali, 2015). As a result, each country is making efforts to establish an early childhood education system including unification of elementary schools and preschools, establishing an evaluation system for early childhood education institutions, training teachers and strengthening professionalism. In particular, the development and dissemination of the curriculum is at the national level.

In Korea, education and welfare investment for infants and young children has been increasing in line with the trend of strengthening early childhood education in OECD, and various national policies for early childhood education and child care are being suggested. In 2011, the Korean government established a common framework for universal education for early childhood education and attempted to integrate the curriculum first to realize this. By integrating the National Curriculum in kindergarten and child care centers, Nuri Curriculum had been developed for 5-year-old first and extended to all 3 to 5-year-old children in Korea from 2013(Ministry of Education, Science and Technology, Ministry of Health and Welfare, 2012).

Since Nuri Curriculum was introduced in 2012 and extended to 3 to 5-year-old children in 2013, various studies related to the Nuri Curriculum have been conducted in the field of early childhood education. Synthesizing the studies so far allows us to reflect on the current researches about Nuri Curriculum and to search for new directions for application of Nuri Curriculum in the field. Thus the purpose of this study is to analyze the trends of the studies about Nuri Curriculum in the past five years after its introduction.

On the other hand, many studies about research trends have been conducted in the field of early childhood education, and most of them report trends by frequency and percentage according to specific categories. However, in recent academic disciplines, a keyword network analysis has been

newly introduced to investigate the relationship between research topics in research trend analysis, and studies utilizing it have been attempted. Keyword network analysis is the methods that extracts meaningful concepts from the texts in the form of words to examine the intellectual structure and research trends in various disciplines and analyzes the semantic content of the text by constructing a network based on the frequency of coexistence of the words(Lee, 2014). Keyword network analysis, which combines content analysis and social network analysis methods, uses the keywords shown in the study as a classification unit for analyzing and summarizing research papers(Kwon, 2014). The combination of the key words can be regarded as a research topic, and high frequency of co-appearance of the key words can be regarded as the main topic of research in the field (Jeong, Jeong, and Son, 2015). In the field of early childhood education, Jeong et al. (2015) analyzed the research trends of early childhood education related to early childhood teachers through the keyword network analysis.

The study on the research trends related to Nuri Curriculum has been conducted by Kim (2015), but as mentioned above, reports the tendency of the quantity through the frequency and percent of each year, research subject, research method, and research content. Although the research provides basic data on the present status and future direction of the study about Nuri Curriculum, there is a limitation that the analysis is performed according to the standard selected by the researcher. The analysis of the research trends through the keyword network analysis through the analysis of the relationship between the research topics selected by each researcher enables the researchers to examine the macro trends that focus on the research topics. In this study, the researchers try to understand the trend of researches related to the Nuri Curriculum for the past 5 years from 2012 to 2016 through the keyword network analysis.

The questions addressed by this paper are as follows:

1. What is the status of the data of the journal articles related to the Nuri Curriculum?
2. What is the keyword network of the journal articles related to the Nuri Curriculum?

## **II. Methods**

### **1. Subjects**

This study focused on the studies related to the Nuri Curriculum among the subjects in the field of early childhood education. First, we collected data including “Nuri Curriculum” in the titles or

keywords among the researches published from 2012 to 2016 through a detailed search in the database (RISS) provided by the Korea Educational and Research Information Service. In the initial search result, 362 papers were extracted, and 270 papers were selected as Korean Citation Index (KCI) papers. Next, a total of 256 papers were selected as the final research subjects as the duplicated data was removed.

## **2. Extraction and Selection of Key Words**

A total of 973 and 546 kinds of keywords were extracted from the initial frequencies of the keywords presented in the final 256 selected papers. The average number of keywords is 3.8. For the extracted keywords, the refinement work was carried out through the process of correcting, controlling, and eliminating the words suggested by Lee (2014).

## **3. Data Analysis**

The final 296 keywords extracted from the research related to Nuri Curriculum were analyzed through the following procedure. First, the frequency of each keyword extracted was calculated using the userdata analysis function in the Textom analysis program(<http://www.textom.co.kr>). Next, the frequency of co-occurrence of keywords was calculated using the Textom analysis program. And 'keyword  $\times$  keyword 1 mode matrix(84 $\times$ 84)' was created for keywords with an appearance frequency of 2 or more, except for the keyword "Nuri Curriculum." For the keyword network analysis, the nodeXL and Ucinet 6 programs were used. First, for macroscopic analysis, the density of the network was calculated using nodeXL. In order to examine the degree of which the individual nodes are located at the whole network (Son, 2006), degree centrality, closeness centrality, betweenness centrality were analyzed. Next, we analyzed the ego network using the Ucinet 6 program and visualized the ego network through the NetDraw program.

# **III. Results**

## **1. Status of data on journal articles related to Nuri Curriculum**

In this study, we analyzed the total 256 number of research articles related to Nuri Curriculum published in Korea Research Foundation's list of journals from 2012 to 2016. The data presented in

the research papers are as follows.

We analyzed the current status of the research on Nuri Curriculum, published in Korea Research Foundation List of Publications from 2012 to 2016, Research papers related to Nuri Curriculum published in Korean Citation Index (KCI) were 22 in 2012, 67 in 2013, 58 in 2014, 64 in 2015, and 45 in 2016.

Next, the trends of the articles related to Nuri Curriculum are shown in Table 1 below.

Table 1. Status of data on journal articles related to Nuri Curriculum

ranking	Journal list	frequency	%	cumulative %
1	The Journal of Korea Open Association for Early Childhood Education	24	9.38	9.38
2	Early Childhood Education Research & Review	23	8.98	18.36
3	Korean Journal of Early Childhood Education	21	8.20	26.56
4	Journal of Children's Literature and Education	18	7.03	33.59
5	Journal of Korean Child Care and Education	16	6.25	39.84
6	The Journal of Learner-Centered Curriculum and Instruction	13	5.08	44.92
7	Journal of Future Early Childhood Education	11	4.30	49.22
8	Journal of Early Childhood Education & Educare Welfare	10	3.91	53.13
9	The Korea Association of Child Care and Education	10	3.91	57.03
10	The Journal of Eco Early Childhood Education & Care	8	3.13	60.16
11	Korean Journal of Child Education and Care	8	3.13	63.28
12	The Korean Journal Child Education	6	2.34	65.63
13	Korean Journal of Children's Media	5	1.95	67.58
14	EARLY CHILDHOOD EDUCATION & CARE	4	1.56	69.14
15	Korean Journal of Child Care and Education Policy	4	1.56	70.70
16	52 kinds of journals with 3 or less related papers	75	29.30	100.00
		256		100.00

As a result of the analysis, research articles related to Nuri Curriculum were published in 67 kinds of academic journals. The number of papers related to Nuri Curriculum was found in order 24 in The Journal of Korea Open Association for Early Childhood Education (9.38%), 33 in Early Childhood Education Research & Review (8.98%), 21 in Korean Journal of Early Childhood Education.

## 2. Keyword network analysis of research papers on Nuri Curriculum

### 1) Frequency of the keywords of research papers on Nuri Curriculum

A total of 973 and 546 kinds of keywords were extracted from the initial frequencies of the keywords presented in the final 256 selected papers. The average number of keyword is 3.8. The final 308 keywords were selected through the refining process, and the top 30 keywords calculated from the frequency analysis are shown in Table 2 below.

Table 2. The top 30 keyword from the frequency analysis

ranking	key word	N	%	cumulative %	ranking	key word	N	%	cumulative %
1	Nuri Curriculum	234	22.61%	22.61%	16	Educational content	11	1.06%	53.53%
2	Teacher's guidebook	73	7.05%	29.66%	17	Creativity	10	0.97%	54.49%
3	5-year-old	35	3.38%	33.04%	18	Policy	10	0.97%	55.46%
4	Early childhood teacher	28	2.71%	35.75%	19	ESD	10	0.97%	56.43%
5	Connectivity	25	2.42%	38.16%	20	Early childhood science education	9	0.87%	57.29%
6	Operation	24	2.32%	40.48%	21	Education and care finance	8	0.77%	58.07%
7	Perception	19	1.84%	42.32%	22	Picturebook	8	0.77%	58.84%
8	Elementary curriculum	18	1.74%	44.06%	23	Disability	7	0.68%	59.52%
9	Early childhood mathematics education	14	1.35%	45.41%	24	Kindergarten	7	0.68%	60.19%
10	Early childhood education · child-care curriculum	13	1.26%	46.67%	25	Free early childhood education & care	7	0.68%	60.87%
11	Early childhood music education	13	1.26%	47.92%	26	Evaluation	6	0.58%	61.45%
12	Multi-cultural	13	1.26%	49.18%	27	Early childhood literature education	6	0.58%	62.03%
13	Early childhood education · child-care	12	1.16%	50.34%	28	Content analysis	6	0.58%	62.61%
14	Child-care center	11	1.06%	51.40%	29	National curriculum standards	6	0.58%	63.19%
15	Education program	11	1.06%	52.46%	30	Personality	6	0.58%	63.77%

As a result of analysis, ‘Nuri Curriculum’ appeared 234 times, accounted for 22.61% of the total, and ‘Teacher's guidebooks’ appeared 73 times, accounted for 7.05% showing the highest frequency. In addition, ‘5-year-old’ appeared 35 times (3.38%), ‘Early childhood teachers’ appeared 28 times (2.71%), ‘Connectivity’ appeared 25 times (2.28%), ‘Operation’ appeared 24 times (2.32%) showing a relatively high frequency.

## 2) Structural properties of the keyword network of journal articles related to Nuri Curriculum

In order to examine the structural properties of the keyword network, the number of nodes, the number of edges, the density, the average path distance, and the number of components for the ‘keyword  $\times$  keyword one-mode matrix (84  $\times$  84)’ were calculated and visualized using nodeXL. The result of the keyword network analysis of this study are shown in the following figures 1 and table 3.

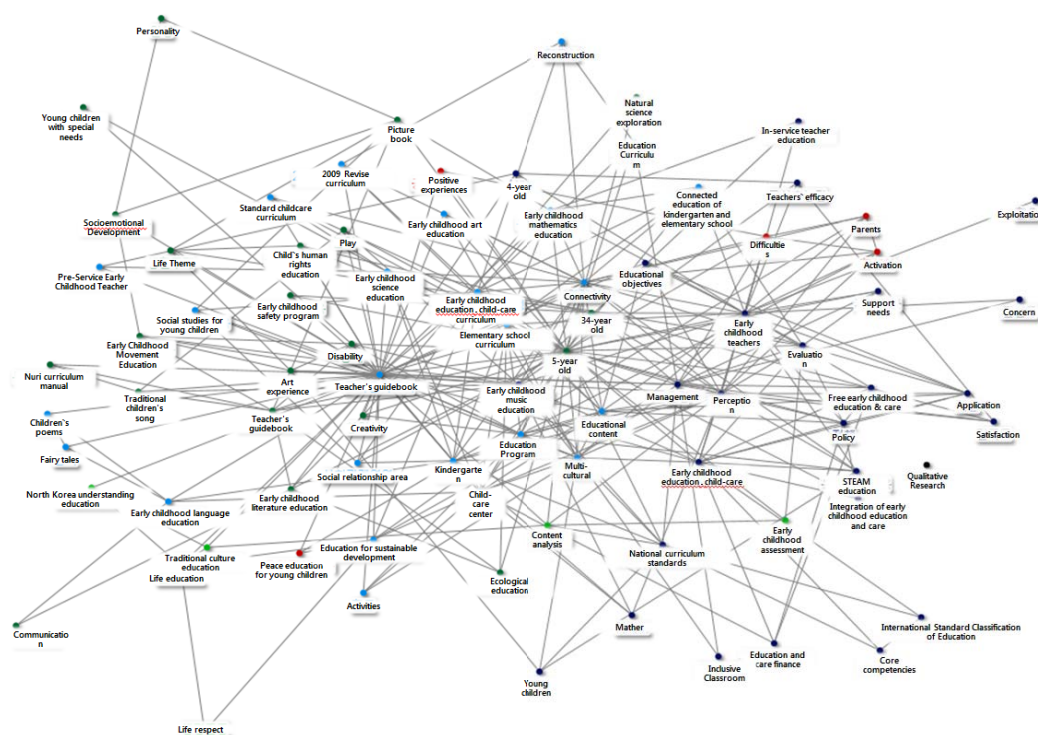


Figure 1. Keyword network of the journal articles related to Nuri Curriculum

Table 3. Structural properties of the keyword network of journal articles related to Nuri Curriculum

Structural properties	values
the number of nodes	84
the number of edge	325
density	0.093
the average path distance	2.234
the number of components	2

As a result of this study, the 84 keywords had a total of 325 connection lines, the density of the network was 0.093, the average path distance was 2.234, and the number of components was 2.

### 3) Individual node centrality analysis of the keyword network

In order to examine the degree of which the individual nodes are located at the whole network, degree centrality, closeness centrality, betweenness centrality were analyzed. The results of the analysis are shown in Table 4 below.

The results of this study are as follows: ‘Teacher’s guidebook (47)’ had the highest degree centrality followed by ‘5-year-olds (41)’, ‘Early childhood teacher (27)’, ‘Recognition (23)’ and ‘Connectivity (23).’ Next, keywords with high closeness centrality were ranked as ‘Teacher’s guidebook (0.008)’, ‘5-year-old (0.008)’, ‘Connectivity (0.007)’, ‘Early childhood teacher (0.007)’, and ‘Multicultural (0.007).’ The keywords with high betweenness centrality were ‘Teacher’s guidebook (1206.428)’, ‘5-year-olds (758.243)’, ‘Early childhood teacher (289.530)’, ‘Early childhood education & care (183.278)’, ‘Connectivity(158.354).’

In summary, the ‘Teacher’s guidebook’ and ‘5-year-old’ were the keywords that play an most important role in the keyword network because all three kinds of centrality indicators were high. In addition, ‘Early childhood teacher’ was the main keyword with high degree centrality and betweenness centrality. ‘Connectivity’ is a keyword that has higher closeness centrality than betweenness centrality. That is, the main keyword of the journal articles related to Nuri Curriculum could be seen as ‘Teacher’s guidebook’ and ‘5-year-old.’

### 4) Ego network analysis of main keyword

In this study, we selected main keywords based on the occurrence of frequencies and centrality of words, and conducted ego network analysis in order to examine how major issues and topics of research related to Nuri Curriculum are being studied. The ego network is a method of directly



Table 4. individual node centrality analysis of the keyword network

ranking	keyword	degree centrality	keyword	closeness centrality	keyword	betweenness centrality
1	Teacher's guidebook	47	Teacher's guidebook	0.008	Teacher's guidebook	1206.428
2	5-year-olds	41	5-year-olds	0.008	5-year-olds	758.243
3	Early childhood teacher	27	Connectivity	0.007	Early childhood teacher	289.530
4	Recognition	23	Early childhood teacher	0.007	Early childhood education & care	183.278
5	Connectivity	23	Multicultural	0.007	Connectivity	158.354
6	Multicultural	19	Early Childhood Music Education	0.007	Operation	151.664
7	Early childhood education · child-care curriculum	17	Recognition	0.007	Recognition	143.502
8	Elementary curriculum	17	Operation	0.007	Multicultural	139.679
9	Early Childhood Music Education	16	Elementary curriculum	0.007	Early Childhood Music Education	114.359
10	Operation	16	Educational content	0.006	Daycare center	84.911
11	Early childhood education & care	15	Early childhood education & care	0.006	Early childhood education · child-care curriculum	83.515
12	Daycare center	15	Early childhood education · child-care curriculum	0.006	ESD	65.646
13	Educational content	15	Daycare center	0.006	National curriculum	60.664
14	Education Program	14	Education Program	0.006	Picture books	58.582
15	Evaluation	12	3 to 4-year-olds	0.006	Early childhood literature education	53.435

grasping connected keywords based on a representative keyword. The size of a node on a network indicates the frequency of appearance, the distance is a distance between two words, and the thickness of an edge indicates the frequency of simultaneous appearance. To do this, Ucinet had been used to create a network matrix for each keyword, to visualize it. And nodeXL had been used to examine the key edge weight of each keyword. The results of the analysis are as follows.

(1) Ego network analysis of the keyword, 'Teacher's guidebook'

'Teacher's guidebook' was the most frequently appearing keyword in the research related to Nuri Curriculum and occupied the most important position on the whole network. This can be regarded as that the 'Teacher's guidebook' is the most important aspect of the research related to Nuri Curriculum. In this study, we tried to grasp the research trends related to the Nuri Curriculum

Teacher's guidebook through the analysis of ego network. The results of the analysis are shown in Fig. 2 and Table 5 below.

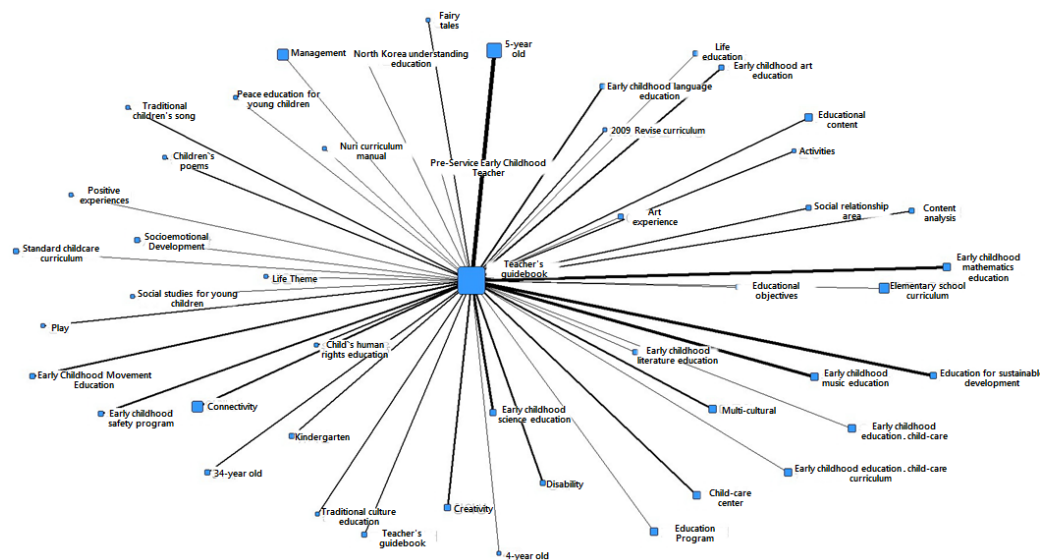


Figure 2. Ego network of 'Teacher's guidebook'

Table 5. Major edge in ego network of 'Teacher's guidebook'

ranking	node1	node2	edge weight
1	Teacher's guidebook	5-year-old	9
2	Teacher's guidebook	Education for Sustainable Development	7
3	Teacher's guidebook	Early Childhood Music Education	6
4	Teacher's guidebook	Early childhood mathematics education	6
5	Teacher's guidebook	Early childhood science education	5
6	Teacher's guidebook	Early childhood safety education	4
7	Teacher's guidebook	Disorder	4
8	Teacher's guidebook	Connectivity	4

As a result, 'Teacher's guidebook' was directly related to 47 keywords related to Nuri Curriculum (see Table 5). Among them, the connection strength with '5 years old' was the highest at 9. Next, 'Teacher's guidebook' showed high connection strength with 'Education for Sustainable Development (7)', 'Early Childhood Music Education (6)', 'Early childhood mathematics education

(6)', 'Early childhood science education (5)', 'Early childhood safety education (4)', 'Disorder (4)', and 'Connectivity (4).' In other words, among the papers related to the Nuri Curriculum, the studies about the 'Teacher's guidebook' was mainly focused on teacher's guidebook for 5-year-old and analyzed the contents of specific education such as sustainable development, music, mathematics, science, and safety.

## (2) Ego network analysis of the keyword, '5-year-old'

The Next most frequently appearing keyword in the research related to Nuri Curriculum and the most important keyword in the whole network was '5 year old.' It means that '5-year-old' is the most important aspect of the study about Nuri Curriculum for 3 to 5-year-old. In this study, we tried to grasp the research trends related to the Nuri Curriculum for 5-year-old through the analysis of ego network. The results of the analysis are shown in Fig. 3 and Table 6 below.

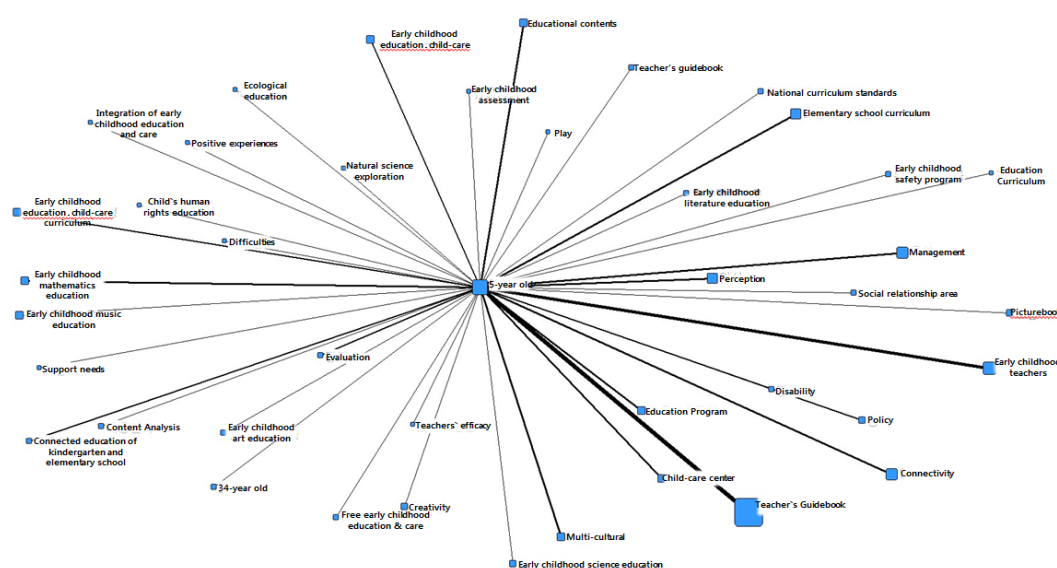


Figure 3. 'Ego network of '5-year-old'

Table 6. Major edge in ego network of '5-year-old'

ranking	node1	node2	edge weight
1	Teacher's guidebook	5-year-old	9
2	5-year-old	Early childhood teacher	6
3	5-year-old	Elementary curriculum	4
4	5-year-old	Operation	4

As a result, '5-year-old' was directly related to 41 keywords related to Nuri Curriculum (see Table 5). As we have seen, the connection strength with 'Teacher's guidebook' was the highest at 9. Next, '5-year-old' showed high connection strength with 'Early childhood teacher (6)', 'Elementary curriculum (4)', 'Operation (4).' In other words, the studies on the Nuri Curriculum for 5-year-old was mainly focused on teacher's guidebook and analyzed about the early childhood teacher, elementary curriculum, operating the curriculum.

#### IV. Discussion and Conclusion

This study examined the research trends of the researches related to Nuri Curriculum published in the Korean Citation Index (KCI) from 2012 to 2016 through keyword network analysis. First, the researchers analyzed the research trends by year and the title of the journals and, analyzed the frequency of major keywords in the journal articles about Nuri Curriculum. Next, we analyze the keyword network to understand the overall tendency of the journal articles related to the Nuri Curriculum. In addition, we investigated research trends related to representative keywords through ego network analysis on main keywords. Based on the results of this study, the following discussions were made.

First, as a result of analyzing the general data status of the papers related to the Nuri Curriculum, a total of 256 papers related to Nuri Curriculum were published in the KCI from 2012 to 2016. It has exploded since 2013, and related papers have been published regularly. In the term of journals, more than 20 papers related to Nuri Curriculum were published for five years in 'The Journal of Korea Open Association for Early Childhood Education', 'Early Childhood Education Research & Review', and 'Korean Journal of Early Childhood Education.'

A total of 256 studies related to the Nuri Curriculum were identified in the yearly trends. That shows the increase in the number of researches compared to analysis of the research trends of early childhood curriculum from 2000 to 2011 by Choi and Kim (2012) which analyzed 156 research papers over 10 years. However, unlike the research by Kim (2015), which reported 102 papers on Nuri Curriculum by March 2015, 147 papers were published from 2012 to 2014 in this study. In the case of the previous research and the present study, the difference in the number of papers published over a common period of time appears to be due to differences in the use of the database for thesis search, even though the differences are considered at the time of the study. In the study of Kim (2015), she used the keyword 'Nuri Curriculum' in the integrated retrieval, but in this study, we searched the articles containing 'Nuri Curriculum' in the title or

keyword using advanced search function. The first thing to do for research trends or literature reviews is to collect related papers and to use the database in a more systematic way for effective data collection. For this purpose, Kim et al. (2011) introduced a method to check the significance or alternative word and to use Boolean operator and cut-off search word to improve the sensitivity of search through NECA systematic review manual. The previous studies and the present study are similar to research subjects. However, there were differences in the number of research subjects due to differences in the methods of collecting data. In order to analyze the research trends, it is necessary to faithfully collect relevant literature, and it is necessary to utilize more systematic methods.

As a result of examining trends in the journals, The journals with a large number of research articles related to Nuri Curriculum, 'The Journal of Korea Open Association for Early Childhood Education', 'Early Childhood Education Research & Review', and 'Korean Journal of Early Childhood Education', were the major academic journals within the 5<sup>th</sup> most influential index that played a central role on early childhood education (Jeong et al., 2015). Most of the 15 journals published with more than four articles related to the Nuri Curriculum were journals in early childhood education or childcare. On the other hand, in addition to the journals for early childhood education and child care, there are 75 papers related to Nuri Curriculum including 52 different journals. Through this, it can be understood that the research related to Nuri Curriculum is not only an important topic in early childhood education and child care, but also a subject that is interested in various academic fields. In other words, research related to Nuri Curriculum can be found not only in early childhood education but also in various academic journals. It seems that interest in Nuri Curriculum is expanding into various academic fields such as administration, technology, and culture.

Second, as a result of examining the keywords shown in the journal articles related to the Nuri Curriculum, the keyword 'Nuri Curriculum' was the most frequently used. And then the frequency of 'Teacher's guidebook', '5-year-old', 'Early childhood teacher', and 'Connectivity' was high. In addition, terms such as 'policy', 'educational child care financing' and 'free education child care' were also relatively high frequency. Though this, we found out that the keywords of the papers include not only the contents of education and teaching methods but also the aspect of early childhood education system. However, despite the fact that various keywords are presented in the research paper related to the Nuri Curriculum, it is difficult to say that the research topics have been widely studied. As a result of looking at the macroscopic properties of the keyword network, it can be seen that the studies related to 'Teacher's guidebook' and '5-year-old' were mainly performed. In other words, the macroscopic tendency of the studies related to the Nuri Curriculum

has been attempted to deal with various aspects of early childhood education and child care, but the research is not wide and the tendency is concentrated on a specific topic.

In particular, various studies focus on 'Teacher's guidebook' and '5-year-old' were conducted, which could be attributed to the characteristics of the curriculum of Korea, which has a high degree of national leadership (Park & Sung, 2011). That is, in the case of Korea's early childhood curriculum, the adoption of the state-led centralized curriculum development method seems to show a similar pattern in the national early childhood education policy and research flow. In the case of the Nuri Curriculum, Nuri Curriculum for 5-year-old was first introduced in 2012 and then, extended to 3 and 4 years later. For this reason, there are many researches on the '5-year-old' Nuri Curriculum, and studies on the 'Teacher's guidebook' have been actively conducted as an analysis of the contents of education at the national level. Therefore, the studies on Nuri Curriculum teacher's guidebook for 5-year-olds are a large part of the journal articles.

In addition to the results of the ego network of the 'Teacher's guidebook', many studies related to the teacher's guidebook have been related to specific subjects such as sustainable development education, early childhood mathematics education, early childhood music education, and early childhood science education. In other words, the research about the contents of education as a key element of early childhood education and child care process were concentrated in the research related to Nuri Curriculum. This is similar to the study by Choi & Kim (2012) that conducted research on early childhood curriculum from 2000 to 2011. There is a tendency to focus on curriculum development and design, analysis of teacher's guidebooks, and activity books. Moreover, it is similar to the study by Kim (2015) that showed the research about on the direction of Nuri Curriculum accounted for about 70% of the total. When the national level curriculum was announced, it developed a guidebook and a Teacher's guidebook, and the detailed national curriculum is presented in a standardized way and delivered through the teacher (Na, 2009). In this regard, many researchers will participate in the study about the national level curriculum of early childhood education (Chio & Kim, 2012). This appears to be a trend of research that is repeated over the introduction period of 2007 Revised Kindergarten Curriculum and Nuri Curriculum.

On the other hand, the result of the ego network of '5-year-old' showed that there are many studies related to the operation, the elementary curriculum, and the early childhood teacher. It is presumed that active research related to the 'Nuri Curriculum for 5-year-old', 'Elementary curriculum', and 'Connectivity' has been done since the introduction of the reinforcement of the linkage between kindergarten and elementary school curriculum as main details in the advancement plan for early childhood education. In addition, it gained positive results when 'Early childhood teacher' and 'Operation' were presented as important research topics related to Nuri Curriculum

because the practice of the curriculum is ultimately dependent on the teacher, and the values and realities of the curriculum are revealed when they are practiced in the educational field (Yeum, 2011). According to Kim (2015) who analyzed the trends of Nuri Curriculum research conducted until 2015, there have been few studies on the operation, recognition, and actuality of Nuri Curriculum. As a result of this study, it was found that various studies related to 5-year-olds were conducted. Since it needs to be actively conducted on early childhood teachers and their operation, it is necessary to carefully review the research topics related to Nuri Curriculum for 5-year-old and extend it to all ages.

It is meaningful that the present study analyzed the research trends about Nuri Curriculum and figure out the major research subjects and its tendency through keyword network analysis method. However, since this study only covers the articles published in the journals of the KCI, further research should be carried out in depth on various research materials such as dissertations and academic conference papers. Furthermore, in this study, we conducted a keyword network analysis only for the keywords presented in the research. In future research, it will be helpful to perform keyword network analysis after text mining including titles, abstracts, etc.

## Reference

- Choi, H. J. & Kim, J. W. (2012). Trends of Early Childhood Curriculum Research: 2000~2011 Journal Articles Analysis. *Journal of Early Childhood Education & Educare Welfare*, 16(4), 115-135.
- Jung, H. Y., Jung, H. Y. & Son, Y. J. (2015). Trends relating to early childhood teacher research through keyword network analysis. *The Journal of Eco Early Childhood Education & Care*, 14(2), 283-308.
- Kim, M. H. (2015). An Analysis of Research on Nuri-Curriculum. *Journal of Korean Child Care and Education*, 11(3), 149-167.
- Kim, S. Y., Park, J. E., Seo, H. J., Seo, H. S., Son, H. J., Shin., C. M., Lee, Y. J., Jang, B. H., & Huh, D. S. (2011) *NECA 연구방법 시리즈*, 1-287. NECA's guidance for undertaking systematic reviews and meta-analyses for intervention. NECA Research methodology series, 1-287.
- Kwon, M. K. (2014). Analysis on the research trend of human resource development utilizing the keyword network analysis. Major in Human Resource Development for Woman Graduate School of Human Resource Development for Women Sookmyung Women's University.
- Lee, G. S. (2015). The past, present, and future of Korean early childhood curriculum. The Spring

- Conference of Korean Society of early childhood education. (pp.19-47). Seoul: Chungang University.
- Lee, S. S. (2014). A Content Analysis of Journal Articles Using the Language Network Analysis Methods. *Journal of the Korean Society for Information Management*, 31(4), 49-68.
- Ministry of Education, Science and Technology & Ministry of Health and Welfare (2013). Curriculum handbook for 3-5 year Nuri curriculum. Seoul: Ministry of Education, Science and Technology & Ministry of Health and Welfare.
- Na, J. (2009). OECD Characteristics of Korean Kindergarten Curriculum compared with OECD's Two Curricular Traditions. *Asian journal of education*, 10(2), 169-193.
- OECD (2013). *Start strong III: a quality toolbox for early childhood education and care*. Paris: OECD.
- Park, M. J. & Sung, Y. K. (2011). Trends of curriculum research: Research areas and methods analysis. *The Journal of Curriculum Studies*, 29(4), 25-46.
- Son, D. W. (2008). Social Network Analysis. Seoul: Kyungmoonsa.
- Yeom, J. S. (2011). Kindergarten Teacher as an Initiator of Curriculum Implementation. *Early Childhood Education Research & Review*, 15(6), 295-310.
- Yuri Belfali (2015). International trend and policy direction of Early Childhood Education and child care(OECD). International Seminar of Korea-OECD Early childhood education • child care policy (pp. 11-23). Seoul: Plaza Hotel.



## 한글 요약

# 키워드 네트워크 분석을 활용한 누리과정 관련 연구동향 분석

정정희 · 이효림

본 연구의 목적은 키워드 네트워크 분석을 활용하여 누리과정 관련 연구동향을 분석하는 것이다. 이를 위해 2012년부터 2016년까지 KCI 등재학술지에 발표된 누리과정 관련 논문의 연도별, 학술지별 경향을 파악하고, 논문에 제시된 주제어에 대한 키워드 네트워크 분석을 실시하였다. 연구결과는 다음과 같다. 첫째, 누리과정 관련 학술지 논문의 일반적인 데이터 현황을 분석한 결과, 2012년부터 2016년까지 한국연구재단 등재지에 총 256편의 누리과정 관련 논문이 게재되었으며, '열린유아교육연구'에 가장 많은 논문이 발표된 것으로 나타났다. 둘째, 누리과정 관련 학술지 논문에 나타난 키워드를 살펴본 결과, 검색어인 '누리과정'이 가장 많은 빈도를 차지하고 있었으며, 다음으로 '교사용지도서', '5세', '유아교사', '연계성'의 빈도가 높은 것으로 나타났다. 키워드 네트워크의 노드 중심성을 분석한 결과, 주요한 2개의 키워드는 '교사용지도서'와 '5세'인 것으로 나타났다. 대표 키워드의 예고 네트워크를 분석한 결과, 두 대표 키워드 간의 연결 강도가 높게 나타났다. 이상의 연구는 키워드 네트워크 분석을 활용하여 누리과정 관련 연구들의 핵심적인 연구주제를 파악하고, 각 핵심 연구 주제에 대한 구체적인 경향성을 파악하였다는데 의의가 있다.

주제어 : 누리과정, 연구동향, 키워드 네트워크 분석

Manuscript received October 20, 2017

Revision Received November 20, 2017

Accepted December 02, 2017

Translated manuscript accepted December 10, 2017