

Preparation of preschool education specialists for innovative activities in preschool organisations

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Abstract

The purpose of this research is to get the opinions of preschool teachers in order to prepare preschool teachers for innovative activities in preschool organisations. In this study, the in-depth interview technique, one of the qualitative research techniques, was used. The study group of the research consists of 33 volunteers working as preschool teachers in various educational institutions in the city of Shymkent, Kazakhstan. Research data were collected through a form consisting of semi-structured interview questions prepared by the researchers. As a result, it is seen that the majority of teachers define innovation as a compulsory need, renewal of oneself and an indicator of development. The majority of preschool teachers participating in the research describe themselves as moderately innovative. In parallel with this, teachers stated that they take part in innovative activities in preschool organisations. Teachers' suggestions for the development of innovative approaches are to be open to new ideas, to follow and try new methods and practices, to use technology in the educational environment, to gain creative thinking skills and to try new ways of problem-solving. In addition, teachers stated that institutions and the ministry should aim to develop teachers' innovative attitudes through various practices. These results reveal that institutions, the ministry and the state have duties in order to develop teachers' innovative attitudes and to enable them to take a more active role in innovative activities in preschool organisations.

Keywords: Innovation, innovative activities, preschool organisations, preschool teachers;

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1. Introduction

Qualities expected from individuals in the 21st century are categorised as providing continuity in learning; having the ability to access, use, analyse and construct information in different disciplines; develop solutions to the problems they encounter; and be open to new and different ideas and be willing to learn (Xu & Chen, 2010). It can be said that these individuals are generally individuals who can access information under all conditions, have lifelong learning habits, can solve problems and produce innovations; in short, exhibit innovative features. This situation reveals the fact that the concept of innovation is an important feature that should be gained in order to create an information society.

1.1. Theoretical and conceptual framework

Since change is an important part of today's societies, our lives are also shaped with this change. An idea, practice or object can be perceived as new in different samples and can be qualified as a trigger for change. The concept of innovation is defined by researchers as the willingness to change, the willingness to try different or new things and even the degree of adopting change. The interdisciplinary nature of innovation encompasses psychology, religion, education, sociology, organisational behaviour, economics and business. Along with globalisation, it has taken its place among the most studied topics in recent years (Jin, Hewitt-Dundas, & Thompson, 2004).

The concept of innovation is defined as an idea, practice or object perceived as new by the individual or society. The concept of innovation, which examines people's reactions to innovations, has been explained by many researchers and has been studied in different contexts, such as communication, economy, education and health (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). The use of high-tech, new knowledge, the introduction of a new product or service is understood as innovation. Thus, the understanding of innovation includes the characteristics of those who adopt this situation and their reactions to innovations (Goldsmith & Foxall, 2003). Being willing to change, one of the features that creates an innovative understanding in individuals, is among the gains that teacher training institutions want to add to the students they will train (Van Braak, 2001).

Rogers (2002) defines innovativeness as a personality trait that indicates how fast an individual is in adopting an innovation relative to others in the social system. This innovation refers to a specific change and can be an idea, method or technology. According to Rogers, innovation is ideas, practices or objects that are newly accepted by an individual, group or society. A teacher's individual innovation plays a key role in the extent to which he can adapt himself to changes and innovations. Innovative teachers follow current developments more closely, use these developments in accordance with their professional development and by starting to use technology earlier in the classroom environment they become role models for others. An innovative teacher is a person who can improve himself in the field, organise the lesson environment according to developing teaching-learning strategies and try and research different and new ways in presenting information (Wang, Sun, & Li, 2019).

1.2. Related research

In his study, Moody (2009) evaluated how innovative teachers with 21st-century equipment made a difference in their teaching practices and the factors affecting this situation. As a result, it is revealed that upgrading education with the help of technology increases teachers' understanding of innovation and they are more entitled to 21st-century equipment. In their study, Loogma, Kruusvall, & Umarik. (2011) evaluated the innovativeness categories based on teachers' adoption of online learning in Estonia. As a result, it was revealed that there is a significant relationship between the use of e-learning tools and the innovativeness categories of teachers.

Luekitinan (2014) discussed the relationship between organisational culture and individual innovation in his research. As a result, it has been revealed that organisational culture has an effect on individuals' perception of innovation. Konings, Brand-Gruwel, & Van Merriënboer (2007)

evaluated teachers' perceptions of innovations in learning environments in the Netherlands in their study. As a result, it was emphasised that educational designers and teachers should cooperate in the preparation and implementation of innovative learning environments, so that more qualified educational practices can be realised and innovative individuals can be raised. Brahier (2006), on the other hand, presented findings on primary school teachers' use of my digital note-taking software and their adoption of this innovation. As a result, the relative benefit of innovation, compatibility with current business practices and trialability were revealed as the dominant features in the adoption of innovations.

While researches in the field have associated innovative attitudes of teachers and students with technology integration, some studies have evaluated teachers' innovative attitudes in material development (Cohen & Ball, 2000). In addition, when the studies conducted in the field are examined, it is seen that there are studies that reveal that various factors play an active role in revealing the innovative skills of teachers (Avadhanam & Chand, 2016; Carungay & Tsuruoka, 2002; Chang, Chuang, & Bennington, 2011; Zainal & Matore, 2019; Zennouche, Zhang, & Wang, 2014)).

1.3. Purpose of the research

The purpose of this research is to get the opinions of preschool teachers in order to prepare preschool teachers for innovative activities in preschool organisations. In the research, the sub-objectives formed in accordance with the purpose of the research are as follows:

1. What are the innovativeness perceptions of preschool teachers?
2. Do preschool teachers describe themselves as innovative?
3. What is the role of preschool teachers in innovative activities in preschool organisations?
4. What are the suggestions of preschool teacher candidates regarding the improvement of their perceptions of innovation?

2. Method and materials

2.1. Research method

In this study, the in-depth interview technique, which is frequently used among qualitative research techniques, was used. In-depth interview technique is a data collection method that encompasses all dimensions of the researched subject and allows obtaining comprehensive answers by asking mostly open-ended questions, allowing information collection by face-to-face interviews (Tekin, 2006). In this research, it was deemed appropriate to use the in-depth interview technique to get the opinions of preschool teachers in order to prepare preschool teachers for innovative activities in preschool organisations.

2.2. Participants

The study group of the research consists of 33 volunteers working as preschool teachers in various educational institutions in the city of Shymkent, Kazakhstan. Qualitative research does not need large samples as it is mostly conducted based on observation and interviews because after a certain stage, both observations and interviews will start to repeat themselves (Morse, 2016). Qualitative researchers tend to use the nonprobability purposive sampling method. In the selection of individuals to be interviewed, it is checked whether they are directly related to the research subject rather than their power to represent the universe (Neuman, 2012). In this direction, the preschool teachers, who constitute the study group of the research, were formed by using the non-probabilistic purposeful sampling method. The experience and gender distribution of preschool teachers participating in the research are given in Table 1.

Table 1. Experience and gender distribution of preschool teachers

Experience	Gender		Sum
	Female	Male	
1–5 years	2	-	2
6–10 years	6	3	9
11–15 years	7	6	13
16 years and above	9	-	9
Sum	24	9	33

In Table 1, the experience and gender distribution of preschool teachers are given. 2 of the teachers participating in the research have 1–5 years, 9 have 6–10 years, 13 have 11–15 years and 9 have 16 years or more professional experience. 24 of the preschool teachers participating in the research are female and 9 are male.

2.3. Data collection tools

Semi-structured questions were formed as a data collection tool in the interviews with the preschool teachers who participated in the research. During the creation of semi-structured questions, the opinions of three experts were taken. It is important that semi-structured interview forms contain specific and few questions (Seidman, 2006). In this direction, a limited number of questions that can collect in-depth information were used in the semi-structured interview form prepared in order to get the opinions of preschool teachers in in-depth interviews. The questions created for the semi-structured interview form are as follows:

1. What does innovation mean to you?
2. Do you describe yourself as an innovator?
3. What is your role in innovative activities in preschool organisations?
4. What are your suggestions for the development of your innovative approaches?

2.4. Data collection process

In the process of collecting the research data, firstly, appointments were made for interviews with preschool teachers. The interviews were conducted face-to-face and in a quiet environment at the designated place and date. Permission was requested from the teachers to record the interviews. The interviews with each teacher lasted approximately 35–40 minutes. It took approximately 6 weeks to complete the interviews with 33 preschool teachers who constituted the study group of the research.

2.5. Data collection analysis

In the analysis of the research data, the descriptive analysis technique, which is frequently preferred in quantitative research, was used. The purpose of descriptive analysis is to bring together the data collected as a result of interviews or observations with the reader in an organised and interpreted way. In most descriptive analyses, the data are classified according to the predetermined themes; the findings related to the classified data are summarised; and the summaries are interpreted with the subjective knowledge of the researcher. In addition, the researcher establishes a cause–effect relationship between the findings and, if necessary, makes comparisons between the cases with structural difference analyses (Kitzinger, 1995).

The views of preschool teachers participating in the research on their preparation for innovative activities were evaluated with descriptive analysis. The answers given by the preschool teachers

during the interviews were transferred to the semi-structured interview form. Preschool teachers' responses disaggregated by the researchers were compared. The answers gathered in the common denominator are given in tables in the findings section of the research. In addition, direct quotations from the answers given by the teachers are presented in tables.

3. Results

In this section, the answers given by the preschool teachers to the questions in the semi-structured interview form during the interviews with the researchers are analysed.

Table 2. Preschool teachers' views on their perceptions of innovativeness

Category	F	%
Innovation is a necessity	28	84.8
Innovation is self-renewal.	21	63.6
Innovation is an indicator of development	17	51.5
Innovation makes a difference	16	48.8
Innovation is meeting the needs of the age in education	13	39.3
Innovation is using new and effective education and training methods	11	33.3
Innovation is an effort to increase the quality of education	10	30.3
Innovativeness is that the teacher produces solutions according to the student's needs	8	24.4
Innovation is being creative in education	5	15.1
Innovation is to follow professional developments closely.	4	12.1
Innovation is technology integration into education	2	6

In Table 2, the opinions of the preschool teachers participating in the research regarding their innovativeness are given. 84.8% of the teachers stated that innovation is a compulsory need. 63.6% of the teachers defined innovation as self-renewal. 51.5% stated that innovation is an indicator of development. 48.8% of the teachers stated that innovation enabled them to make a difference. 39.3% of the teachers said that innovation is to meet the needs of the age in education. 33.3% of them said that innovation is to use new and effective education and training methods. 30.3% of the teachers are innovative and strive to increase the quality of teaching. 24.4% of the teachers are producing solutions according to the needs of the students. 15.1% are being creative in education; 12.1% are following professional developments closely. Six of them defined innovation as technology integration into education.

The opinions of some preschool teachers who participated in the research regarding their innovativeness perceptions are given below with direct quotations.

T8: *I think being innovative is a compulsory need for all teachers, not just preschool teachers. The teacher has a function to make a difference in education. I define innovation as teachers following developments in the profession.*

T14: *Innovation means creativity. A teacher's openness to self-renewal. Education is no longer uniform as it used to be. The requirements of the 21st century make the understanding and needs of education different in this age. Keeping up with these requirements and being innovative is now a necessity.*

T26: *I think being innovative is parallel to being open to development. Implementing new practices in education and teaching methods can also be defined as innovation. In fact, we can say that it is an effort to increase the quality of education.*

T31: *I define being innovative as a teacher's self-development in using technology in education. Being innovative is an important need in the age we live in. The understanding of teaching in a way that meets the needs of students is the most important achievement of innovation.*

Table 3. Preschool teachers' views on being innovative

Category	F	%
Highly innovative	9	27.2
Moderately innovative	19	57.5
Low innovative	5	15.5
Sum	33	100

In Table 3, the views of preschool teachers participating in the research on their innovativeness were evaluated. 27.2% of the teachers defined themselves as high innovative, 57.5% moderately innovative and 15.5% as low innovative.

The opinions of some preschool teachers who participated in the research on their innovativeness are given below with direct quotations.

T1: *I find myself to be an extremely innovative teacher. I am a teacher who has adopted the principle of self-development and continuous improvement in my profession. I have an effort to improve myself.*

T13: *I can't exactly describe myself as an innovative. I partially follow the innovations and try to implement them. I give importance to my personal development, but I cannot say that it is at a sufficient level. I am aware that I need to be more innovative.*

T22: *I work hard, it is not always possible to follow the innovations at this pace. If I have to criticise myself in this regard, my motivation is a little low. Maybe it would be different if some motivation-enhancing practices were made.*

Table 4. Opinions of preschool teachers on the role of innovative activities in preschool organisations

Category	F	%
I take an active role in innovative activities in preschool organisations	8	24.2
I take part in innovative activities in preschool organisations	21	63.6
I do not take part in innovative activities in preschool organisations	4	12.1
Sum	33	100

In Table 4, the views of preschool teachers participating in the research on their role in innovative activities in preschool organisations are evaluated. 24.2% of the teachers stated that they take an active role in innovative activities in preschool organisations. 63.6% of the teachers stated that they took part in innovative activities in preschool organisations. 12.1% of the teachers stated that they did not take a role in innovative activities in preschool organisations.

The opinions of some preschool teachers participating in the research on the role of innovative activities in preschool organisations are given below with direct quotations.

T7: *I take part in innovative activities in organisations held within or outside the institution. While this contributes to my personal development, it also makes me feel more beneficial for the students.*

T20: *Sometimes I take part. In fact, it is very important to take part in such organisations. However, I don't always have time and energy for this.*

T33: *Unfortunately, I do not take part in innovative activities in preschool organisations. This needs to be organised and supported by the school where I work a little. In other words, the effect of the school's attitude is as great as my role.*

Table 5. Recommendations of preschool teachers regarding the development of innovative approaches

Category	Sub-category	F	%
Recommendations for teachers	Being open to new ideas	26	78.7
	Following new methods and practices		
	Trying new methods and practices		
	Using technology in the educational environment		
	Gaining creative thinking skills		
Recommendations for institutions	Trying new ways of solving problems	15	45.4
	Supporting teachers in the use of new methods and technology in schools		
	Creating an environment for sharing innovative applications in schools		
Recommendations for the Ministry	Organising innovative events in schools	11	33.3
	Providing financial and moral support to teachers in schools		
	Developing national education policies on innovation		
	Organising in-service training programmes on innovation		
	Providing lifelong learning support to teachers		

In Table 5, the suggestions of the preschool teachers participating in the research regarding the development of innovative approaches are evaluated. The suggestions of the teachers were evaluated in three categories as suggestions for teachers, for institutions and for the ministry. Teachers developed suggestions for teachers to be open to new ideas, to follow new methods and practices, to try new methods and practices, to use technology in the educational environment, to gain creative thinking skills and to try new ways of problem-solving. Supporting teachers in the use of new methods and technology in schools, creating an environment for sharing innovative practices in schools, organising innovative activities in schools and providing financial and moral support to teachers in schools have been developed by teachers as suggestions for schools. Developing national education policies on innovation, organising in-service training programmes on innovation and providing lifelong learning support to teachers were stated by teachers as suggestions for the ministry. 78.7% of the preschool teachers developed suggestions for teachers, 45.4% for institutions and 33.3% for ministries.

The views of some preschool teachers participating in the research on the development of their innovative approaches are given below with direct quotations.

T4: *First of all, we should improve ourselves as teachers. We must research new methods, follow them and apply them in the classroom setting. We must be open to new ideas. We must have problem solving skills. Seminars should be organised in schools to encourage teachers to innovate.*

T19: *It is very important to be able to present new ideas, to use technological developments in the educational environment, that is, to renew oneself. Schools should also provide financial and moral support to teachers in this regard. In addition, the ministry and the state should regulate their education policies accordingly.*

T27: *We should follow new methods and practices. Teachers need to be supported regarding these new methods and practices and the use of technology in the school environment. The task of raising the lifelong learning tendencies of teachers is also a part of the ministry. For this, he needs to develop applications.*

4. Discussion

When the opinions of the preschool teachers participating in the research on their perceptions of innovation are evaluated, it can be determined that the majority of the teachers defined innovation as a compulsory need, self-renewal and an indicator of development. In their research, Thurlings, Evers, & Vermeulen. (2015) expressed the realisation of innovation in teacher behaviours as putting forward innovative ideas and finding supporters for innovative ideas. The majority of preschool teachers who participated in the study defined themselves as moderately innovative. Davitt (2008) also concluded in his study, similar to the findings of this study, that the innovation training of educators is at a moderate level. Demir Basaran and Keles (2015), again in parallel with their findings, revealed that teachers have an average level of innovativeness. The majority of preschool teachers participating in the research stated that they take part in innovative activities in preschool organisations.

When the suggestions of the preschool teachers participating in the research on the development of innovative approaches were evaluated, it was determined that majority of the teachers developed suggestions for teachers. These suggestions are to be open to new ideas, to follow and try new methods and practices, to use technology in the educational environment, to gain creative thinking skills and to try new ways of problem-solving. Messmann and Mulder (2011) in their study in Germany stated that the personal factors affecting teachers' innovativeness are curiosity and openness. Borasi and Finnigan (2010) emphasised the importance of creativity in the development of teachers' problem-solving skills in their research. As a result of the research, it was revealed that creative problem-solving is an effective factor on innovative behaviours. Blandul (2015), on the other hand, revealed in his research that teachers' tendencies to use information and communication technologies play an important role in the development of their understanding of innovation.

In addition, teachers stated that institutions and the ministry have a role in the development of innovative approaches. In his study, Suharyati (2016) revealed that there is a strong positive relationship between teachers' innovative behaviours and corporate culture. Similarly, Chang et al. (2011) also found a moderate and significant relationship between organisational climate and organisational structure and creative teaching. Lin et al. (2011) emphasised the effect of creating teacher training programmes with an innovative approach and thus creating technology-supported modern education programmes on teachers' gaining an innovative perspective.

5. Conclusion

In today's conditions, where the importance given to education and training is increasing day by day, raising innovative individuals in our country as well as all over the world is considered an important requirement of the age we live in. Raising innovative individuals is possible by instilling this in students from the first years of education. It is extremely important for the teachers who will realise

this to set an example for the students. Therefore, in this research, it is aimed to get the opinions of preschool teachers in order to prepare preschool teachers for innovative activities in preschool organisations. As a result, it is seen that the majority of teachers define innovation as a compulsory need, renewal of oneself and an indicator of development. The majority of preschool teachers participating in the research describe themselves as moderately innovative. In parallel with this, teachers stated that they take part in innovative activities in preschool organisations. Teachers' suggestions for the development of innovative approaches are to be open to new ideas, to follow and try new methods and practices, to use technology in the educational environment, to gain creative thinking skills and to try new ways of problem-solving. In addition, teachers stated that institutions and the ministry should aim to develop teachers' innovative attitudes through various practices.

6. Recommendations

As a result of the research, it is seen that preschool teachers define themselves as moderately innovative. This means that they are actually open to innovation, but these aspects need to be improved. In this direction, the institutions, the ministry and the state have duties in order to develop the innovative attitudes of teachers and to enable them to take a more active role in innovative activities in preschool organisations. As stated by the teachers participating in the research, activities aimed at disseminating an innovative understanding in institutions should be carried out regularly. In addition, informing teachers at regular intervals through in-service training will positively affect their innovative attitudes.

References

- Avadhanam, R. M., & Chand, V. S. (2016). Leveraging correlates of innovative teacher behaviour for educational development in developing societies. *American Journal of Educational Research*, 4(14), 1019–1024. Retrieved from <http://article.scieducationalresearch.com/pdf/education-4-14-6.pdf>
- Blandul, V. C. (2015). Innovation in education—fundamental request of knowledge society. *Procedia-Social and Behavioral Sciences*, 180, 484–488. [doi:10.1016/j.sbspro.2015.02.148](https://doi.org/10.1016/j.sbspro.2015.02.148)
- Borasi, R., & Finnigan, K. (2010). Entrepreneurial attitudes and behaviors that can help prepare successful change-agents in education. *The New Educator*, 6(1), 1–29. [doi:10.1080/1547688X.2010.10399586](https://doi.org/10.1080/1547688X.2010.10399586)
- Brahier, B. R. (2006). *Examining a model of teachers' technology adoption decision making: An application of diffusion of innovations theory*. Minneapolis, MN: University of Minnesota. Retrieved from <https://www.proquest.com/docview/305316440?pq-origsite=gscholar&fromopenview=true>
- Carungay, R. C., & Tsuruoka, Y. (2002). Innovativeness in secondary science teachers of The Philippines. *Journal of Science Education in Japan*, 26(3), 227–234. [doi:10.14935/jssej.26.227](https://doi.org/10.14935/jssej.26.227)
- Chang, C. P., Chuang, H. W., & Bennington, L. (2011). Organizational climate for innovation and creative teaching in urban and rural schools. *Quality & Quantity*, 45(4), 935–951. Retrieved from <https://link.springer.com/article/10.1007/s11135-010-9405-x>
- Cohen, D. K., & Ball, D. L. (2000, April). Instructional innovation: Reconsidering the story. In *Annual Meeting of the American Educational Research Association, New Orleans*. Retrieved from http://www.sii.soe.umich.edu/newsite_dev/documents/InstructionalInnovation.pdf
- Davitt, S. J. (2008). *An exploratory study of principal innovativeness and leadership behavior*. Eugene, OR: University of Oregon. Retrieved from <https://www.proquest.com/docview/304486819?pq-origsite=gscholar&fromopenview=true>
- Demir Basaran, S., & Keles, S. (2015). Who is the innovator? Examining the innovativeness levels of teachers. *Hacettepe University Faculty of Education Journal*, 30(4), 106–118. Retrieved from <https://app.trdizin.gov.tr/makale/TWpVd09USXdNQ09>

- Saira, Z., Fatima, Z., Rysty, K., Sholpan, S., Laura, T., & Assem, B. Preparation of preschool education specialists for innovative activities in preschool organisations. *World Journal on Educational Technology: Current Issues*, 14(3), 619-629. <https://doi.org/10.18844/wjet.v14i3.7270>
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly*, 82(4), 581–629. [doi:10.1111/j.0887-378X.2004.00325.x](https://doi.org/10.1111/j.0887-378X.2004.00325.x)
- Goldsmith, R. E., & Foxall, G. R. (2003). The measurement of innovativeness. *The International Handbook on Innovation*, 5, 321–330. Retrieved from https://web.archive.org/web/20150724124152id/http://gent.uab.cat:80/diego_prior/sites/gent.uab.cat/diego_prior/files/Article_to_comment_11.pdf
- Jin, Z., Hewitt-Dundas, N., & Thompson, N. J. (2004). Innovativeness and performance: Evidence from manufacturing sectors. *Journal of Strategic Marketing*, 12(4), 255–266. [doi:10.1080/0965254042000308075](https://doi.org/10.1080/0965254042000308075)
- Kitzinger, J. (1995). Qualitative research: Introducing focus groups. *BMJ*, 311(7000), 299–302. [doi:10.1136/bmj.311.7000.299](https://doi.org/10.1136/bmj.311.7000.299)
- Konings, K. D., Brand-Gruwel, S., & Van Merriënboer, J. J. (2007). Teachers' perspectives on innovations: Implications for educational design. *Teaching and Teacher Education*, 23(6), 985–997. [doi:10.1016/j.tate.2006.06.004](https://doi.org/10.1016/j.tate.2006.06.004)
- Lin, T. C., Hsu, Y. S., & Cheng, Y. J. (2011). Emerging innovative teacher education from situated cognition in a web-based environment. *Turkish Online Journal of Educational Technology-TOJET*, 10(2), 100–112. Retrieved from <https://eric.ed.gov/?id=EJ932230>
- Luekitinan, W. (2014). Organization climates and individual innovation. *Advances in Management and Applied Economics*, 4(1), 123. Retrieved from http://www.scienpress.com/Upload/AMAE/Vol%204_1_8.pdf
- Loogma, K., Kruusvall, J., & Umarik, M. (2012). E-learning as innovation: Exploring innovativeness of the VET teachers' community in Estonia. *Computers & Education*, 58(2), 808–817. [doi:10.1016/j.compedu.2011.10.005](https://doi.org/10.1016/j.compedu.2011.10.005)
- Messmann, G., & Mulder, R. H. (2011). Innovative work behaviour in vocational colleges: Understanding how and why innovations are developed. *Vocations and Learning*, 4(1), 63–84. Retrieved from <https://link.springer.com/article/10.1007/s12186-010-9049-y>
- Moody, K. (2009). *Teacher perceptions of moving toward technology innovation: Does an enhancing education through technology grant lead to innovation and change?* (Doctoral dissertation). University of Alabama Libraries. Retrieved from <https://ir.ua.edu/handle/123456789/741>
- Morse, J. M. (2016). *Mixed method design: Principles and procedures*. London, UK: Routledge. [doi:10.4324/9781315424538](https://doi.org/10.4324/9781315424538)
- Rogers, E. M. (2002). Diffusion of preventive innovations. *Addictive Behaviors*, 27(6), 989–993. [doi:10.1016/S0306-4603\(02\)00300-3](https://doi.org/10.1016/S0306-4603(02)00300-3)
- Seidman, I. (2006). *Interviewing as qualitative research: A guide for researchers in education and the social sciences*. New York, NY: Teachers College Press. Retrieved from <https://eric.ed.gov/?id=ED594529>
- Suharyati, H. (2016). Constraint of Paud teacher's innovativeness. *Journal of Education, Teaching and Learning*, 1(1), 32–35. Retrieved from <https://www.learntechlib.org/p/209140/>
- Xu, Z., & Chen, H. (2010). Research and practice on basic composition and cultivation pattern of college students' innovative ability. *International Education Studies*, 3(2), 51–55. Retrieved from <https://eric.ed.gov/?id=EJ1065984>
- Tekin, H. H. (2006). In-depth interview of qualitative research method as a data collection technique. *Istanbul University Journal of Sociology*, 3(13), 101–116. Retrieved from <https://dergipark.org.tr/en/download/article-file/4163>
- Thurlings, M., Evers, A. T., & Vermeulen, M. (2015). Toward a model of explaining teachers' innovative behavior: A literature review. *Review of Educational Research*, 85(3), 430–471. [doi:10.3102%2F0034654314557949](https://doi.org/10.3102%2F0034654314557949)
- Van Braak, J. (2001). Individual characteristics influencing teachers' class use of computers. *Journal of Educational Computing Research*, 25(2), 141–157. [doi:10.2190%2F81YV-CGMU-5HPM-04EG](https://doi.org/10.2190%2F81YV-CGMU-5HPM-04EG)

- Saira, Z., Fatima, Z., Rysty, K., Sholpan, S., Laura, T., & Assem, B. Preparation of preschool education specialists for innovative activities in preschool organisations. *World Journal on Educational Technology: Current Issues*, 14(3), 619-629. <https://doi.org/10.18844/wjet.v14i3.7270>
- Wang, X., Sun, H., & Li, L. (2019). An innovative preschool education method based on computer multimedia technology. *International Journal of Emerging Technologies in Learning*, 14(14). <https://www.learntechlib.org/p/210548/>
- Zainal, M. A., & Matore, M. E. E. M. (2019). Factors influencing teachers' innovative behaviour: A systematic review. *Creative Education*, 10(12), 2869. Retrieved from https://www.scirp.org/html/34-6304706_96741.htm
- Zennouche, M., Zhang, J., & Wang, B. W. (2014). Factors influencing innovation at individual, group and organisational levels: A content analysis. *International Journal of Information Systems and Change Management*, 7(1), 23-42. Retrieved from <https://www.inderscienceonline.com/doi/abs/10.1504/IJISCM.2014.065052>