

Effects of AI-Based Picture Book Activities on Young Children's Language Expression Ability and Digital Literacy

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HOW TO CITE:

HaeWon Min (2026). Effects of AI-Based Picture Book Activities on Young Children's Language Expression Ability and Digital Literacy. *International Journal of Special Education*, 41(6s), 582-592.

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ABSTRACT:

Background: The rapid advancement of generative artificial intelligence (AI) has increased the need for new teaching and learning approaches in early childhood education. However, empirical studies examining the educational effects of generative AI-based activities for young children remain limited. Therefore, this study aimed to develop an AI-based picture book activity program and investigate its effects on children's language expression ability and digital literacy.

Materials and Methods: This study was conducted with 39 five-year-old children from two kindergartens in Jeollanam-do, Republic of Korea. The experimental group participated in an AI-based picture book activity program, whereas the comparison group engaged in general picture book and art activities based on the Nuri Curriculum. The intervention was implemented over 10 sessions for 6 weeks. The program applied a four-phase instructional model and utilized generative AI tools, including Book Creator, ChatGPT, Gemini Storybook, Readkidz, and Canva. Pre- and post-tests of language expression ability and digital literacy were conducted, and analysis of covariance (ANCOVA) was used for data analysis.

Results: ANCOVA using pre-test scores as covariates revealed that the experimental group demonstrated significantly higher scores in Story Embellishment Matching the Content, media use competency, and overall language expression ability and digital literacy than the comparison group following the intervention. Although the overall language expression ability and digital literacy showed significant group differences, the group difference in Story Embellishment with Coherence did not reach statistical significance, showing only a marginal positive trend.

Conclusion: The findings suggest that AI-based picture book activities can serve as meaningful educational experiences that support young children's language expression ability and digital literacy within developmentally appropriate and play-based learning environments. The study also highlights the importance of teacher mediation and AI literacy in effectively implementing AI-based activities in early childhood education settings.

Keywords: AI-based picture books, young children, language expression ability, digital literacy, early childhood education

Introduction

The rapid proliferation of generative artificial intelligence (AI) is fundamentally transforming educational environments at all levels, and early childhood education is no exception. As AI-based tools become increasingly accessible in everyday life, there is growing recognition that young children should be provided with opportunities to engage with digital technologies not merely as passive consumers, but as active creators and collaborators [1]. In this context, the 2019 Revised Nuri Curriculum of South Korea emphasizes child-centered and play-centered learning as core educational values, forming a natural foundation for integrating AI-based activities into early childhood education settings [2].

Picture books have long been recognized as a powerful medium for supporting young children's language development, imagination, and narrative thinking, and shared book reading has been reported to enhance young children's language comprehension and story construction abilities [3,4]. The recent emergence of generative AI tools, including image generation platforms, text-to-speech engines, and AI-based storytelling applications, has further expanded the possibilities of picture book activities beyond conventional formats [5]. Recent studies in early childhood literature education have suggested that generative AI-based picture book creation activities can promote understanding of picture books, AI literacy, digital media competency, and creative expression [5]. By enabling children to generate, revise, and narrate their own stories, these tools position AI as an interactive play partner rather than a mere instructional medium [6]. However, despite this growing potential, concerns regarding excessive digital immersion and screen exposure in early childhood continue to be raised [7]. This has prompted calls for systematic instructional design models that meaningfully balance analog, sensory-based play with AI-enhanced creative experiences.

Existing research on digital technology in early childhood education has predominantly focused

on general ICT use, tablet-based learning, or the effects of media exposure on language and cognitive development [8,9]. While these studies have demonstrated the educational potential of digital technologies, they do not sufficiently reflect the effects of creativity-centered activities utilizing recently emerging generative AI tools. In particular, studies that simultaneously examine the effects of generative AI-based picture book activities on young children's language expression ability and digital literacy remain limited [10]. Recent scoping reviews have further reported that AI-based educational activities positively influence young children's cognitive, linguistic, socio-emotional, and creative development when implemented within developmentally appropriate and play-based learning environments [10].

Language expression ability refers to young children's capacity to convey their thoughts and emotions through logical, coherent, and connected language and is considered one of the most critical developmental outcomes in early childhood [11]. Digital literacy is defined as the competency to understand, use, and create information through digital media and is emphasized as an essential future competency in an AI-driven society [12]. AI-based picture book creation activities involving story construction, image expression, imagination, and problem-solving processes may provide educational contexts that simultaneously support young children's language expression ability and digital literacy.

Therefore, this study aims to develop an AI-based picture book activity program and explore its effects on young children's language expression ability and digital literacy. It further seeks to provide foundational data for the design of digital play and creative activities for young children appropriate for the AI era.

Materials and Methods

Table 1. Demographic Characteristics of Participants

Group	Boys	Girls	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Experimenta (N=20)l	8	12	73.10	2.13	-1.268	.213
Comparison (N=19)	9	10	73.89	1.76		

An examination of the demographic characteristics of the participants is presented in Table 1. The experimental group (Kindergarten A) consisted of 20 children (8 boys, 12 girls) with a mean age of 73.10 months ($SD = 2.13$), and the comparison group (Kindergarten B) consisted of 19 children (9 boys, 10 girls) with a mean age of 73.89 months ($SD = 1.76$). An independent samples t-test revealed no statistically significant difference in age between the two groups ($t = -1.268$, $p = .213$), confirming that the groups were homogeneous

prior to the intervention.

The program was developed by adapting and restructuring a teaching–learning model for digital media use from prior research to align with the objectives of the present study. The instructional sequence followed a four-stage teaching–learning model: Developing Interest in Digital Media → Exploring Digital Media → Connecting Digital Media to Activities → Recalling Activities and Planning for Practice [14].

Table 2. Overview of the AI-Based Picture Book Activity Program

Session	AI Tools	Pedagogical Stage	Activity Contents
1	Book Creator	Interest → Exploration	• Explore the Book Creator interface. • Create a digital book cover using photos or drawings.
2		Connection → Reflection	• Collect and upload photos from daily life. • Decorate images using digital drawing tools and stickers.
3	ChatGPT	Interest → Exploration	• Collect and upload photos from daily life. • Decorate images using digital drawing tools and stickers.
4		Connection → Reflection	• Import AI-generated images into Book Creator. • Create dialogue and type narrative text.
5	Gemini Storybook	Interest → Exploration	• Upload character drawings into Gemini Storybook. • Develop AI-assisted story structures and narratives
6		Connection →	• Listen to AI-generated story narration. • Read aloud by imitating AI voice expressions.

		Reflection	
7	Readkidz	Interest → Exploration	• Explore character and art style options. • Customize story elements using AI tools.
8		Connection → Reflection	• Apply AI voice dubbing to story characters. • Compare and select appropriate voice styles.
9	Canva	Interest → Exploration	• Explore Canva templates and design layouts. • Create animated picture book scenes.
10		Connection → Reflection	• Generate background music for picture books. • Finalize and share multimedia storybooks.

The AI-based picture book activity program, tailored to young children's developmental levels, was structured as a progressively scaffolded sequence using Book Creator, ChatGPT, Gemini Storybook, Readkidz, and Canva, with two sessions dedicated to each tool, as shown in Table 2. Children photographed and uploaded their analog drawings, used AI prompts to generate and revise images and narrative structures, and ultimately created multimedia picture books integrating visual and auditory elements using Canva's design layout and music generation features. Throughout the activities, children repeatedly engaged in peer and teacher interactions to negotiate and revise story content, and to verbally express their thoughts and emotions.

Language expression ability was assessed using the language ability test developed by Jang (1981) [11] for children aged 3 to 6 years. The instrument comprises two sub-domains: Story Embellishment Matching the Content and Story Embellishment with Coherence, with items evaluating content

consistency, narrative connectivity, and creative expression. The test was administered individually; children were asked to freely construct a story based on a picture, which was then recorded and scored by the researcher according to established scoring criteria. Cronbach's alpha reliability in the present study was .89.

Digital literacy was assessed using a measurement tool originally developed by Jeong (2013) [14] for young children based on the digital literacy framework proposed by Han et al. (2006) [15], which was subsequently modified by Seo (2024) [13] and further restructured by the present researcher to align with the objectives of this study. The instrument consists of 22 items across two sub-domains: media utilization ability (16 items) and attitudes toward media (6 items), assessing digital device use, information retrieval, multimedia utilization, and attitudes toward digital media. Cronbach's alpha reliability in the present study was .82.

Table 3. Results of Homogeneity Test for the Dependent Variable Pretest

Variable	Experimental Group M(SD)	Control Group M(SD)	t	p
Story Embellishment Matching the Content	10.35 (1.18)	10.47 (1.39)	-0.300	.766
Story Embellishment with Coherence	1.70 (0.86)	1.68 (0.89)	0.056	.955

Language Expression Ability (Total)	12.60 (1.60)	12.58 (1.80)	0.039	.969
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Table 4. Results of Homogeneity Test for Digital Literacy

Variable	Experimental Group M(SD)	Control Group M(SD)	t	p
Media Utilization Ability	35.55 (3.14)	33.95 (4.31)	1.332	.191
Attitude Toward Media	13.65 (2.11)	13.32 (2.56)	0.446	.658
Digital Literacy (Total)	49.20 (3.82)	47.26 (5.72)	1.249	.219

Prior to the main analysis, pre-test homogeneity between the experimental and comparison groups was verified for all dependent variables using independent samples t-tests. As shown in Tables 3 and 4, no statistically significant differences were found between the two groups on any of the pre-test measures, confirming group equivalence prior to the intervention.

For language expression ability, no significant differences were found between the experimental and comparison groups in Story Embellishment Matching the Content ($M = 10.35$, $SD = 1.18$ vs. $M = 10.47$, $SD = 1.39$; $t = -0.300$, $p = .766$), Story Embellishment with Coherence ($M = 1.70$, $SD = 0.86$ vs. $M = 1.68$, $SD = 0.89$; $t = 0.056$, $p = .955$), or total Language Expression Ability ($M = 12.60$, $SD = 1.60$ vs. $M = 12.58$, $SD = 1.80$; $t = 0.039$, $p = .969$).

For digital literacy, no significant differences were found in Media Utilization Ability ($M = 35.55$, $SD = 3.14$ vs. $M = 33.95$, $SD = 4.31$; $t = 1.332$, $p = .191$), Attitude Toward Media ($M = 13.65$, $SD = 2.11$ vs. $M = 13.32$, $SD = 2.56$; $t = 0.446$, $p = .658$), or total Digital Literacy ($M = 49.20$, $SD = 3.82$ vs. $M = 47.26$, $SD = 5.72$; $t = 1.249$, $p = .219$).

Data were analyzed using SPSS version 29.0. Pre-test homogeneity between the experimental and comparison groups was first verified using independent samples t-tests. To examine the effects of the AI-based picture book activity program, analysis of covariance (ANCOVA) was conducted with post-test scores as the dependent variables and pre-test scores as covariates, controlling for any baseline differences between groups.

Results

Table 5. Pre- and Post-test Results for Young Children's Language Expression Ability

Variable	Assessment	Group	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Story Embellishment Matching the Content	Pre-test	Experimental group	10.35	1.18	-0.300	.766
		Comparison group	10.47	1.39		
	Post-test	Experimental group	12.55	1.61	2.437	.020
		Comparison group	11.11	2.08		
Story Embellishment with Coherence	Pre-test	Experimental group	1.70	0.86	0.056	.955
		Comparison group	1.68	0.89		

Language Expression Ability (Total)	Post-test	Experimental group	3.00	1.03	2.002	.053
		Comparison group	2.32	1.11		
	Pre-test	Experimental group	12.60	1.60	0.039	.969
		Comparison group	12.58	1.80		
	Post-test	Experimental group	17.10	1.62	4.648	<.001
		Comparison group	14.53	1.84		

Table 6. ANCOVA Results for Young Children's Language Expression Ability

Variable	Source	SS	df	MS	F	p
Story Embellishment Matching the Content	Covariate	9.02	1	9.02	2.73	.107
	Group	19.07	1	19.07	5.77	.022
	Error	118.99	36	3.31		
	Total	147.08	38			
Story Embellishment with Coherence	Covariate	0.88	1	0.88	0.77	.385
	Group	4.60	1	4.60	4.02	.053
	Error	41.18	36	1.14		
	Total	46.67	38			
Language Expression Ability (Total)	Covariate	1.45	1	1.45	0.48	.494
	Group	64.67	1	64.67	21.36	<.001
	Error	108.97	36	3.03		
	Total	175.08	38			

The pre- and post-test results for language expression ability are presented in Table 5. Prior to the intervention, no significant differences were found between the experimental and comparison groups on any sub-domain, confirming group homogeneity. Following the intervention, the experimental group showed higher post-test scores than the comparison group across all variables.

The results of the ANCOVA controlling for pre-test scores are presented in Table 6. For Story Embellishment Matching the Content, a statistically significant group difference was found ($F = 5.77$, $p = .022$), with the experimental group ($M = 12.55$, $SD = 1.61$) scoring higher than the

comparison group ($M = 11.11$, $SD = 2.08$). For Story Embellishment with Coherence, the group difference approached but did not reach statistical significance ($F = 4.02$, $p = .053$), with the experimental group ($M = 3.00$, $SD = 1.03$) scoring higher than the comparison group ($M = 2.32$, $SD = 1.11$). For total language expression ability, a highly significant group difference was found ($F = 21.36$, $p < .001$), with the experimental group ($M = 17.10$, $SD = 1.62$) scoring higher than the comparison group ($M = 14.53$, $SD = 1.84$). These findings indicate that participation in the AI-based picture book activity program had a significant positive effect on young children's language expression ability.

Table 7. Pre- and Post-test Results for Young Children's Digital Literacy

Variable	Assessment	Group	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Media use competency	Pre-test	Experimental group	35.55	3.14	1.332	.191
		Comparison group	33.95	4.31		
	Post-test	Experimental group	41.20	3.93	5.589	<.001
		Comparison group	34.53	3.50		
Attitudes toward media	Pre-test	Experimental group	13.65	2.11	0.446	.658
		Comparison group	13.32	2.56		
	Post-test	Experimental group	15.10	2.13	1.046	.302
		Comparison group	14.37	2.24		
Digital literacy (Total)	Pre-test	Experimental group	49.20	3.82	1.249	.219
		Comparison group	47.26	5.72		
	Post-test	Experimental group	56.30	3.50	6.556	<.001
		Comparison group	48.89	3.56		

Table 8. ANCOVA Results for Digital Literacy

Variable	Source	SS	df	MS	F	p
Media use competency	Covariate	71.35	1	71.35	5.17	.029
	Group	379.30	1	379.30	27.46	<.001
	Error	497.25	36	13.81		
	Total	947.90	38			
Attitudes toward media	Covariate	1.57	1	1.57	0.32	.574
	Group	4.83	1	4.83	0.99	.326
	Error	175.04	36	4.86		
	Total	181.44	38			
Digital literacy (Total)	Covariate	143.51	1	143.51	12.79	.001
	Group	446.80	1	446.80	39.81	<.001
	Error	403.99	36	11.22		
	Total	994.31	38			

The pre- and post-test results for digital literacy are presented in Table 7. Prior to the intervention, no

significant differences were found between the experimental and comparison groups on any sub-

domain, confirming group homogeneity. Following the intervention, the experimental group showed higher post-test scores than the comparison group across all variables.

The results of the ANCOVA controlling for pre-test scores are presented in Table 8. For Media Use Competency, a highly significant group difference was found ($F = 27.46$, $p < .001$), with the experimental group ($M = 41.20$, $SD = 3.93$) scoring higher than the comparison group ($M = 34.53$, $SD = 3.50$). For Attitudes Toward Media, no statistically significant group difference was found ($F = 0.99$, $p = .302$), with the experimental group ($M = 15.10$, $SD = 2.13$) scoring higher than the comparison group ($M = 14.37$, $SD = 2.24$). For total Digital Literacy, a highly significant group difference was found ($F = 39.81$, $p < .001$), with the experimental group ($M = 56.30$, $SD = 3.50$) scoring higher than the comparison group ($M = 48.89$, $SD = 3.56$). These results suggest that the AI-based picture book activity program was particularly effective in enhancing young children's media use competency and overall digital literacy, though its effect on attitudes toward media was not statistically significant.

Discussion

This study examined the effects of an AI-based picture book activity program on five-year-old children's language expression ability and digital literacy. The findings suggest that AI-supported multimodal storytelling activities may effectively support certain aspects of young children's language expression ability and digital literacy within developmentally appropriate and play-based learning environments.

First, the findings related to language expression ability suggest that AI-supported storytelling activities can promote young children's language and narrative development [6]. Previous studies have reported that AI-mediated storytelling environments improve children's story comprehension, oral expression, and narrative participation through interactive dialogue and multimodal engagement. Recent reviews have also suggested that generative AI-based educational activities positively influence young children's

linguistic and creative development when implemented within developmentally appropriate learning environments [10,17].

In the present study, children in the experimental group demonstrated significantly higher performance in story construction from pictures and overall language expression ability than those in the comparison group. These findings suggest that the process of generating, revising, and discussing stories through AI prompts may support children's linguistic production and narrative organization. Although the experimental group also showed higher scores in connected story construction, the group difference did not reach statistical significance. This finding may indicate that connected narrative organization requires longer-term and repeated language interaction experiences beyond short-term intervention.

The findings can also be interpreted from the perspective of scaffolding and dialogic interaction. Previous studies have emphasized that AI technologies can support children's narrative participation by providing adaptive prompts, responsive feedback, and interactive questioning [16]. In the current study, children repeatedly reconstructed stories, discussed ideas with peers and teachers, and reflected on story content while creating multimedia picture books. Such iterative interaction may have encouraged children to elaborate their ideas, organize their thoughts coherently, and actively express their emotions and perspectives.

Second, the findings related to digital literacy indicate that AI-supported picture book activities were particularly effective in enhancing media use competency and overall digital literacy. Previous research has reported that generative AI-based activities increase children's engagement, participation, and interest in learning activities by providing multimodal and interactive experiences [1,10]. Similarly, the children in the present study actively participated in photographing drawings, generating AI images, discussing story ideas, and producing multimedia storybooks using digital tools. These experiences may have enhanced not

only their technical competency in using digital media but also their confidence toward technology-mediated learning.

The present findings also support previous studies suggesting that generative AI-based picture book creation activities can enhance creativity, AI literacy, and digital media competency [5]. In particular, the multimodal nature of AI-supported storytelling appears to provide young children with opportunities to integrate language, visual imagery, imagination, and emotional expression simultaneously. Such integration may explain the significant improvement observed in overall language expression ability and digital literacy.

However, no statistically significant group difference was found for attitudes toward media. This finding may suggest that attitudes toward digital media are influenced not only by short-term educational experiences but also by broader environmental and familial factors. Future studies may therefore need to examine longer-term interventions and home-media interaction contexts.

Third, the progressive scaffolding structure of this program demonstrates that AI-based storytelling activities functioned not as replacements for traditional picture book experiences but as complementary tools that expanded children's creative and communicative opportunities. Previous systematic reviews have emphasized that the educational effectiveness of generative AI in early childhood education depends heavily on developmentally appropriate design and active teacher mediation, and that AI-supported storytelling is most effectively implemented through socially interactive learning experiences rather than replacing human interaction [10,16].

In the present study, children's experiences progressed from analog drawing and photographing to AI-supported image generation, story reconstruction, and multimedia picture book production. This balanced integration of analog and digital experiences may have helped children maintain meaningful engagement while also expanding opportunities for expression and imagination. These findings align with previous arguments that AI technologies in early childhood

education should support play-based, interactive, and socially meaningful learning experiences rather than isolated technology use [10].

Fourth, the findings highlight the importance of teacher mediation and professional competency in implementing AI-based storytelling activities effectively. Previous studies have reported that teachers' AI literacy, technological competency, and instructional mediation significantly influence the quality of AI integration in early childhood classrooms [1,10]. Furthermore, several studies have identified concerns regarding inappropriate AI-generated content, algorithmic limitations, and developmental mismatches between AI interaction and children's cognitive levels [10,16]. Therefore, teachers should critically evaluate AI-generated materials and intentionally design activities that prioritize children's developmental appropriateness, safety, and meaningful participation.

The relatively large effect sizes observed in this study may partially reflect the novelty and motivational characteristics of AI-based multimodal storytelling activities for young children.

The present study has several limitations. First, the participants were limited to 39 five-year-old children from two kindergartens located in S city, Jeollanam-do, which restricts the generalizability of the findings. Second, the intervention was conducted over only 10 sessions, making it difficult to confirm the long-term effects of AI-supported storytelling activities. Third, although the study focused on language expression ability and digital literacy, other developmental domains such as creativity, collaboration, and social-emotional development were not directly examined.

Future research should therefore expand the sample across diverse regions and age groups and employ longitudinal designs to examine the sustained effects of AI-based storytelling activities. In addition, future studies should investigate how different types of AI interaction, teacher mediation strategies, and multimodal storytelling experiences influence children's language, creativity, social interaction, and emotional development over time.

Overall, the present study suggests that generative AI can serve as a meaningful educational tool for supporting storytelling, communication, and digital literacy in early childhood education when implemented within developmentally appropriate, play-based, and teacher-mediated learning environments.

Conclusion

This study examined the effects of an AI-based picture book activity program on children's language expression ability and digital literacy. The findings indicated significant differences between the groups in picture-based story construction, media use competency, and overall language expression ability and digital literacy, while demonstrating a marginal positive trend in connected story construction.

The results suggest that generative AI can serve as a meaningful educational tool when integrated into developmentally appropriate, play-based, and teacher-mediated learning environments. Activities combining analog drawing, peer interaction, and AI-supported storytelling provided opportunities for multimodal expression and digital media use.

This study also highlights the importance of teachers' scaffolding and AI literacy in effectively implementing AI-based activities in early childhood classrooms. Future research should investigate the long-term effects of AI-based storytelling activities across diverse age groups and educational contexts and explore their influence on broader developmental domains, including creativity and social-emotional development.

Reference

- Su J, Ng DTK, Chu SKW (2023) Artificial intelligence (AI) literacy in early childhood education: The challenges and opportunities. *Comput Educ Artif Intell*, **4**: 100124.
- Ministry of Education, Ministry of Health and Welfare (2019) *2019 revised Nuri curriculum guidebook*. Sejong: Ministry of Education.
- van der Wilt F, Smits-van der Nat M, van der Veen C (2022) Shared book reading in early childhood education: Effect of two approaches on children's language competence, story comprehension, and causal reasoning. *J Res Child Educ*, **36(4)**: 592-610.
- Dickinson DK, Tabors PO (2001) *Beginning literacy with language: Young children learning at home and school*. Baltimore (MD): Paul H. Brookes Publishing.
- Park ES (2025) Educational implications of picture book creation activities using generative AI: A new approach to early childhood literature education. *J Korea Open Assoc Early Child Educ*, **30(2)**: 307-328.
- Jegede OO (2025) Effectiveness of technology-enhanced language development activities in early childhood language learning compared to traditional methods. In: *Preschool Education in the 21st Century – Innovative Insights, Strategies, and Practical Approaches*.
- Nikolopoulou K (2025) Child-centered integration of generative AI in early learning: Balancing promises and challenges. *AI, Brain and Child*, **1**: 21.
- Maureen IY, van der Meij H, de Jong T (2020) Enhancing storytelling activities to support early digital literacy development in early childhood education. *Int J Early Child*, **52(1)**: 55-76.
- Al-Jarf R (2021) Differential effects of the iPad on first and second language acquisition by Saudi children during the COVID-19 pandemic. *eLearning Softw Educ Conf Proc*, **17(1)**: 95-104.
- Lee J (2025) A scoping review of artificial intelligence and child development in early childhood education. *Humanit Soc Sci Contents Res*, **3(2)**: 19-34.
- Jang YA (1981) *Language ability assessment tool for children aged 3 to 5 years*. Seoul: Kyoyookbook.
- Buckingham D (2015) Defining digital literacy: What do young people need to know about digital media? *Nordic J Digit Lit*, **10**: 21-35.
- Seo DH (2024) *Validation and revision of a digital literacy scale for young children*. Seongnam: Gachon University.

- Jeong BM (2013) *Development of a digital literacy assessment instrument for young children*. Seoul: Ewha Womans University.
- Han JS, Ko BS, Oh JS, Lim HJ, Jeon JS (2006) Development of a digital literacy index for activating knowledge and information competency in the 21st century. Seoul: Korea Education and Research Information Service.
- Sun Y, Chen J, Yao B, Liu J, Wang D, Ma X, et al (2024) Exploring parent's needs for children-centered AI to support preschoolers' interactive storytelling and reading activities. *Proc ACM Hum Comput Interact*, **8**(2): 496.
- Zhang Y, Halili SH, Zainuddin Z (2026) Applications of generative AI in early childhood education: A systematic review. *Eurasia J Math Sci Technol Educ*, **22**(3): em2793.