Development of communication skills of older preschool children through information technology

Yerkebayeva Saule a* Kazakh National Pedagogical University Named After Abai, Department Chair of Preschool Education and Social Pedagogy, Dostyk Avenue 13, 050010 Almaty, Kazakhstan https://orcid.org/0000-0002-7568-9258

Jetpisbayeva Sarsengul b South Kazakhstan University Named M. Auezov, Theory and Methodology of Preschool and Primary Education Department, Faculty of History and Pedagogy, Tauke Khan Avenue 5, 160012 Shymkent, Kazakhstan https://orcid.org/0000-0001-9868-5957

Kyyakbayeva Ulbossyn c Kazakh National Pedagogical University Named After Abai, Department of Preschool Education and Social Pedagogy, Dostyk Avenue 13, 050010 Almaty, Kazakhstan https://orcid.org/0000-0001-5025-7646

Nurgaliyeva Dolores d, Kazakh National Pedagogical University Named After Abai, Department of Preschool Education and Social Pedagogy, Dostyk Avenue 13, 050010 Almaty, Kazakhstan **https://orcid.org/0000-0003-4027-500**

Abilbakieva Galiya e Kazakh National Pedagogical University named After Abai, Department of Preschool Education and Social Pedagogy, Dostyk Avenue 13, 050010 Almaty, The Republic of Kazakhstan https://orcid.org/0000-0003-4739-1611

Shalkharbekova Nazerke f Anti-stress Center, Shymkent, Kazakhstan https://orcid.org/0000-0001-5668-469X

Abstract

The purpose of this research is to get the opinions of preschool teachers to improve the communication skills of preschool children through information technology. The phenomenological design, one of the qualitative research approaches, was used in the research. The participant group of the research consists of 62 preschool teachers who teach in various preschool educational institutions in the city of Nursultan, Kazakhstan. Research data were collected with a semi-structured interview form. As a result of the research, it has been determined that the majority of preschool teachers have a very high tendency to use information technologies. On the other hand, it has been determined that the majority of preschool teachers participating in the research have a medium level of competence in using information technologies. The majority of preschool teachers participating in the research stated that they sometimes use information technologies to develop children's communication skills. Preschool teachers participating in the research offered suggestions for teachers and schools about using information technologies in the development of children's communication skills. The majority of teachers suggested the creation of information technology-supported lesson programmes, the design of group projects and the creation of educational games. As for schools, the majority of teachers suggested creating classrooms with technological equipment in schools.

Keywords: Communication skills of preschool children, information technologies, teacher opinions;

* *ADDRESS FOR CORRESPONDENCE: Yerkebayeva Saule, Department Chair of Preschool Education and Social Pedagogy, Kazakh National Pedagogical University named after Abai, Dostyk Avenue 13, 050010 Almaty, The Republic of Kazakhstan.
E-mail address: Saule877@mail.ru

1. Introduction

The use of educational technologies in preschool education environments is extremely important in terms of increasing the quality of the education provided and maintaining the aforementioned technologies by recognising and integrating them into their lives in this first education period in which the child is prepared for life. In terms of the effects of technology use on individuals to improve their social skills, the acquisition of these skills by children in preschool education increases the current importance. Today, the basic question of education is not whether technology can be used or not, but how to use it most effectively and efficiently without harming children.

1.1. Theoretical and conceptual framework

Preschool education is the educational process that includes all the experiences of the child, i.e., from birth to primary school age. This period, which covers the age of 6, is an important period in which the child's physical, mental, emotional and social development is rapid, his personality structure begins to take shape and basic habits are acquired. Preschool education institutions are important in many ways as they contribute positively to the social and cognitive development of children, prepare them better for primary education, support them, influence the level of success of children in school and life and increase the quality of education (Lucci, 2004).

Social skills, which include behaviours aimed at providing social interaction, support children to establish and maintain positive social relationships with their peers, teachers and family, facilitating peer acceptance and social adaptation (Gresham, Sugai, & Horner, 2001). The realisation of social interaction in a healthy way is possible with the communication skills that children have acquired. Communication is a systemic process in which people interact with symbols to create and interpret meanings (Wood, 2009). In another definition, communication is expressed as a conscious or unconscious, deliberate or unintentional process in which feelings and thoughts are expressed as verbal and/or non-verbal messages that are sent, received and understood (Berko, Aitken, & Wolvin, 2010). Communication skills include many different features. Opinions differ on what skills it includes. In some studies, it is said that communication skills are messages containing sound-based movements, while in others sensitivity to verbal and non-verbal messages is considered a form of effective listening and reaction. In summary, although communication skills include some sub-skills, it is a verbal or non-verbal form of effective listening and reaction (Nelson-Jones, 2002).

Information and communication technologies have become an indispensable part of our lives. Information and communication technologies are defined as everything that enables acquiring information, communicating and having an impact on the environment by using technological tools. In today's digital age and information society, information and communication technologies have an important place in the field of education, as well as in all areas of our lives. The purpose of using ICT in the field of education is to create new educational environments by creating new teaching methods and to improve the quality and quality of education by improving the traditional educator–student relationship (Liu, Toki, & Pange, 2014; Zimmerman, Posternak, Chelminski, & Solomon, 2004).

1.2. Related research

When the literature is examined, it is seen that various studies have been carried out on the use of information technologies by children in the preschool period. In some of these studies, it is seen that the use of information technologies has addressed the impact on children's communication skills (Khasawneh & Al-Awidi, 2008). In a study by Berson and Berson (2005) on family guidance in technology use, it was seen that families tend to control their children's use of technology and parents do not leave their children unattended in the face of ICT and they choose the programmes and games that their children will use. In another study on the use of technology in education, it was suggested that children who use ICT are more successful in their intellectual development, knowledge

construction, problem-solving skills and language skills than children who do not use ICT (Clements & Sarama, 2005).

In some of the studies conducted in the field, it is seen that studies are carried out to improve the communication skills of preschool children (Hobjila, 2014; Martz, 2017). Lynne Lane, Stanton-Chapman, Roorbach Jamison, and Phillips (2007) examined the views of parents and teachers on the social skills of preschool children. In the study, they aimed to examine which social skills teachers and parents find important for children, which skills they consider important to be closer to each other and which ones they distance themselves from. The families of 124 children aged between 2 and 6 years and 35 teachers participated in the study.

Hinkley, Timperio, Salmon, and Hesketh (2017) examined the effects of participation in physical activities and the use of social media on social development in children in the preschool period and the first years of primary school. 108 children in the 6–8 age group were included in the study. At the end of the study, it was reported that the use of social media in children positively affected interpersonal relationships, stress management and emotional structure. In the same study, it was stated that participation in physical activity did not have a significant effect on psycho-social development.

Hosokawa, Katsura, and Shizawa (2017) examined the effects of maternal attitude on social development in preschool children, and 1341 Japanese children in the 4–5 age group were included in the study. At the end of the study, it was reported that there was a significant relationship between the mother's attitude and assertiveness, cooperation and self-control skills in preschool children.

Hu et al. (2017) examined the effects of teacher–student interaction on cognitive and social development in preschool children. A total of 589 students studying in 59 preschool education classes were included in the study. At the end of the study, it was reported that teacher–student interaction affected students' cognitive development, but did not have a significant effect on social development.

1.3. Purpose of the research

The purpose of this research is to get the opinions of preschool teachers to improve the communication skills of preschool children through information technology. The sub-objectives developed following the purpose of the research are as follows:

1. What are the views of preschool teachers about their tendency to use information technologies?

2. What are the opinions of preschool teachers about their competencies in using information technologies?

3. What are the tendencies of preschool teachers to use information technologies in the development of children's communication skills?

4. What are the suggestions of preschool teachers about using information technologies in the development of children's communication skills?

2. Method and materials

In this section, information about the method used in the research, data collection tools, the study group of the research and the analysis of the data are given.

2.1. Research method

The phenomenological design, one of the qualitative research approaches, was used in the research. Qualitative research aims to make sense of human experiences with an explanatory and interpretive approach to explain the basic characteristics of individual and social events and phenomena (Mertens, 2014). The phenomenological method, which is frequently used in qualitative research, focuses on

human experiences and allows the individual to reflect on his/her own perception and life towards the phenomenon or events that are the subject of research (Zou, Sunindijo, & Dainty, 2014). In the direction of this study, the opinions of preschool teachers were taken following the phenomenological pattern to improve the communication skills of preschool children through information technology.

2.2. Participants

The participant group of the research consists of 62 preschool teachers who teach in various preschool education institutions in the city of Nursultan, Kazakhstan. The participant group of the research was formed voluntarily. Preschool teachers participating in the research continue to work actively in the 2021–2022 academic year. The characteristics of the participant group are given in Table 1.

Table 1. Experience and gender distribution of preschool teachers

Experience	Gender		Sum
	Female	Male	
1–5 years	3	8	11
6–10 years	12	5	17
11–15 years	23	2	25
16 years and above	7	2	9
Sum	45	17	62

In Table 1, the professional experience and gender distribution of the preschool teachers participating in the research are given. 11 teachers participating in the research have 1–5 years, 17 have 6–10 years, 25 have 11–15 years and 9 have 16 years or more of professional experience. Of the preschool teachers participating in the study, 45 were female and 17 were male. A total of 62 preschool teachers participated in the study.

2.3. Data collection tools

Research data were collected with a semi-structured interview form. A semi-structured interview form was developed by the researchers to get the opinions of preschool teachers on the development of preschool children's communication skills through information technology. During the creation phase of the semi-structured interview form, the literature review was conducted and the opinions of two experts were taken. The semi-structured interview form created was applied to three preschool teachers and their opinions on whether the questions were understandable or not were received. The final version of the form was created in line with the opinions of the experts and the teachers who applied the draft semi-structured interview form. The semi-structured interview form used in the research is shown in Appendix.

2.4. Data collection process

To collect the research data, face-to-face interviews were conducted with the preschool teachers who participated in the research. The interviews were conducted in a quiet environment in the school where the researcher and the preschool teacher could conduct the interviews. Permission was requested from the teachers to record the interviews. The questions in the semi-structured interview form were asked to the preschool teachers in the same order and without any direction. The interviews with the teachers lasted approximately 30–35 minutes. The process of completing all teacher interviews and collecting research data took 1 month.

2.5. Data collection analysis

The stages of the content analysis method were applied for the analysis of the research data. The content analysis method, which is one of the qualitative research methods, is one of the most frequently used methods among qualitative data analysis types and is mainly used in the analysis of written and visual data. To classify the signs and reveal which judgments these signs contain, content analysis allows the judgments of the researcher to be evaluated as a scientific report in light of clearly formulated rules (Kocak & Arun, 2006). In this context, the answers given by the preschool teachers to the questions in the semi-structured interview form were translated into writing by listening to the audio recordings. The answers of the teachers were categorised and compared separately by two researchers. The answers to the closed-ended questions in the semi-structured interview form were converted into findings by frequency and percentage calculations. The answers of the teachers to the open-ended questions in the semi-structured interview form were categorised and compared by the researchers, and they were divided into themes by reaching a consensus. The answers of the teachers divided into categories and themes are given in the findings in the form of frequency and percentage tables. In addition, the answers given by the teachers to the open-ended questions were shared using the coding method in the research, keeping their personal information confidential.

3. Results

In Table 2, the opinions of the preschool teachers participating in the research on their tendencies to use information technologies are given.

Table 2. Preschool teachers' tendencies to use information technologies

Category	Strongly agree		Agree		I'm undecided		Disagree		Strongly disagree		Sum	
	F	%	F	%	F	%	F	%	F	%	F	%
It is important to have the ability to use information technologies.	47	75.8	9	14.5	1	1.6	2	3.2	3	4.8	62	100
It is important to follow the innovations in information technologies.	41	66.1	13	21	2	3.2	3	4.8	3	4.8	62	100
I support the use of information technologies in education	44	70.9	11	17.7	2	3.2	3	4.8	2	3.2	62	100

In Table 2, preschool teachers' tendencies to use information technologies are categorised. The category 'It is important to have the ability to use communication technologies' was rated as follows: 75.8% of the preschool teachers answered strongly agree, 14.5% answered agree, 1.6% answered undecided, 3.2% answered disagree and 4.8% answered strongly disagree. The category 'It is important to follow the innovations in communication technologies' was rated as follows: 66.1% of the preschool teachers answered strongly agree, 21% answered agree, 3.2% answered undecided, 4.8% answered disagree and 4.8% answered strongly disagree. The category 'I support the use of communication technologies in education' was rated as follows: 70.9% of preschool teachers answered strongly agree, 17.7% answered agree, 3.2% answered undecided, 4.8% answered disagree and 3.2% answered strongly disagree.

In Table 3, the opinions of the preschool teachers participating in the research on their competence in using information technologies are given.

Table 3. Preschool teachers' competencies in using information technologies

Category	Very high		High		Mid		Low		Very low		Sum	
	F	%	F	%	F	%	F	%	F	%	F	%
I have the ability to use information technology	12	19.3	7	11.2	36	58	5	8	2	3.2	62	100
I follow the innovations in information technologies	5	8	14	22.5	38	61.2	6	9.6	3	4.8	62	100
I use information technologies in education	6	9.6	8	12.9	44	70.9	3	4.8	1	1.6	62	100

In Table 3, the competencies of preschool teachers participating in the research in using information technologies are categorised. The category 'I have the ability to use communication technologies' was rated as follows: 19.3% of the preschool teachers gave the answer very high, 11.2% answered high, 58% answered medium, 8% answered low and 3.2% answered very low. The category 'I follow the innovations in communication technologies' was rated as follows: 8% of the preschool teachers answered very high, 22.5% answered high, 61.2% answered medium, 9.6% answered low and 4.8% answered very low. The category 'I use information technologies in education' was rated as follows: 9.6% gave the answer very high, 12.9% answered high, 70.9% answered medium, 4.8% answered low and 1.6% answered very low.

In Table 4, the views of preschool teachers participating in the research on using information technologies in the development of children's communication skills are evaluated.

Table 4. Preschool teachers' views on using information technologies to develop children's communication skills

Category	Always		Often		Sometimes		Rarely		Never		Sum	
	F	%	F	%	F	%	F	%	F	%	F	%
I use information technologies to develop children's communication skills	6	9.6	16	25.8	35	56.4	4	6.4	1	1.6	62	100

In Table 4, the views of preschool teachers participating in the research on using information technologies in the development of children's communication skills are categorised. 9.6% of the preschool teachers answered always, 25.8% answered often, 56.4% answered sometimes, 6.4% answered rarely and 1.6% answered never.

In Table 5, suggestions for preschool teachers participating in the research to use information technologies in the development of children's communication skills are given.

Table 5. Preschool teachers' suggestions for using information technologies to develop children's communication skills

Category	Theme	F	%
Recommendations for teachers	Creating information technology-supported lesson programmes	58	93.5
	Designing IT-supported group projects	41	66.1
	Creating educational games supported by information technologies	33	53.2
	Making creative drama applications supported by information technologies	19	30.6
	To equip students with the ability to use information technologies	11	17.7
	Matching the applications made with information technology with course outcomes	5	8
Recommendations for institutions	Creating classrooms with technological equipment in schools	56	90
	Providing information technology in-service training to teachers	29	46,7
	Supporting teachers about possible altitudinal problems	17	27.4

In Table 5, the suggestions of the preschool teachers participating in the research regarding the use of information technologies in the development of children's communication skills are categorised. Preschool teachers' suggestions are divided into two categories as suggestions for teachers and institutions. 93.5% of the teachers want to create information technology-supported lesson programmes, 66.1% want to design information technology-supported group projects, 53.2% want to create information technology-supported educational games, 17.7% want to equip children to use information technologies and 8% of them presented the applications made with information technologies to match the course outcomes as suggestions for teachers. 90% of the teachers offered to create classrooms with technological equipment at school, 46.7% offered to provide information technology in-service training to teachers and 27.4% offered to support teachers about possible infrastructure problems as suggestions for institutions.

The suggestions of some preschool teachers participating in the research on using information technologies in the development of children's communication skills are as follows:

Teacher 6: *Actually, it would be very beneficial for students if we created the lessons we prepared using information technologies. However, in order for us to do this, we need the support of the school. I think that there is not enough equipment in the classrooms for teachers to provide this.*

Teacher 11: *First of all, students should be given information technology lessons. For this, schools need to organise in-service courses on information technologies for teachers. Thus, teachers can prepare course content using information technologies.*

Teacher 36: *Students should be made to play games using information technologies. I think that creative drama activities will have a significant impact on the development of students' communication skills. Of course, suitable classroom environments for these must be prepared by school principals.*

Teacher 58: *I believe that teaching technology-based course content in technology-supported classrooms will improve students' communication skills. For the problems that may arise, the school should always be on the side that produces solutions.*

4. Discussion

It has been determined that the majority of preschool teachers participating in the research have a very high tendency to use information technology in the categories of the importance of having the ability to use information technologies, the importance of following the innovations in information technologies and supporting the use of information technologies in education. Korkmaz (2020) determined the digital literacy proficiency perceptions of classroom teachers and examined them comparatively according to certain variables. As a result of the research, it was determined that the teachers' level of using information technologies was very high. On the other hand, it was determined that the majority of preschool teachers participating in the research have a medium level of competence in using information technologies in the categories of having the ability to use information technologies, following innovations in information technologies and using information technologies in education. The majority of preschool teachers participating in the research stated that they sometimes use information technologies to develop children's communication skills. Preschool teachers participating in the research offered suggestions for teachers and schools about using information technologies in the development of children's communication skills. The majority of teachers suggested the creation of information technology-supported lesson programmes, the design of group projects and the creation of educational games. As for schools, the majority of teachers suggested creating classrooms with technological equipment in schools. Klein, Nir-Gal, and Darom (2000) studied the cognitive performance of children using computers in kindergarten with teacher intervention, and they worked with children aged 5–6 years. According to the results obtained in the study, it was determined that the children who received teacher support displayed higher cognitive performance in computer activities and the use of information technologies had a positive effect on children.

  When the studies in the field are examined, it is seen that there are studies where the use of information technologies in the development of the communication skills of preschool children is positive by the teachers (Nikolopoulou & Gialamas, 2015; Wang & Hoot, 2006). Wainwright and Linebarger (2006) revealed in their research that preschool teachers are willing to use information technologies, but the rate of using information technologies is not at the desired level due to the limited technological opportunities in schools. Roblyer and Roblyer (2006) evaluated the contribution of information technologies to the educational process in their studies. Based on the research findings, it has been concluded that technological tools contribute to the learning–teaching processes if information technologies are used correctly. Blackwell, Lauricella, Wartella, Robb, and Schomburg (2013), 1329 0–4-year-olds and 38 teachers participated in the research examining the relationship between technology adoption and use in early childhood, external barriers and teacher attitudes. According to the results obtained in the research, it was determined that the positive attitudes of teachers towards the use of technology in education significantly affect their use of technology.

5. Conclusion

In today's education approach, where the importance of education and training is increasing day by day and the use of new technologies in the educational environment is widespread, the use of information technologies has become an important application area in the development of communication skills of children in preschool education. For this reason, in this study, the opinions of preschool teachers were taken to improve the communication skills of preschool children through information technology. As a result of the research, it has been determined that the majority of preschool teachers have a very high tendency to use information technologies. On the other hand, it has been determined that the majority of preschool teachers participating in the research have a medium level of competence in using information technologies. The majority of preschool teachers participating in the research stated that they sometimes use information technologies to develop children's communication skills. Preschool teachers participating in the research offered suggestions for teachers and schools about using information technologies in the development of children's communication skills. The majority of teachers suggested the creation of information technology-

supported lesson programmes, the design of group projects and the creation of educational games. As for schools, the majority of teachers suggested creating classrooms with technological equipment in schools.

6. Recommendations

In line with the findings obtained from the research, the following recommendations are developed:

1. While teachers have a high tendency to use information technologies, they stated that they sometimes use information technologies in the educational environment. In this direction, schools have to identify and eliminate the obstacles preventing teachers from using information technologies in the educational environment.

2. It should be ensured that teachers are informed about the use of information technologies and practices aimed at increasing children's communication skills through in-service training seminars given at schools and seminars to be given at regular intervals.

3. To popularise the use of information technologies in education by preschool teachers, it is necessary to gain teacher competencies regarding the use of information technologies in teacher training programmes.

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Appendix

Semi-structured interview form

Demographic characteristics of teachers				
Experience:	1–5 years ( )	6–10 years ( )	11–15 years ( )	16 years and above ( )
Gender:	Female ( )		Male ( )	
Questions on communication skills and information technology				
Opinions of preschool teachers on their tendencies to use information technologies				

Evaluate the following items in one of the options 'Strongly agree', 'Agree', 'I am undecided', 'Disagree' and 'Strongly disagree'.	Strongly agree	Agree	I am undecided	Disagree	Strongly disagree
It is important to have the ability to use information technologies					

It is important to follow the innovations in information technologies					
I support the use of information technologies in education					

Opinions of preschool teachers on their competence in using information technologies

Evaluate the following items from 'Very high', 'High', 'Medium', 'Low' and 'Very low'.	Very high	High	Medium	Low	Very low
I have the ability to use information technology					
I follow the innovations in information technologies					
I use information technologies in education					

Opinions of preschool teachers on using information technologies in the development of children's communication skills

Evaluate the following items from 'Always', 'Often', 'Sometimes', 'Rarely' and 'Never'.	Always	Often	Sometimes	Rarely	Never
I use information technologies to develop children's communication skills.					

4. What are your suggestions for using information technologies in the development of children's communication skills?