



A Study on the Development of Korean Curriculum for Multicultural Students Using AI Technology

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Abstract

Purpose – This study focused on the development of a Korean language curriculum to solve the problem of Korean literacy among students from multicultural families.

Research design, data, and methodology – A case study was conducted on Sim(2018)'s learner-centered learning model to develop an educational plan including AI technology, which will help students from multicultural families to effectively improve their communication and learning skills by improving their reading, writing, and speaking of Korean.

Result – Total of six educational plans using AI technology (Microsoft PowerPoint's drawing function, AutoDraw, and Google's Four-cut cartoons) were developed.

Conclusion – The curriculum using AI is expected to greatly contribute to the recovery of language learning ability and confidence in studies necessary to improve learners' language education.

Keywords: Literacy, AI, Edutech, AutoDraw, Microsoft Powerpoint Drawing, Four-Cut Cartoon

JEL Classification Code: I20, I21, I29

1. Introduction

The "Korean" curriculum is an educational program that helps students from multicultural backgrounds become independent members of Korean society in the future with Korean communication and learning abilities in various subjects. Recently, due to the rapid influx of members from various linguistic and cultural backgrounds, our society is rapidly changing into a multicultural society, and as a result, the number of students from various linguistic and cultural backgrounds continues to increase. For most multicultural students who are not familiar with the Korean language and culture to successfully settle into Korean society and adapt to school life without difficulty, it is urgent to have a certain level of Korean language skills, so a 'Korean' curriculum education program is needed (Ministry of Education, 2012).

On the other hand, more than 80% of multicultural families live in rural areas, and their parents' status is often illegal, so children miss an important period of language acquisition by failing to properly participate in institutional education, and as a result, language development is not achieved. This immediately appears as a negative result of poor learning, school dropout, and identity confusion (Kim, 2021).

Children from multicultural families need to approach the problem of literacy, which is the 'ability to read and write', not 'illiteracy' based on the recent digital Edutech environment, and seek a desirable direction of education from the perspective of Korean language education welfare (Won, 2021). Here, "Korean language education welfare" can be said to be a public guarantee that anyone can equally receive opportunities for Korean language education so that they can have the literacy necessary to pursue their happiness regardless of the environment or conditions (Won, 2021).

In this study, Sim (2018) developed a Korean language curriculum based on 'Korean language education welfare' based on the learner-centered learning model presented in his paper 'Korean Education Plan for Multicultural Family Learners using Sim(2018)'s learner-centered learning model.

Among the low-income students belonging to local children's centers, those who were not born in Korea or speak a language other than Korean, and those who were born and raised in Korea but had difficulty adapting to school life or participating in classes in Korean are the main targets of the "Korean" curriculum.

In addition, 'Korean' education for multicultural students will develop 'A Korean' curriculum focusing on two goals: 'Korean' education for daily life and 'Korean' for learning Korean for daily life so that they can develop not only basic communication skills for daily life but also learning Korean for learning various subjects. In addition, the "Korean" curriculum was focused on developing a "Korean" curriculum to learn the Korean language and culture while respecting the linguistic and cultural backgrounds of multicultural students, so that they can respond appropriately to Korean society and become a member of Korean society based on their interest confidence Korean language.

2. Literature Review

Professor YT Sim suggested teaching and learning methods to improve Korean language education skills to compensate for serious problems such as academic ability and maladjustment to school life due to the lack of Korean language skills. In the case paper, the increase in multicultural learners by school level in elementary, middle, and high schools was first identified, their Korean language education and school life were examined, and finally, teaching and learning using children's literature and fairy tales were presented to learners in lower elementary school to compensate for their learning deficits (Sim, 2018).

Kang (2020) focused on the use of artificial intelligence drawing tools as an educational plan for picture book creation in the digital era. Artificial intelligence drawing tools mimic the way humans perceive and conceptualize objects. AutoDraw, which is an example in this study, recognizes a user's brief sketch through artificial intelligence and converts it into a map suitable for this object. Using artificial intelligence drawing tools, it is possible to reduce the burden of picture expression and efficiently achieve the direction of picture book creation education (Kang, 2020). Park, Eun-ha, et al. showed that by introducing cartoon-based storytelling into learning to express learners' emotions in virtual cartoon characters, they can improve participation and immersion in classes by making cartoon characters feel the same as themselves (Park & Yoon, 2014).

Kim (2022) saw that students from multicultural families can expand their knowledge of culture, identity, stereotypes, prejudice, and discrimination of various groups through reading. Therefore, readers must have multicultural sensitivity, critical literacy, and empathetic understanding, and multicultural reading, subject-integrated reading, and cultural-sensitive reading can be used as reading methods to develop these competencies (Kim, 2022). In addition, Hong (2020) analyzed the achievement standards of the Korean language curriculum announced in 2017

and presented the achievement standards of elementary, middle, and high schools by language function (listening, speaking, reading, and writing) according to the achievement criteria stages of beginner (stage 1 and stage 2), intermediate (stage 3 and stage 4), and advanced (stage 5 and 6). In particular, the achievement criteria related to 'reading stories' are 'reading stories and identifying people, events, and backgrounds' in the 4 stage of the intermediate level and 'reading stories and comparing different cultures' in the 6 stages of the advanced level (Hong, 2020). In addition, the curriculum presents 'step-by-step text types', and it was confirmed that story formats are actively recommended as picture diaries, picture books, travel journals, fairy tales, cartoons, daily texts, diaries, and letters are included in beginner levels, and book reports, novels, essays, fables, e-mails, notes, and biographies are included in the intermediate levels (Hong, 2020).

Currently, AI has come to our daily lives through chatbots, smart speakers, healthcare, and self-driving cars, and policies for AI education are being prepared. However, research on AI education is mainly focused on elementary mathematics, science, and information (computer), and research on Korean language education is limited only in traditional Korean language education areas (speaking/listening, reading, writing, grammar, and literature) (Kim, 2022). In addition, basic literacy education is one of the things to pay attention to dynamically cope with the reality of education that is rapidly changing into a multicultural society. Learners from multicultural backgrounds who lack basic reading and writing skills continue to have difficulties in school life, and the first task to support it is to strengthen basic literacy education. Basic literacy education should ensure that basic literacy can be acquired and utilized cross-curricular through linkage with other content subjects as well as Korean language subjects (Lee, 2020).

The implications found in the related literature research above are summarized as follows. First, teaching and learning using children's literature and fairy tales can be effective for multicultural family learners in the lower grades of elementary school as a teaching and learning method to improve their Korean education skills to compensate for learning deficits. Second, in particular, multicultural reading, subject-integrated reading, and cultural-sensitive reading can be used to improve multicultural sensitivity, critical literacy, and empathetic understanding skills through reading. Third, AI technology can be used as a way to more efficiently conduct Korean language education through reading, such as children's literature and fairy tales. Using artificial intelligence drawing tools such as AutoDraw, it can reduce learners' burden on picture representation, efficiently achieve the purpose of picture book creation education, and improve learners' participation and immersion by introducing cartoon-based storytelling into learning to express learners' emotions in virtual cartoon characters. Fourth, the 'Korean Language Curriculum' announced in 2017 suggested achievement standards for elementary, middle, and high schools by language function (listening, speaking, reading, writing), and actively recommended picture diaries, picture books, travel journals, fairy tales, cartoons, daily texts, diaries, notes, and letters in the beginner level and book reports, novels, essays, fables, e-mails, notes, and biographies in the intermediate level. In particular, basic literacy education requires cross-curricular acquisition through connection between the Korean language subject and other subjects, so the active use of AI should be considered.

In summary, this study differs the most from previous studies in that it suggests that AI-based technology such as AutoDraw and cartoon-based storytelling technology are effectively improved in the language skills (listening, speaking, reading, and writing).

3. Curriculum Development Strategy for Korean Language Education

After a case study of the learner-centered learning model, this study developed a Korean language curriculum using AI technology so that students from multicultural families can effectively improve their communication and learning skills by improving their reading, writing, and speaking skills. The research subjects and research goals for the development of this curriculum are as follows.

3.1. Subject of Study

This study is to develop a Korean language curriculum to solve the problem of Korean literacy among elementary school students from multicultural families belonging to a local children's center.

3.2. Research Objectives

This study has four objectives - to develop students can understand basic knowledge of Korean and have beginner-level communication skills necessary for daily life, to develop students can have beginner learning Korean skills to

participate as active learners in classroom classes of schools in Korea, to develop students have the basic mutual cultural understanding and communication skills to respond appropriately to Korean society and culture, to develop students have a positive attitude and identity as a child in Korean society, together with interest in the Korean language and confidence in the use of the Korean language.

4. Result

The total education session consists of six classes, and the AI technologies used are Microsoft PowerPoint's drawing function, AutoDraw, and Google's four-cut cartoons. The education sessions to which these AI technologies are applied are the 3rd, 5th, and 6th.

4.1. Detailed Education Plan for Each Class

The education plan consists of a total of six sessions, and a detailed education plan for each session was established, including educational goals, educational contents, and learning materials (Table 1). In the 3rd, 5th, and 6th session of the curriculum presented in the detailed education plan, AI technologies were used for learning activities.

Table 1: Education plan by session

Session	Educational Goal	Education Content	Learning Materials
1	<ul style="list-style-type: none"> ① I can say numbers between 1 and 100 in Korean. ② Understand Korean culture related to numbers and apply them to real life. 	<ul style="list-style-type: none"> ① Consider the prior knowledge that students have so that they can read numbers. ② It arouses interest by presenting various examples related to real life in number-related culture. 	<ul style="list-style-type: none"> Handout Video Activity sheet MS PPT
2	<ul style="list-style-type: none"> ① Can understand and speak words related to dates, days, and times. ② You can ask and answer questions about the date, day, and time. ③ I can name anniversaries and dates. 	<ul style="list-style-type: none"> ① Learn and practice various date expressions. ② Understand the words from Monday to Sunday and be able to ask and answer questions about the day of the week. ③ After practicing anniversary words, practice saying anniversaries and dates. 	<ul style="list-style-type: none"> Handout Video Activity sheet MS PPT
3	<ul style="list-style-type: none"> ① You can ask and answer the time. ② You can ask and answer questions about your daily routine. ③ You can make a daily schedule in Korean. 	<ul style="list-style-type: none"> ① Learn the expression of time, and practice asking and answering time. ② After learning basic work and expression, practice talking about your daily work. ③ I write down my daily routine in a daily schedule and present it. 	<ul style="list-style-type: none"> Handouts Video Activity sheet MS PPT
4	<ul style="list-style-type: none"> ① I can understand and read family names. ② You can understand and read appropriately the expression of asking and answering. ③ You can use the expression asking age according to the situation. 	<ul style="list-style-type: none"> ① Use word cards to learn family names. ② The CD is listened to and followed, and the teacher goes around to correct the students' conversation. ③ Explain the situation in which each expression is used and practice conversational form as a pair activity. 	<ul style="list-style-type: none"> Word card Video CD Handout MS PPT

5	<ul style="list-style-type: none"> ① I can read and understand children's books. ② I can explain the understanding of the children's book. ③ Can write expressions learned in children's books in Korean. 	<ul style="list-style-type: none"> ① Learn words from children's books. ② Read and explain a storybook together. ③ Students can express their understanding in pictures and write in Korean. 	Fairy tale CD Activity sheet AutoDraw
6	<ul style="list-style-type: none"> ① Can write and read words from children's books. ② You can fill in the blanks with words to complete the sentences. ③ Able to complete sentences and speak using words learned from children's books. 	<ul style="list-style-type: none"> ① Use bingo activities to write and say words. ② Solve the blanks and practice speaking with the sentence. ③ In the 5th session, the content of the children's book written in Korean is drawn and presented as a Four-cut cartoon. 	Fairy tale book Bingo activity sheet Blank question paper Google Four-cut cartoon

Specific details on how to utilize AI technology for teaching and learning activities of the 3rd, 5th, and 6th sessions are as follows.

4.2. Using Microsoft PowerPoint's Drawing Function for the 3rd Session Education Activities

4.2.1. Overview of Teaching and Learning

The theme of the 3rd session is learning numbers, and the educational goal is to ask and answer time, ask and answer daily schedules, and make a daily schedule in Korean. However, multicultural students unfamiliar with Korean have difficulty accurately entering numbers or letters when writing a daily schedule. To solve this problem, we intend to utilize the Drawing function provided by Microsoft PowerPoint. Using Microsoft PowerPoint's Drawing capabilities can greatly help students enter difficult numbers or letters correctly. The education plan for 3rd session is shown in Table 2.

Table 2: Education plan for 3rd Session

Unit (topic)	Class	Time	Target	Location
Learn Numbers	3/6	60 minutes	3rd to 6th grade	3-1 classroom
Class Goal	<ul style="list-style-type: none"> ① You can ask and answer the time. ② You can ask and answer questions about your daily routine. ③ You can make a daily schedule in Korean. 			
Class Material	Handouts, Videos, Activity sheets, MS PowerPoint, Desktop/Laptop PC			
Evaluation method and criteria	[Evaluation Methods]			
	<ul style="list-style-type: none"> ● Evaluate how active you are in class. ● Listening and writing skills are evaluated through vocabulary card classes. ● Speaking and listening skills are evaluated through the presentation of MS PowerPoint results and question time. 			
	[Evaluation standard]			
	Excellent	<ul style="list-style-type: none"> - Participate in class actively and with concentration. - Excellent listening and writing. - Excellent speaking and listening skills. 		
Normal	<ul style="list-style-type: none"> - Relatively active and focused in class to participate in class. - Listening and writing are not difficult to participate in class. - There is no difficulty in participating in class in speaking and listening. 			
Lack	<ul style="list-style-type: none"> - Passive and focused in class, unable to participate in class. - Listening and writing are difficult to participate in class. - It is difficult to participate in class in speaking and listening. 			

Source: Kang(2020)

4.2.2. Details of Teaching and Learning

To achieve the 3rd session's goal, Table3 shows the detailed education plan. It includes using of the drawing function in MS PowerPoint to create students' daily schedule.

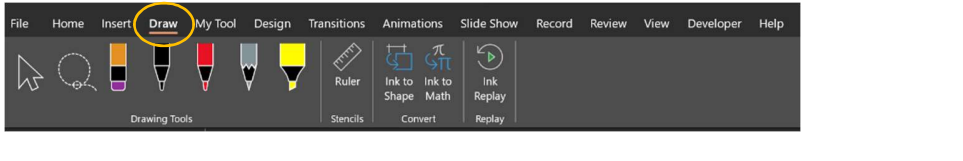
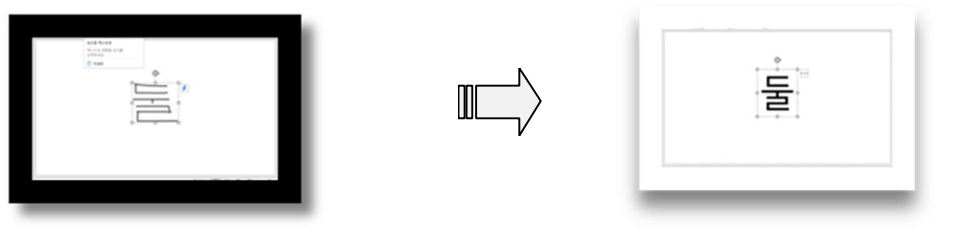
Table 3: Detailed education plan for 3rd Session

Step (time)	Details (form)	Teaching and learning activities	Points to note on the teaching
Introduction (15)	Confirmation of exhibition learning	1) Remind yourself of what you learned last time. - Ask and answer the date, day, and time - Speak about anniversaries and dates	Check that students are ready to participate in class.
	Confirm learning goal	1) Suggest learning goals. - Present learning goals to students using a written document and have them read them aloud 2) Briefly guide the contents of this lesson - Ask and answer time	
Deployment (40)	Word Proposal	1) Present words related to time. - Suggest words related to 'time' through picture cards. - Distribute handouts with the word 'time' written on them. - Ask students about 'time' and related words. 2) Suggest words related to daily routines. - Suggest words related to 'routine' through picture cards. - Distribute handouts with the word 'routine' written on them. - Ask students about 'routine' and related words.	Encourage students to look at the picture cards and respond.
	Group activity	1) Organize groups considering the level of students. 2) Have each group talk about their daily routine. 3) Create your daily schedule using MS PowerPoint. 4) Present the prepared daily schedule to the team members.	Students who have difficulty using MS PowerPoint are instructed to use colored pencils.
Organize (5)	Learning Objectives remind	Ask students to read the written learning objectives aloud.	
	presenting assignments	Describe the assignment.	

4.2.3. A Use Case of the Drawing Function of MS PowerPoint

By entering numbers or Korean letters by hand and converting them into an organized form using MS PowerPoint's drawing function, accurate letters and numbers can be entered with the help of MS PowerPoint's AI function when writing a daily schedule (Table 4).

Table 4: Use case of AI technology - Drawing function of MS PowerPoint

<p>MS PowerPoint Menu bar</p>	
<p>Transformation using "Drawing"</p>	

4.3. Using AutoDraw for 5th Session Education Activities

4.3.1. Overview of Teaching and Learning

The theme of the 5th session is "Learning vocabulary and expression through fairy tale books," and the educational goal is to learn words from fairy tale books, read and explain fairy tale books, express the understood contents in pictures, and write them in Korean. This is to have a presentation ability to explain one's thoughts in Korean and confidence in the Korean language while drawing and presenting the contents and feelings that one understands after reading a Korean fairy tale book. To achieve this goal more effectively, AutoDraw, which draws finished pictures by drawing frames, helps students who are not confident in drawing freely participate in classes and also reduces the time it takes to draw, giving them more time to present. The education plan for 5th session is shown in Table5.

Table 5: Education plan for 5th Session

Unit (topic)	Class	Time	Target	Location
Learning vocabulary and expression skills through children's books	5/6	60 minutes	3rd to 6th grade	3-1 classroom
Class Goal	① Learn words from children's books. ② Read and explain a storybook together. ③ Students can express their understanding in pictures and write in Korean.			
Class Material	Children's books, CDs, worksheets, desktop/laptop, AutoDraw			
Evaluation method and criteria	[Assessment Methods]			
	<ul style="list-style-type: none"> ● Evaluate how active you are in class. ● Listening and writing skills are evaluated through vocabulary card classes. ● Speaking and listening are assessed through AutoDraw presentation and question time. 			
	[Evaluation standard]			
	Excellent	- Participate in class actively and with concentration. - Excellent listening and writing. - Excellent speaking and listening skills.		
Normal	- Relatively active and focused in class to participate in class. - Listening and writing are not difficult to participate in class. - There is no difficulty in participating in class in speaking and listening.			
Lack	- Passive and focused in class, unable to participate in class. - Listening and writing are difficult to participate in class. - It is difficult to participate in class in speaking and listening.			

Source: Kang(2020)

4.3.2. Details of Teaching and Learning

To achieve the 5th session's goal, Table6 shows the detailed education plan. It includes using of the AutoDraw function to express the contents of the children's book which has understood by students.

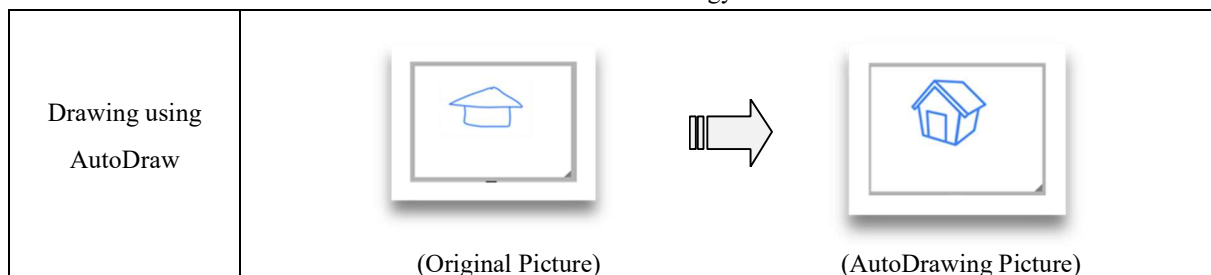
Table 6: Detailed education plan for 5th Session

Step (time)	Details (form)	Teaching and learning activities	Points to note on the teaching
Introduction (15)	Confirmation of exhibition learning	1) Remind yourself of what you learned last time. - Understand and know family titles - Ask and answer your age	Check that students are ready to participate in class.
	Confirm learning goal	1) Suggest learning goals. - Present learning goals to students using a written document and have them read them aloud 2) Briefly guide the contents of this lesson. - Learning words from children's books - Read and understand children's books - Express what you understand by reading a children's book through pictures - Write the contents expressed in pictures in Korean	
Deployment (40)	Word presentation	1) Suggest words from children's books. - Explain the meaning through picture cards related to words. - Read the words and correct the wrong pronunciation while repeating them. - Read and write words.	Encourage students to look at the picture cards and respond.
	Read a storybook	1) Take turns reading fairy tales together and explaining the contents. - Take turns reading fairy tales. - Take turns talking about the contents of the storybook and what they felt. - Summarize the contents and meaning of the fairy tale book.	
	Fairy tale book detail as a picture to express	1) Have students express the contents of the fairy tale book they understand through pictures. - Explains how to use AutoDraw. - Use AutoDraw to express the contents of the children's book understood. 2) Present the pictures created by the students.	AutoDraw can use colored pencils.
Organize (5)	Learning Objectives remind	Ask students to read the written learning objectives aloud.	
	presenting assignments	Describe the assignment.	

4.3.3. A Use Case of AutoDraw

Students can draw and enter the picture by hand and convert it into a clear picture using AutoDraw's AI function through the menu bar (Table 7).

Table 7: Use case of AI technology – AutoDraw



4.4. Using Four-cut Cartoons for 6th Session Education Activities

4.4.1. Overview of Teaching and Learning

The theme of the 6th session is "Improving presentation skills through children's books," and the main educational goal is to improve presentation skills by drawing and presenting the contents of children's books written in Korean in the 5th class in four-cut cartoons. It is also an educational lesson accompanied by writing practice that develops sentence and expression skills through storytelling writing for drawing four-cut cartoons. By summarizing and presenting storytelling written by students in four-cut cartoons, they improve their ability to clearly express and present what they want to talk about. To effectively achieve these learning goals, Google's four-cut cartoons are used in class. The education plan for 6th session is shown in Table8.

Table 8: Education plan for 6th Session

Unit (topic)	Class	Time	Target	Location						
Improving presentation skills through children's books	6/6	60 minutes	3rd to 6th grade	3-1 classroom						
Class Goal	① Use bingo activities to write and say words. ② Solve the blanks and practice speaking with the sentence. ③ In the 5th session, the content of the children's book written in Korean is drawn and presented as a Four-cut cartoon.									
Class Material	Children's books, CD, Activity sheet, Desktop/Laptop PC, Google Four-cut cartoon									
Evaluation method and criteria	[Assessment Methods] <ul style="list-style-type: none"> ● Evaluate how active you are in class. ● Listening and writing are evaluated through bingo activity sheets and 4-cut cartoon results. ● Speaking and listening are evaluated through the four-cut cartoon presentation and question time. [Evaluation standard] <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Excellent</td> <td> - Participate in class actively and with concentration. - Excellent listening and writing. - Excellent speaking and listening skills. </td> </tr> <tr> <td style="text-align: center;">Normal</td> <td> - Relatively active and focused in class to participate in class. - Listening and writing are not difficult to participate in class. - There is no difficulty in participating in class in speaking and listening. </td> </tr> <tr> <td style="text-align: center;">Lack</td> <td> - Passive and focused in class, unable to participate in class. - Listening and writing are difficult to participate in class. - It is difficult to participate in class in speaking and listening. </td> </tr> </table>				Excellent	- Participate in class actively and with concentration. - Excellent listening and writing. - Excellent speaking and listening skills.	Normal	- Relatively active and focused in class to participate in class. - Listening and writing are not difficult to participate in class. - There is no difficulty in participating in class in speaking and listening.	Lack	- Passive and focused in class, unable to participate in class. - Listening and writing are difficult to participate in class. - It is difficult to participate in class in speaking and listening.
Excellent	- Participate in class actively and with concentration. - Excellent listening and writing. - Excellent speaking and listening skills.									
Normal	- Relatively active and focused in class to participate in class. - Listening and writing are not difficult to participate in class. - There is no difficulty in participating in class in speaking and listening.									
Lack	- Passive and focused in class, unable to participate in class. - Listening and writing are difficult to participate in class. - It is difficult to participate in class in speaking and listening.									

[Reference: Kang(2020)]

4.4.2. Details of Teaching and Learning

To achieve the 6th session’s goal, Table 9 shows the detailed education plan. It includes using of the Four-cut cartoon function to express the contents of the children's book which has understood by students.

Table 9: Detailed education plan for 6th Session

Step (time)	Details (form)	Teaching and learning activities	Points to note on the teaching
Introduction (15)	Confirmation of exhibition learning	1) Remind yourself of what you learned last time. - Read children's books and understand their contents - Draw the contents of a children's book as a picture and write in Hangeul	Check that students are ready to participate in class.
	Confirm learning goal	1) Suggest learning goals. - Present learning goals to students using a written document and have them read them aloud 2) Briefly guide the contents of this lesson. - Learning words through bingo activities - Learn sentences by filling in the blanks - Write a 4-panel cartoon of the contents expressed in pictures and organized in Korean last time	
Deployment (40)	Word writing bingo activity	1) Present the words learned in the children's book in the past class in ppt. 2) As the students read the words together, the teacher explains the meaning of the word. 3) Distribute activity sheets and play 16 square bingo activities. The teacher explains the bingo rules. 4) After the teacher explains the meaning of the word in the PPT, students are instructed to write the appropriate word in the bingo box. 5) When a student calls out 10 bingo, the game ends.	It is announced that individual worksheets will be used for evaluation purposes so that everyone actively participates.
	Complete the sentence and speak	1) Create a problem to fill in the blanks with appropriate words from the sentences of the fairy tales learned last time and write them in ppt. 2) Show the PPT, and let the student who has found the right word raise his or her hand to announce the answer. 3) When the sentence is complete, all students read the sentence together.	Correct the parts where the students pronounce incorrectly and have them read it again.
	Create and present four-panel comics	1) Guide the storytelling work so that the contents of the children's book that each person wrote last time can be written as four-cut cartoons. 2) Guidance on how to write webtoons. 3) Write four cuts of manga. 4) Present the cartoons created by each of them.	Students who are not familiar with drawing Google 4-cut cartoons can draw by hand.
Organize (5)	Learning Objectives remind	Ask students to read the written learning objectives aloud.	
	Presenting assignments	Describe the assignment.	

4.4.3. A Use Case of Four-cut Cartoon

Table 10 shows an example of Four-cut cartoon for which fairy tale’s name is “Jack and the Beanstalk”.

Table 10: Use case of AI technology – Four-cut cartoon

<p>Google Four-cut cartoon drawing example (Fairy Tale: Jack and the Beanstalk)</p>				
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5. Discussion and Conclusion

The learner-centered learning model used in existing Korean language education suggested that it would be meaningful in improving language skills and Korean language education by restoring learners' language skills and confidence in their studies, and would be beneficial in improving language skills and Korean language education skills of specific subjects such as multicultural family learners. Then the curriculum using AI proposed in this paper differs from the learner-centered learning model in the following points:

First, it is the same to conduct classes using fairy tales, but if AI is used for education, it may escape the limitations such as having to conduct education for the lower grades of elementary school (1st and 2nd graders) in the Sim(2018)'s paper. In the case paper, since the teaching method reads the fairy tale and aims for dialogue between teachers and students and the presentation of students as an educational method, it is inevitable to determine the subject of education depending on the content level of the fairy tale. However, when teaching using AI, the educational content can be organized so that students above the third grade of elementary school who can use AI regardless of the content level of the fairy tale can participate in the education together.

Second, it is possible to mix the lower and higher grades of elementary school and operate them as a team to conduct fairy tale education through the use of AI. Rather than conducting monotonous teacher-centered classes, this can make Korean language education more active while enjoying mutual exchanges between senior and lower-grade students in the team.

Third, accurate understanding, writing and listening to Korean by writing and presenting the fairy tale content's understanding and feeling with AI's help. Reading and speaking skills can be naturally improved evenly. In particular, difficult words, pronunciation, and sentences can be checked and corrected anytime, anywhere with the help of AI.

Fourth, since classes are conducted using AI, Korean class time is not boring, but rather fun and interesting, so that immersion in classes can be higher than the general teaching method suggested in Sim (2018)'s paper.

Fifth, AI allows teachers to more accurately and objectively evaluate students' Korean achievements by submitting articles, drawings, and four-cut cartoons written in Korean classes and sharing them with all students through the presentation of the submitted class results.

At a time when AI is being actively applied to our daily lives, research on AI education should be accelerated so that education using AI can be applied in the field of Korean language education, not only in elementary mathematics, science, and information (computer). In particular, basic literacy education is one of the things to pay attention to dynamically cope with the rapidly changing educational reality of a multicultural society, and learners from multicultural backgrounds who lack basic reading and writing skills continue to have difficulty in school life. Therefore, it is necessary to further study the ways and effects of basic literacy education through AI so that basic literacy can be effectively acquired by performing cross-curricular learning through linking with Korean language and other subjects using AI.

This study has limitations in suggesting a plan to use only relatively basic AI functions such as handwriting conversion, drawing, and four-cut cartoons so that students from multicultural families can learn reading and writing effectively. It is proposed to actually apply the learning plan using AI function to elementary school students from multicultural families and to conduct a learning analysis on the learning effect to study the effect of Korean language education using AI function. It is also proposed to continuously study how to apply various AI functions capable of two-way education support such as ChatGPT to Korean language education learning plans.

References

- Hong, Inyoung. (2020). Study on the Use of Story in Korean Language Education - Focusing on the Unit 'Reading of Story' in the Standard Korean for Elementary School Students. *The Journal of Language & Literature*, 81(1), 445-488.
- Kang, Seo-Hee. (2020). A Study on the Educational Plan for Picture Book Creation Using A. I. Drawing Tools. *Cheongram Korean Language Education*, 77, 235-260.
- Kang, Seo Won. (2020). Korean Language Teaching and Learning Plan for Global Citizenship Education in a Multicultural Society. *Multi-cultural Society and Education Studies*, 5(1), 1-31.
- Kim, Chang-Lae. (2021). Analysis of the current status of multicultural education programs. *Journal of Social Welfare Management*, 8(1), 493-5
- Kim, Mihye. (2022). A study on the reading ability in a multicultural society. *Journal of reading research*, 65(1), 9-40.
- Kim, Yunkyong. (2022). Exploring the Direction of Korean Education for the Cultivating AI Literacy - Focusing on 'AI-based Convergence Innovation Future Education'. *Journal of AI Humanities*, 11(2), 121-148.
- Lee, Soo-jin. (2020). A Study on the Basic Literacy Curriculum's Convergent Management for Multicultural Background Students. *The Korean Language and Literature Education Journal*, 72, 187-214.
- Ministry of Education (2012), *Korean Language Curriculum* (Ministry of Education Notice No. 2015-74 [Annex 43]), Ministry of Education, Science and Technology
- Park, E., & Yoon, J. (2014, November 28). Research on Photo-storytelling based on Comics for Children's Photo Education. *The Journal of the Korea Contents Association*, 14(11), 125-132.
- Sim, Young-taek. (2018). A Study on the Korean Language Education of Multicultural families Using Fairy Tales. *Multicultural Studies*, 7(1-2), 31-58.
- Won, Jinsook. (2021). An Exploratory Study on the Welfare of Korean Language Education in Schools: Focused on Literacy Education for Multicultural Learners. *Korean journal of elementary education*, 32(1), 219-234.