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# Equity and Quality in Early Childhood Education: Promoting Preschool Education Development through Legislation

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*“Education is not the filling of a pail, but the lighting of a fire.”*  
—William Butler Yeats

PRESCHOOL education is now recognized as foundational to basic education and the most cost-effective among all levels of education throughout the whole life of the individual. Early childhood education is of vital importance for individuals’ healthy development, lifelong educational attainment, and the quality of their family life. Moreover, equitable quality preschool education is of strategic significance to social stability and economic development as well as a nation’s international competitiveness.

Opportunity and quality of preschool education are both crucial as nobody’s early childhood is repeatable (Feng & Zhou, 2011). The UNESCO’s “The World Declaration on Education for All (1990)” emphasizes the necessity of providing education for all children, youth, and adults (UNESCO, 1990). “The Dakar Framework for Action” proclaims “expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children” to be one of its primary goals (UNESCO, 2000. P. 8). The 2015’s “Incheon Declaration: Education 2030: Towards Inclusive and Equitable Quality Education and Lifelong Learning for All” encourages the “provision of at least one year of free and compulsory quality pre-primary education and that all children have access to quality early childhood development, care, and education” (UNESCO, 2015. P. 2).

Amid the growing recognition of the importance of preschool education in the international community, its development encounters unprecedented challenges, such as shortages of preschool education resources, inequity in early childhood education, and in-

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sufficient quality of preschool education. In the context of the rapid social development, addressing major issues with preschool education through legislation has become a global trend (Pang & Xia, 2013). The developmental history of global early childhood education shows that a complete preschool education law system helps guarantee the right of young children to pre-primary education and potentially gives impetus to improving the level of preschool education. An increasing number of countries are applying the “standard of human rights” to legislation on early childhood education to ensure children’s enjoyment of the right to this education. Nations and territories such as the United States, the United Kingdom, France, Brazil, Mexico, Sweden, Hungary, Taiwan of China, and the Macao Special Administrative Region have enacted specialized preschool education law or have set forth targeted and detailed provisions on the universalization of preschool education in relevant education law. Furthermore, in response to the actual needs, a wide range of preschool education policies have been formulated in a timely manner. By doing so, authoritative and mandatory norms have been established for the universalization of preschool education as well as for the resolution of practical issues encountered in its implementation (Li, 2019).

Currently, Chinese preschool education is experiencing a rapid growth, involving a large pre-primary-age population, which poses a demand for higher-order legislative guarantee. On June 2, 2023, the Executive Meeting of the State Council of China approved the *Preschool Education Law of the People’s Republic of China (Draft)*. *Issues with Chinese Preschool Education and Implications of the Preschool Education Law of the People’s Republic of China (Draft)* published in this issue focus on the problem of advanced education in Chinese kindergartens and its harms and expound on the significance of the Preschool Education Law for developing a more scientific pre-primary curriculum that takes the characteristics of young children’s physical and mental development as the primary consideration, underscores the role of games in implementing preschool education, and respects preschoolers’ right to play (Yao, 2023). It is hoped that this article will arouse more interest in and discussion on the law.

## References

- Feng, X. & Zhou, J. (2011). Building the nation’s wealth: A profile of the UNESCO’s first world conference on early childhood care and education. *Studies in Preschool Education*, 2011(1):20-28. Available at:  
[https://kns.cnki.net/kcms2/article/abstract?v=j6HAoO1nZAx96olthvRzExhT5PkiBiZbBGqge49BDqHGpOVPY3wljdHq74LhMdbhXPzsSGqBEVwIROJjzMEoonYiOT9Gw\\_IQ57OrX2ViBYNsyw1yMlo0iLAN-RYg\\_Ouf&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=j6HAoO1nZAx96olthvRzExhT5PkiBiZbBGqge49BDqHGpOVPY3wljdHq74LhMdbhXPzsSGqBEVwIROJjzMEoonYiOT9Gw_IQ57OrX2ViBYNsyw1yMlo0iLAN-RYg_Ouf&uniplatform=NZKPT&language=CHS)
- Li, Z. (2019). Policy trends in global preschool education and implications. *Basic Education Review*, 2019(14):6-10. Available at:  
[https://kns.cnki.net/kcms2/article/abstract?v=j6HAoO1nZAzkNPQf9HwocbaK11SLBEPmh8gPKmZ7gMkcHO4PZ753vB5Yfft2siWa2hbv07bze\\_6yCIRMMmk3SUfiZ6J1lnJYIhnlntCnwQ2diypUl6UrsOxycIV8-ZVaRZeJdKT\\_Pao=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=j6HAoO1nZAzkNPQf9HwocbaK11SLBEPmh8gPKmZ7gMkcHO4PZ753vB5Yfft2siWa2hbv07bze_6yCIRMMmk3SUfiZ6J1lnJYIhnlntCnwQ2diypUl6UrsOxycIV8-ZVaRZeJdKT_Pao=&uniplatform=NZKPT&language=CHS)
- Pang, L. & Xia, J. (2013). International strategies for the development of preschool education: Universalization, equity, and high quality. *Journal of Educational Studies*, 2013(3):49-55. DOI:  
<https://doi.org/10.14082/j.cnki.1673-1298.2013.03.013>
- UNESCO. (2000). The Dakar Framework for Action: Education for All: Meeting Our Collective Commitments. P. 8. Available at:  
<https://unesdoc.unesco.org/ark:/48223/pf0000121147?posInSet=10&queryId=691e7a53-fa47-4853-86e2-be9de6041dec>

- UNESCO. (2015). Incheon Declaration: Education 2030: Towards Inclusive and Equitable Quality Education and Lifelong Learning for All. P. 2. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000233137>
- UNESCO. (1990). World Declaration on Education for All and Framework for Action to Meet Basic Learning Needs. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000127583>
- Yao, H. (2023). Issues with Chinese preschool education and implications of the Preschool Education Law of the People's Republic of China (Draft). *Science Insights Education Frontiers*, 19(1):3017-3031. DOI: <https://doi.org/10.15354/sief.23.re302>

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# Popularizing Nutrition Education to Improve Student Nutrition Literacy

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*“We are raised in a culture that values expertise over exploration.”  
–Nina Wise*

**H**EALTH is an eternal theme for mankind. The World Health Organization (1986) defines health as a state of physical, mental, and social wellbeing of the individual. Nutrition is one of the major external determinants of human health. The concept of “nutrition literacy” was first raised by Tenhave et al. (1997) in their article titled “Literacy Assessment in a Cardiovascular Nutrition Education Setting.” Silk et al. (2008) defined nutrition literacy as the degree to which individuals have the capacity to obtain, process, and understand nutrition information and skills needed in order to make appropriate nutrition decisions. Adequate nutrition literacy is beneficial for the individual obtaining correct dietary information, improving their dietary patterns and preventing chronic diseases.

Since the mid-20th century, many countries have become aware of the importance of nutrition education for individual and national development. Japan is among the nations that initiated nutrition education the earliest. From 1945 on, Japan enacted the nutrition law, established the accreditation system for nutritionist qualifications, and advanced the “National Health Promotion Movement for the 21st Century” to achieve the goal of improving students’ physical fitness (Sakagami, 2004). The U.S.’s 1946 National School Lunch Act created the National School Lunch Program (NSLP) to provide low-cost or free school lunch meals to eligible students through subsidies to schools (Institute of Medicine Committee, 1997). The UK’ National Curriculum mandates schools to offer cooking and nutrition education courses with course credits included in the overall academic results of the individual. In Denmark, the national curriculum program stipulates that students need to receive two years of cooking education between the fourth and seventh grades, which includes training on cooking techniques as well as nutrition knowledge, food hygiene and culture, etc., with a view to encourage young people to learn to cook for themselves rather than depending on fast food. The German government provides experiential nutrition education for students by implementing the “Public Kitchen” program.

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Parents and representatives of government departments are also invited to participate in the program so that all parties including schools contribute to the development of healthy dietary behavior in children (Bates & Eccles, 2008).

Despite the increased awareness of the importance of healthy diet and lifestyle in the international community, one-third or more of the world population are still suffering from diet-related malnutrition and consequential issues such as obesity and chronic diseases, due to economic development and changes in the pace of life (Mannar, 2020). There is growing interest in how to improve nutrition literacy of the public. Several nutrition literacy measurement tools have been developed. In 2007, Diamond (2007) created the Nutritional Literacy Scale (NLS), using the Short Test of Functional Health Literacy in Adults (S-TOFHLA), one of the commonly used and validated measures of health literacy, as a model. Gibbs and Chapman-Novakofski (2013) verified content validity of the Nutrition Literacy Assessment Instrument (NLAI) through an online questionnaire survey. Using the Delphi process, Liao and Lai (2017) developed a set of nutrition literacy (NL) indicators for Taiwan college students, serving as a basis to develop Taiwan College's Nutrition Literacy Scale and providing information on nutrition education.

*The Relationship between Prospective Teachers' Nutritional Literacy and Healthy Lifestyle Behaviors* in this issue is a quantitative study on the correlation between the nutrition literacy and healthy lifestyle in pre-service teachers and the influence of factors such as gender, living environment, nutritional state on the relation, using the Adolescent Nutritional Literacy Scale and Health Promoting Lifestyle Profile – II. The findings of the correlation research show a moderately positive relationship between nutrition literacy and healthy lifestyle in these teacher candidates. The study suggests that nutrition education and training should be administered to students at all levels including higher education (Usta & Mertoglu, 2023).

## References

- Bates, H. & Eccles, K. (2008). *Wellness Curricula to Improve the Health of Children and Youth: A Review and Synthesis of Related Literature*. Alberta Education.
- Diamond, J. J. (2007). Development of a reliable and construct valid measure of nutritional literacy in adults. *Nutrition Journal*, 6(1):1-4. Available at: <https://nutritionj.biomedcentral.com/articles/10.1186/1475-2891-6-5?report=reader>
- Gibbs, H. & Chapman-Novakofski, K. (2013). Establishing content validity for the Nutrition Literacy Assessment Instrument. *Preventing Chronic Disease*, 10:E109. DOI: <https://doi.org/10.5888/pcd10.120267>
- Institute of Medicine (US) Committee on Comprehensive School Health Programs in Grades K-12. (1997). *Schools & Health: Our Nation's Investment*. Allensworth D, Lawson E, Nicholson L, Wyche J, editors. Washington (DC): National Academies Press (US). DOI: <https://doi.org/10.17226/5153>
- Liao, L. L. & Lai, I. J. (2017). Construction of nutrition literacy indicators for college students in Taiwan: a Delphi consensus study. *Journal of Nutrition Education and Behavior*, 49(9):734-742. DOI: <https://doi.org/10.1016/j.jneb.2017.05.351>
- Mannar, V., Micha, R., Allemandi, L., Afshin, A., Baker, P., Battersby, J.,...& Schofield, D. (2020). 2020 Global nutrition report: action on equity to end malnutrition. Available at: <https://globalnutritionreport.org/reports/2020-global-nutrition-report/>
- Sakagami, K. (2004). The development of certified health education specialists (CHES) in Japan: Coverage of entry-level CHES responsibilities and competencies by current health education-related professional preparation programs. Teachers College, Columbia University.

- Silk, K. J., Sherry, J., Winn, B., Keesecker, N., Horodyski, M. A., & Sayir, A. (2008). Increasing nutrition literacy: testing the effectiveness of print, web site, and game modalities. *Journal of Nutrition Education and Behavior*, 40(1):3-10. DOI: <https://doi.org/10.1016/j.jneb.2007.08.012>
- TenHave, T. R., Van Horn, B., Kumanyika, S., Askov, E., Matthews, Y., & Adams-Campbell, L. L. (1997). Literacy assessment in a cardiovascular nutrition education setting. *Patient Education and Counseling*, 31(2):139-150. DOI: [https://doi.org/10.1016/s0738-3991\(97\)01003-3](https://doi.org/10.1016/s0738-3991(97)01003-3)
- Usta, Z. B., & Mertoglu, H. (2023). The relationship between prospective teachers' nutritional literacy and healthy lifestyle behaviors. *Science Insights Education Frontiers*, 19(1):3003-3016. DOI: <https://doi.org/10.15354/sief.23.or431>
- World Health Organization. (1986). Ottawa Charter for Health Promotion, 1986 (No. WHO/EURO: 1986-4044-43803-61677). World Health Organization. Regional Office for Europe. Available at: <https://iris.who.int/bitstream/handle/10665/349652/WHO-EURO-1986-4044-43803-61677-eng.pdf>

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# The Effect of Using Critical Reading in 5<sup>th</sup> Grade Science on Students' Academic Achievement, Science Performance and Creativity

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**Abstract:** *Abstract: This study examined the effect of using critical reading in scientific texts on students' academic achievement, science performance level and creativity. The study was conducted with 5th grade students in Ereğli, Zonguldak during the 2017-2018 academic year. The study group consisted of a total of 34 students, 17 in the experimental group and 17 in the control group. Activities based on critical reading were carried out with the experimental group, whereas traditional activities from the 5th grade science curriculum were employed with the control group. The "Multiple Choice Academic Achievement Test", the "Science Performance Level Test" and the "Torrance Test of Creative Thinking" were administered to both groups as a pre-test prior to the study and as a post-test once the study was completed. The data were analyzed with the dependent and independent samples t-Test using the SPSS package program. The study results revealed a significant difference in science performance level and creativity between the experimental and control groups favoring the experimental group. However, there was no significant difference in academic achievement between the experimental and control groups. Critical reading practices can be used in science lessons to improve students' high-level skills, and critical reading activities can be developed alongside scientific texts for multiple grade levels.*

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**Keywords:** Reading, Critical Reading, Science Performance, Creativity, Scientific Texts

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## **Introduction**

**R**EADING, one of the basic language skills, has an important place in the intellectual life of individuals. Perception, sense-making, acquiring new knowledge and reusing this knowledge in communicative processes are largely based on reading. The act of reading helps individuals improve their vocabulary and increases the complexity of their thought processes. In its simplest form, reading is defined as the ability to extract meaning from a written text (Snow, 2002). Reading, however, is not just a simple act of recognizing words by skimming a text. In fact, reading is a language skill with many components that needs to go through a mental activity process (Katrancı & Kuşdemir, 2016). One of the main objectives of the Ministry of National Education's Turkish Teaching Curriculum (2019) is "to enable students to assess and question what they read with a critical perspective after comprehending what they read". Giving individuals critical thinking beyond reading comprehension, reading enables them to make sense of their environment and produce effective solutions to complex problems. At this juncture, the most important goal of the reading process is the development of critical reading skills (Flynn, 1989). As part of the critical thinking process, the concept of critical reading has been put forward as a model approach, especially in education, to clarify the complex process simply described as "reading". Critical reading does not mean careful and detailed reading (Yu, 2015), rather, critical reading is defined as thinking about a text, pondering over the rights and wrongs of the text, and interpreting the subject in the text (Aşılıoğlu, 2008). Literacy Gains (2009) describes critical reading as an attitude, emotional and intellectual behavior, and mental stance that a reader exhibits while reading a text. According to Paul and Elder (2008), critical reading is the science and art of examining and assessing the text by adopting a view on improving the nature of one's thinking. Critical reading requires a deep and active interaction with the text (Sutherland & Incera, 2021). It also requires readers to use higher-order thinking skills such as analysis and synthesis, problem-solving and metacognitive thinking skills to discuss the meanings extracted from the text with the author and constructs new meanings (Hermida, 2009 as cited in Sutherland & Incera, 2021). The four basic elements of critical reading are; determining the author's point of view, identifying the primary claims and the main idea, finding the supporting details used to strengthen the thoughts, and assessing the supporting details (Maker & Lenier, 1996). Determining the purpose and main idea of the text, analyzing the reliability, comparing the new information with the previous information, comparing the information in the text with other sources, understanding the implicit or unspoken parts of the text, understanding the author's purpose and to whom he/she is addressing, and determining the author's point of view on the subject are among the critical reading skills. In

the literature, being able to distinguish facts and opinions, make predictions based on certain parts of the text, determine the type of text, identify the language characteristics used by the author, assess the text by asking questions, draw conclusions and summarize the text with the reader's own words are also expressed as critical reading skills (Emiroğlu, 2014).

In the present study, critical reading skills were used to understand scientific texts. Effective use of language and literacy skills in science education is quite important (Osborne, 2020) because language and literacy are among the most important tools used in almost every stage of science, from making scientific explanations to promoting innovative products. Almost every aspect of the phenomenon called "information" is language. This means that the key to understanding a subject is to understand its language (Postman & Weingartner, 1971). For many students, the biggest obstacle to learning science, or at the same time the most important achievement, is learning its language. The functionality of science is related to the richness of the terms and concepts used, and generally, all teaching and learning activities take place using the verbal and nonverbal language environment (Wellington & Osborne, 2001). Effective use of language in science is closely associated with the concept of scientific literacy. Norris and Philips (2003) listed some of the components of scientific literacy as distinguishing real scientific information from fake information, understanding science, and scientific applications, understanding what is considered science, using scientific knowledge in problem-solving, comprehending the risks and benefits of science, and thinking critically about science. At this juncture, using critical reading practices is one of the most important ways to improve scientific literacy skills.

In the literature, there are many studies conducted to examine the effectiveness and usefulness of critical reading (Camp & Camp, 2013; Gyuris & Castell, 2013; Akin et al., 2014; Jarman et al., 2012; Özensoy, 2021). McClune and Jarman (2010) drew attention to some points in the critical reading of scientific news and made various recommendations. According to the researchers, the main purpose of media is not to educate, but to achieve economic gain and to entertain and persuade the reader. Thus, critical readers should be careful about what is written in newspapers. Although there are a number of studies within existing educational programs relating to the critical reading of scientific texts, these studies should be discussed with an interdisciplinary approach. In addition, the development of critical reading skills depends on the quality of interdisciplinary studies. In a study conducted with 4th grade students, a direct relationship between teachers' experiences and practices was found. The aforementioned study also determined that students learned to question texts, criticize social justice and injustice and engaged in social actions using critical literacy approaches, and finally, each student was able to learn to read critically (Krug, 2010). A

study conducted by Koray and Çetinkılıç (2020) concluded that the use of critical reading in understanding scientific texts significantly increased the academic performance and problem-solving skills of 7th grade students. Additionally, Ünal (2006) aimed to determine the degree of relationship between 5th grade students' critical reading skill levels, their reading comprehension levels and their attitudes towards reading. According to the results, there was a significant high-level relationship between the critical reading skill levels and the attitudes, and a moderate-level relationship between the critical reading skill levels and the reading comprehension levels. Another study that explored the relationship between critical reading and cognitive learning put forth that the learning of students who have reached university level was limited to the comprehension level of remembering. Meaning, they were able to memorize what they read, but did not have critical reading skills. Furthermore, low-level reading makes it difficult to achieve learning at the applying, analyzing, synthesis, and evaluation levels, which are the upper levels of the cognitive domain (Aşlıoğlu, 2008). A study designed to determine teacher beliefs about critical reading strategies on teaching English in foreign language classrooms revealed that teachers' critical reading strategies played a very important role in students' understanding of reading materials (Kien & Huan, 2017). In another study, it was revealed that the critical reading training program improved teacher candidates' metacognitive reading strategies and media literacy levels (Karabay, 2015).

As can be seen, there is a great deal of research on critical reading in the literature. However, customized educational programs or interdisciplinary practices for different disciplines and subject areas are needed in order to enable individuals to acquire critical reading skills. Specifically, the use of critical reading skills in understanding scientific texts in science courses is also important for the development of scientific literacy. Testing the effectiveness of such practices, which are expected to have certain common points in terms of high-level thinking skills, is only possible with scientific studies. More empirical research on critical reading with an interdisciplinary approach and interpretation of these results can increase the quality and proliferation of such practices. Critical reading skills are mostly used in language education. Thus, it is believed that the present study, which focuses on the use of critical reading skills in the field of science, a different discipline, will contribute to the literature in the field.

The purpose of the present study is to examine the effect of critical reading practices in science on students' academic achievement, science performance level and creativity. In line with this study purpose, the sub-problems of the study are as follows:

1. Is there a significant difference between the academic achievement gain scores of the experimental group in which the critical reading practices

were carried out and the control group in which the methods appropriate to the science curriculum were carried out?

- i. Is there a significant difference between the academic achievement pre-test and post-test scores of the experimental group in which critical reading practices were carried out?
  - ii. Is there a significant difference between the academic achievement pre-test and post-test scores of the control group in which methods appropriate to the science curriculum were carried out?
2. Is there a significant difference between the science performance level gain scores of the experimental group in which the critical reading practices were carried out and the control group in which methods appropriate to the science curriculum were carried out?
- i. Is there a significant difference between the science performance level pre-test and post-test scores of the experimental group in which critical reading practices were carried out?
  - ii. Is there a significant difference between the science performance level pre-test and post-test scores of the control group in which methods appropriate to the science curriculum were carried out?
3. Is there a significant difference between the creativity gain scores of the experimental group in which the critical reading practices are carried out and the control group in which methods appropriate to the science curriculum were carried out?
- i. Is there a significant difference between the creativity pre-test and post-test scores of the experimental group in which critical reading practices were carried out?
  - ii. Is there a significant difference between the creativity pre-test and post-test scores of the control group in which methods appropriate to the science curriculum were carried out?

## **Method**

The study employed the quasi-experimental method. The experimental method is used to determine the effect of the variables identified by the researcher and to test the cause and effect relationship between the variables.

The four characteristics of experimental research are; the comparison of the groups, manipulation of the independent variable, randomness, and control of extraneous variables (Fraenkel & Wallen, 2006). Comparable procedures are conducted in experimental studies, their effects are examined, and the results allow the researcher to obtain the clearest interpretations (Büyükoztürk, 2014). In this study, the pre-test-post-test control group design was used. In this design, without any selection process, the participants are assigned to two groups, the experimental and the control group. Meas-

**Table 1. Standard Notation of the Study Design.**

Group	Measurement I	Experimental Design	Measurement II
Ge	MCAAT <sub>1</sub>	Activities about critical reading practices	MCAAT <sub>2</sub>
	SPLT <sub>1</sub>		SPLT <sub>2</sub>
	FPDT <sub>1</sub>		FPDT <sub>2</sub>
Gc	MCAAT <sub>1</sub>	Activities appropriate to the science curriculum	MCAAT <sub>2</sub>
	SPLT <sub>1</sub>		SPLT <sub>2</sub>
	FPDT <sub>1</sub>		FPDT <sub>2</sub>

*Ge: The experimental group in which critical reading practices were carried out*  
*Gc: The control group in which methods appropriate to the science curriculum were used*  
*MCAAT: Multiple Choice Academic Achievement Test for the People and Environment Unit*  
*SPLT: Science Performance Level Test for the People and Environment Unit*  
*TTCT: Torrance Test of Creative Thinking*

Measurements are done in the groups before and after the experimental application. Before the application, tests are administered to both groups at the same time and measurements related to the dependent variable are taken. The experimental procedure based on the independent variable is carried out in the experimental group, whereas applications appropriate for the curriculum are carried out in the control group. The administered pre-tests are also administered as post-tests and the scores of the two groups are compared using appropriate techniques (Sönmez & Alacapınar, 2011).

In the current study, the independent variable whose effect on the experimental group was examined was determined as critical reading practices. With the control group students, the lessons were conducted using activities deemed appropriate by the Ministry of National Education's 5<sup>th</sup> Grade Science Curriculum. The standard notation of the study design is presented in **Table 1**.

## ***Study Groups***

The study was conducted with 5th grade students in Ereğli, Zonguldak during the 2017-2018 academic years. A total of 34 middle school students were included in the study. Two of the 5th grade classrooms were randomly assigned, one as the experimental group (17 students) and the other as the control group (17 students). It was assumed that there was no interaction between the groups during the study that would affect the experiment. There were six female and 11 male students in the control group, and five female and 12 male students in the experimental group. While activities based on critical reading were carried out in the experimental group, control group students were taught with methods provided by the Ministry of National Education's 5<sup>th</sup> Grade Science Curriculum. The duration of the periods in the

experimental and control groups and the classroom's environmental conditions were kept equal. Critical reading activities were used by the researcher for the first time. No additional applications or activities were offered to any of the groups.

### ***Equivalence of the Groups***

To ensure the equivalence of the groups, the 4<sup>th</sup> grade average scores of the students in the experimental and control groups and the 5<sup>th</sup> grade science average scores of the 1<sup>st</sup> semester were compared using the independent samples t-test. According to the results, both groups were equivalent in terms of the determined variables. In addition, both groups' pre-tests were examined, and according to the independent samples t-test results, the experimental and control groups were found to be equal in terms of their academic achievement, science performance and creativity pre-test scores.

### ***Procedures Carried Out***

Multiple Choice Academic Achievement Test (MCAAT), Science Performance Test (SPLT) and Torrence Test of Creative Thinking Test (TTCT) pre-tests were administered to both groups after the equivalence of the groups was determined. The study included the 5<sup>th</sup> grade science "Biodiversity" and "Relationship between People and Environment" portion of the curriculum. Activities-based critical reading practices were carried out with the students in the experimental group. In the control group, instruction was carried out using methods and techniques provided by the 5<sup>th</sup> grade science curriculum such as the activities in the textbook and the Education Information Network application, direct instruction, discussion, experimentation, demonstration, question-answer, etc. The study was carried out by the second researcher in the experimental and control groups. At the end of the application, the MCAAT, SPLT and TTCT post-tests were administered to both groups. The study lasted for seven weeks, including the pre-test and post-test administration periods.

### ***Procedures Related to the Development of the Critical Reading Practices***

Before developing activities for the experimental group, the literature on critical reading was examined and scientific articles, periodicals, theses, dissertations, and books were investigated. Opinions were exchanged with two experts who had previously conducted scientific research on critical reading, about the critical reading objectives, activity worksheets, and certain situa-

tions that may be encountered during the implementation phase. The scientific texts covering the subjects of the 5th grade “People and Environment” unit were selected by examining the texts written in the last 20 years using the e-archive of TÜBİTAK (Scientific and Technological Research Institution of Turkey) Publications Science Children’s Journal. Among these texts, five scientific texts named “Moas”, “Our Unique Orchids”, “They Are in Danger”, “Living Beings Tell Us If There Is Pollution in Nature” and “Climate Change”, which best covered the 5th grade science People and Environment unit learning objectives and were appropriate for the 5th graders in terms of critical reading practice and students’ language skills, were selected. The texts were on the relationship between people and the environment, environmental pollution, the factors causing environmental problems, extinct and endangered living organisms, and the reasons behind this. The opinions of two science teachers were taken to ensure the content of the selected texts adequately addressed unit learning objectives and whether it was appropriate for the students’ ages. Furthermore, the selected texts were examined by two Turkish language teachers and were found appropriate for the application of critical reading and the students’ grade level. A total of five activities consisting of five parts and 12-16 questions related to the reading texts were developed. Activity questions were formed by taking into account the predetermined critical learning objectives. Sections from the selected texts were quoted and questions open to discussion were added. While developing the activity worksheets, attention-grabbing and text-related visuals suitable to the 5th grade level were used. The questions in the activity worksheets were examined by two field experts and found appropriate to critical reading objectives and students’ language levels. Lasting five periods, each activity consisted of five parts and was carried out as follows:

*Part 1:* Part 1 included the title of the text to be read and three questions to be answered by making inferences from the title. The activity worksheet called “Inference from The Title”, Part 1, was distributed to the students. First, students were asked to examine the group of words in the title and to guess what the text would be about and for what purpose the author wrote the text. After presenting some visual elements related to the text, students were asked to establish a relationship between these elements and the text. Then, the students were divided into groups and they shared and discussed the inferences they made about the title with each other.

*Part 2:* The activity worksheet including the entire text was distributed to the students. They were asked to read the text, and it was recommended to write down the words they did not know and the text keywords in the notes section next to the text while they read. They were also asked to underline the parts of the text that they found important and interesting. Then, they were divided into groups and they tried to understand the text better by discussing it with each other.

*Parts 3 and 4:* At the beginning of the lesson, students were asked to look at the parts they noted and underlined to express their opinions about the text. Later, an activity worksheet consisting of 7-8 questions on average, which included the critical reading objectives and the learning objectives of the “People and Environment” unit “Human and Environment”, was distributed to the students. After each question was answered, the students were given the opportunity to express their opinions and the answers were opened up for discussion. Students were also given the opportunity to question the type of text, the reliability of the information given by the author, the relevancy of the information, and the author’s values and attitudes towards the subject. The questions in this part aimed to reveal students’ prior knowledge by associating the subject with their own lives.

*Part 5:* The final part involved the evaluation of the text. In this part, the students were given an activity worksheet consisting of questions that include critical reading objectives that enabled them to question the main idea of the text, supporting ideas, the sources of information used by the author, and the conclusions the author reached. After each question, students’ views were taken and opened up for discussion. Students were asked questions that encouraged them to relate what they deduced from the text to their own lives.

## ***Data Collection Tools***

In the study, the MCAAT was used to determine students’ academic achievement levels in the “People and Environment” unit, the SPLT to determine students’ science performance levels and the TTCT to determine students’ creative thinking levels.

### ***Multiple Choice Academic Achievement Test (MCAAT)***

The MCAAT includes questions on the learning objectives of “Biodiversity” and “Relationship between People and Environment”. While most of the questions are at the knowledge, comprehension, and application level, there are also questions at the analysis and evaluation levels. After reviewing various resources related to the test, thirty multiple-choice questions, five for each learning objective, were developed. For the content validity of the test, three experts in science were consulted and necessary revisions were made based on their input. For the reliability of the test, the test was also administered to 67 students currently in the 6<sup>th</sup> grade. According to the results of the item analysis performed using the IteMan program, the Cronbach’s alpha reliability coefficient of the 30-question test was found to be 0.80. The minimum score that can be obtained from the test is 0, whereas the maximum score that can be obtained from the test is 100. The MCAAT was ad-

ministered to the experimental and control groups as a pre-test and post-test. The administration of the MCAAT lasted 40 minutes.

The minimum score that can be obtained from the test is 0, whereas the maximum score that can be obtained from the test is 100.

### ***Science Performance Level Test (SPLT)***

Developed to determine students' science performance levels, the Science Performance Level test (SPLT) includes questions on the learning objectives of the "People and Environment" unit. The questions are at the analysis, synthesis, and evaluation levels of Bloom's cognitive domain taxonomy. For the development of the test, the last 15 years' Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS) questions were examined. The test included seven open-ended questions related to five questions, which were taken among the PISA and TIMSS questions as written or with minor revisions. In order to ensure the suitability of the questions used in the SPLT to the learning objectives of the 5<sup>th</sup> grade "People and Environment" unit and students' levels, the test was reviewed by three Science experts and found to be appropriate. In addition, in order to determine the appropriateness of the questions for 5<sup>th</sup> grade in terms of language skills, two Turkish Language experts were consulted and they found the test appropriate. The SPLT was administered to the experimental and control groups as a pre-test and post-test. The administration of the SPLT lasted 40 minutes. The inter-rater reliability coefficient of the test was determined as 0.92.

The minimum score that can be taken from the test is 0, and the maximum score is 100.

### ***Torrance Test of Creative Thinking (TTCT)***

Developed to determine students' creativity, the TTCT assesses the dimensions of creativity, fluency, flexibility, originality, and elaboration. According to Sternberg and O'Hara, fluency refers to the total number of pictures completed by the individual in the activities and flexibility refers to the inclusion of different subjects in the pictures completed in the activities and the number of them in different categories. While originality refers to the number of pictures with an original thought in the completed pictures, elaboration refers to how much detail the individual can give in the completed drawings (cited in Aksoy 2005). Developed by Torrance, the TTCT was found a valid and reliable measurement tool in the studies conducted with children in the United States, and its validity and reliability were approved by many researchers (cited in Aslan, 2001). The TTCT is made up of two parts, a "Verbal Test" and a "Figural Test". There are 2 different types of

TTCT Formal Test, Form A, and Form B. In this study, the Figural A form was administered to the students. The Figural A Form has three subsets of activities, namely Picture Construction, Picture Completions, and Parallel Lines. All three activities involve picture completion (Torrance, Ball, & Safter 2008). The TTCT's Form A was administered to the experimental and control groups as a pre-test and post-test. The administration of the test lasted 30 minutes. Necessary explanations were made to the students for the activity parts of the test. While completing the pictures, they were informed that they could create any object they imagined, and they should not restrict their thoughts. The data were evaluated by the researcher and another expert, and the inter-rater reliability was calculated as .88. The minimum score that can be obtained from TYDT is 0, and the maximum score is 120.

### ***Data Analysis***

In the study, how the variables of academic achievement, science performance and creativity were distributed among the experimental and control groups were examined. The suitability of the pre-test and post-test scores of the experimental and control groups to normality for all variables was analyzed with the Shapiro-Wilks test. As a result of the analysis, the normality test p significance values determined for both groups were found to be greater than .05, thus meeting the normality assumptions. In order to test whether there was a significant difference between the variables of academic achievement, science performance level and creativity between the experimental and control groups, the data obtained were analyzed with the independent samples t-Test using the SPSS package program. In the independent samples t-Test analyzes, calculations were made on the difference (gain) scores between the post-test and pre-test scores of these four variables. The dependent samples t-Test analysis was performed to determine whether there was a difference between the experimental and control groups before and after the study. Thus, the study findings were obtained, and the related interpretations were made by accepting the significance level of .05.

### ***Measures Taken against Threats to the Internal Validity of the Study***

For the threats against the internal validity of the study, first, selection bias was examined by taking into account students' grade point averages of the previous year, their science grades of the previous semester, as well as their pre-test results. It was determined that there was no difference between the groups in terms of these variables. It was assumed that the maturity effect would occur equally in all experimental conditions by using random assign-

ment. In the present study, it was assumed that the maturity effect was taken under control by assigning the groups randomly. None of the students in the study groups had previously participated in critical reading practices. In addition, since there was no significant event related to the dependent variables of the study and the utilization process before the application, any past effects did not affect the study. There was also no loss or gain of participants during the study with both groups remaining constant. Measuring tool effect, as a different threat type, was mitigated in both applications using the same items, the same order of administration of tools, and the same data collector. Additionally, regarding the administration of the measurement tool, five weeks is considered sufficient to prevent the pre-test effect. Furthermore, researcher bias was prevented by using an independent observer in both groups.

## Findings

In this section, study findings are presented in order of the sub-problems.

### *Findings and Comments on the First Sub-Problem*

In order to examine the first sub-problem of the study, independent samples t-Test was performed, and the results are given in **Table 2**.

**Table 2** shows that although the academic achievement score of the experimental group ( $\bar{x} = 11.06$ ) seemed to be slightly higher than the control group ( $\bar{x}=10.24$ ), there was no significant difference between these two groups ( $t_{(32)} = 0.33$ ,  $p > 0.05$ ). According to this finding, critical reading practices did not make a significant difference between the groups in terms of the academic achievement variable.

The results of the dependent samples t-Test analysis regarding “item a” of the first sub-problem are shown in **Table 3**.

**Table 3** shows that there was a significant difference between the academic achievement pre-test and post-test scores of the experimental group ( $t_{(16)} = 8.70$ ,  $p < 0.01$ ,  $\eta^2 = 0.83$ ). The academic achievement post-test scores of the experimental group ( $\bar{x} = 73.53$ ) were higher than their pre-test scores ( $\bar{x} = 62.47$ ). According to this finding, critical reading practice was effective in increasing the academic achievement scores of the experimental group.

The results of the dependent samples t-Test analysis regarding the item b of the first sub-problem are shown in **Table 4**.

Table 4 shows that there was a significant difference between the academic achievement pre-test and post-test scores of the control group ( $t_{(16)} = 4.87$ ,  $p < 0.01$ ,  $\eta^2 = 0.6$ ). The academic achievement post-test scores of the experimental group ( $\bar{x} = 72.18$ ) were higher than their pre-test scores ( $\bar{x} =$

**Table 2. Independent Samples t-Test Analysis Results of the Experimental and Control Groups according to the Academic Achievement Variable.**

Group	N	$\bar{x}$	S	SD	t	p
Experimental	17	11.06	5.24	32	0.33	0.74
Control	17	10.24	8.67			

**Table 3. Dependent Samples t-Test Analysis Results of the Experimental Group according to the Academic Achievement Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	62.47	15.54	16	8.70	0.00
Posttest	17	73.53	17.36			

**Table 4. Dependent Samples t-Test Analysis Results of the Control Group according to the Academic Achievement Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	61.94	18.46	16	4.87	0.00
Posttest	17	72.18	21.18			

**Table 5. Independent Samples t-Test Analysis Results of the Experimental and Control Groups according to the Science Performance Variable.**

Group	N	$\bar{x}$	S	SD	t	p
Experimental	17	30	17.59	32	2.55	0.016
Control	17	15.88	14.60			

**Table 6. Dependent Samples t-Test Analysis Results of the Experimental Group according to the Science Performance Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	29.71	18.58	16	7.03	0.00
Posttest	17	59.71	17.54			

61.94). According to this finding, teaching based on the science curriculum was effective in increasing the academic achievement scores of the control group.

### ***Findings and Comments on the Second Sub-Problem***

In order to examine the second sub-problem of the study, independent samples t-Test was performed, and the results are given in **Table 5**.

**Table 5** shows that there was a significant difference between the science performance level scores of the experimental and control groups ( $t_{(32)} = 2.55$ ,  $p < 0.05$ ,  $\eta^2 = 0.17$ ). The science performance level scores of the experimental group ( $\bar{x} = 30$ ) were higher than the control group scores ( $\bar{x} = 15.88$ ). According to this finding, critical reading practices caused a significant difference between the experimental and control groups according to the science performance variable in favor of the experimental group.

The results of the dependent samples t-Test analysis regarding item a of the second sub-problem are shown in **Table 6**.

**Table 6** shows that there was a significant difference between the science performance pre-test and post-test scores of the experimental group ( $t_{(16)} = 7.03$ ,  $p < 0.01$ ,  $\eta^2 = 0.76$ ). The science performance post-test scores of the experimental group ( $\bar{x} = 59.71$ ) were higher than their pre-test scores ( $\bar{x} = 29.71$ ). According to this finding, critical reading practices were effective in increasing the science performance scores of the experimental group.

The results of the dependent samples t-Test analysis regarding the item b of the second sub-problem are shown in **Table 7**.

**Table 7** shows that there was a significant difference between the science performance pre-test and post-test scores of the control group ( $t_{(16)} = 4.48$ ,  $p < 0.01$ ,  $\eta^2 = 0.56$ ). The science performance post-test scores of the control group ( $\bar{x} = 51.18$ ) were higher than their pre-test scores ( $\bar{x} = 35.29$ ). According to this finding, teaching based on the science curriculum was effective in increasing the academic achievement scores of the control group.

### ***Findings and Comments on the Third Sub-Problem***

In order to examine the third sub-problem of the study, independent samples t-Test was performed, and the results are given in **Table 8**.

**Table 8** shows that a significant difference was found between the creativity scores of the experimental and control groups ( $t_{(32)} = 2.68$ ,  $p < 0.05$ ,  $\eta^2 = 0.18$ ). The creativity scores of the experimental group ( $\bar{x} = 4$ ) were higher than the scores of the control group ( $\bar{x} = -2.47$ ) (the negative value of the score is due to the “gain” score, that is, the difference between the post-test and pre-test and the group’s post-test scores were lower than the pre-test

**Table 7. Dependent Samples t-Test Analysis Results of the Control Group according to the Science Performance Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	35.29	27.87	16	4.48	0.00
Posttest	17	51.18	29.40			

**Table 8. Independent Samples t-Test Analysis Results of the Experimental and Control Groups according to the Creativity Variable.**

Group	N	$\bar{x}$	S	SD	t	p
Experimental	17	4	7.77	32	2.68	0.012
Control	17	-2.47	6.21			

**Table 9. Dependent Samples t-Test Analysis Results of the Experimental Group according to the Creativity Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	67.24	9.23	16	7.03	0.05
Posttest	17	71.24	9.86			

**Table 10. Dependent samples t-Test Analysis Results of the Control Group according to the Creativity Variable.**

Measurement	N	$\bar{x}$	S	SD	t	p
Pretest	17	68.24	7.08	16	1.64	0.12
Posttest	17	65.76	7.36			

scores). According to this finding, critical reading practices were effective in increasing the creativity scores of the experimental group.

The results of the dependent samples t-Test analysis regarding the item of the third sub-problem are shown in **Table 9**.

**Table 9** shows that there was a significant difference between the pre-test and post-test scores of the experimental group according to creativity ( $t_{(16)} = 7.03$ ,  $p = 0.05$ ,  $\eta^2 = 0,22$ ). The creativity post-test scores of the experimental group ( $\bar{x} = 71.24$ ) were higher than their pre-test scores ( $\bar{x} = 67.24$ ). According to this finding, critical reading practices were effective in increasing the creativity scores of the experimental group.

The results of the dependent samples t-Test analysis regarding the item b of the third sub-problem are shown in **Table 10**.

**Table 10** shows that there was no significant difference between the pre-test and post-test scores of the control group according to creativity ( $t_{(16)} = 1.64$ ,  $p > 0.05$ ). The pre-test scores of the control group ( $\bar{x} = 68.24$ ) were higher than their post-test scores ( $\bar{x} = 65.76$ ). According to this finding, curriculum-based education was not effective in increasing the creativity scores of the control group.

## Discussion

According to the study findings, there was a significant increase in the academic achievement scores of the experimental group using the critical reading practices and the control group using 5<sup>th</sup> grade science curriculum activities. However, there was no significant academic achievement gain score difference between the experimental and control group. Additionally, the study found a significant increase in the science performance levels of both the experimental and control groups. Even though both groups improved, the significant science performance level difference between experimental and control group favored the experimental group and showed the effectiveness of critical reading practices on increasing students' science performance levels. Although critical reading practices were not effective in increasing the success in multiple-choice tests containing questions from the lower levels of the cognitive domain taxonomy (knowledge, comprehension, and application), critical reading practices were effective in increasing the success in questions from the upper levels of the cognitive domain taxonomy (analysis, synthesis, and evaluation). Multiple studies and research concur with this study's findings showing the upper level cognitive domain benefit of using critical reading practices (Çetinkılıç, 2017; Akın, 2014; Çam, 2016). Çetinkılıç (2017), in his study with 7th grade students, concluded that critical reading practices in science were effective in increasing students' academic achievement and science performance level. Working with 8th grade students, Akın (2014) put forth that critical reading practice in science increased

students' academic achievement. Çam (2016) revealed that critical reading increased academic achievement in Turkish in her study conducted with 5th grade students. In his study with 4th grade students, Alkaya (2006) concluded that science teaching based on critical thinking skills was effective in increasing students' academic achievement. In addition, Gyuris and Castell (2013) determined that university students with low performance were the students who benefited most from the short-term critical reading practice of scientific texts. Aşlıoğlu (2008) believes that cognitive learning largely depends on the individual's success in reading and that learning can only be realized at the upper levels of the cognitive domain taxonomy, specifically analysis, synthesis, and evaluation when reading is performed critically.

After application, there was a significant increase in creativity levels between students in the experimental group in which the critical reading practices were carried out and the students in the control group who were taught in accordance with the 5<sup>th</sup> grade science curriculum highlighting the benefit of critical reading practices in the classroom. Another study result showed a significant increase between creativity pre-test and post-test scores of the experimental group, but such an increase was not detected in the control group. According to Glaveanu (2014), critical reading is the first step toward awareness of creativity and taking responsibility. Also, according to Hoskins (2010), if the scientific articles in the newspapers are read according to the structured critical reading program he called "create", students will move away from passivity by taking responsibility for their own learning with exercises that require them to use their creativity. Liu (2019) is of the opinions that since English classes focus more on students' language proficiency, their critical thinking skills do not develop, and thus, their creative and innovative competencies do not increase. Another study conducted by Baki (2020) revealed that critical reading skills are an important determinant of the assessment skills of the creative reading process, and found a strong and positive relationship between critical reading skills and the assessment skills of the creative reading process. In her study examining the impact of an effective thinking education program on 9th grade students' creative thinking and problem-solving skills, Sarmaşık Kaya (2018) concluded that an effective thinking education program improved students' creative thinking and problem solving skills. Yurdakal (2018) found out that Turkish lessons constructed with creative reading increased students' creative reading perceptions, and attitudes towards reading, reading achievement and creative thinking skills.

One of the most important goals of science education is science literacy. Acquiring this skill is very important for individuals to relate scientific information to the real world, make correct inferences, and make appropriate decisions. The most important learning tools that contain scientific information are texts. It is considered that the scientific knowledge acquired by indi-

viduals who cannot read or write texts is seriously limited (Norris & Phillips, 2003). Critical reading requires an active communication process in which comments and evaluations can be made about the text material. In critical reading, the reader reads by asking questions about the contradictions, coherences, or incoherences in the thoughts or expressions in the text, and the reasons behind the writing of the text (Altunöz, 2016). The critical reading of scientific information from scientifically prepared texts can give individuals an advantage in producing reliable and efficient solutions to very difficult real-life problems. Therefore, reading should not be seen only as a language course activity, but should also be included in science and other courses.

The use of such innovative practices, in which different disciplines are used together and which enables the perfection of a basic skill such as reading, at all levels of education is of great importance in terms of raising young people who are the guarantee of our future. In this context, the following recommendations can be made in line with the study results:

- Critical reading practices can be used in science so that students can develop their high-level skills.
- Critical reading activities including scientific texts can be developed for different grade levels.
- Science learning environments can be enriched in terms of students' other critical thinking skills such as researching, questioning, commenting, thinking, discussing, and creating a critical perspective.
- Measurement and evaluation tools can be prepared for the assessment of critical thinking and critical reading skills.
- Teachers who have an important role in teaching critical thinking and reading skills can be provided activity and skill-based training.

In addition, the effects of critical reading practices on different subjects and different course contents of science on various variables can be examined. The effectiveness of different methods and techniques can be tested in the context of teaching critical thinking and critical reading skills to students. Studies using different methodologies related to critical reading practices can be designed. This research was conducted with a limited number of students. Similar experimental studies can be designed with a larger number of participants for the use of critical reading activities in science lessons. The effectiveness of the applications for many variables such as learning science, critical thinking, reasoning, and problem solving can be tested by performing critical reading practices for all content, primarily socio-scientific subjects. Critical reading is only one of the critical thinking skills. At this point, the effectiveness of applications in which other critical thinking skills such as critical listening, open thinking, and Socratic inquiry are used and integrated with science contents can be tested through additional research. In this study, the main focus of critical reading practices involved reading text material and answering questions about the text. In future research, activities can be

prepared which not only utilize critical reading but also other critical thinking skills, and their effectiveness can be tested with experimental studies. This research was carried out using experimental design, one of the quantitative research methods. Further studies using qualitative research methods may provide evidence to gain in-depth knowledge about the overall research process.

### Limitations

The present study is limited to the "People and Environment" unit and was carried out over a period of five weeks, excluding the pre-test and post-test applications. The study was conducted with 34 students, and it was the first time students in the experimental group have encountered critical reading practices.

### References

- Akın, F. (2014). The effects of science teaching using the critical reading practice on learning products. Master diss., Bülent Ecevit University, Zonguldak.
- Akın, F., Koray, Ö., & Tavukçu, K. (2014). How effective is critical reading in the understanding of scientific texts? *Procedia - Social and Behavioral Sciences*, 174(12):2444-2451. DOI: <https://doi.org/10.1016/j.sbspro.2015.01.915>
- Aksoy, G. (2005). The Effect of the scientific method process, which is based on creative thinking, on the learning outcomes in science instruction. Master diss., Karaelmas University, Zonguldak
- Alkaya, F. (2006). The effect critical thinking skills based on the teaching of science studies on the academic achievement of students. Master diss., Mustafa Kemal University, Hatay.
- Altunöz, D. (2016). Turkish course development class 4. investigation of critical reading skills training program students. Master diss., Bartın University, Bartın.
- Aşılıoğlu, B. (2008). The importance of critical reading for cognitive learning and the ways to improve it. *Dicle University Ziya Gökalp Education Faculty Journal*, 2008(10):1-11. Available at: <https://dergipark.org.tr/tr/pub/zgefd/issue/47959/606781>
- Aslan, E. (2001). Torrance yaratıcı düşünce testi'nin Türkçe versiyonu. *Marmara University Atatürk Education Faculty Journal of Educational Sciences*, 14(14):19-40. Available at: <https://dergipark.org.tr/en/pub/maruaebd/issue/368/2523>
- Baki, Y. (2020). The effect of critical reading skills on the evaluation skills of the creative reading process. *Eurasian Journal of Educational Research*, 20(88):199-224. Available at: <https://dergipark.org.tr/en/pub/ejer/issue/57483/815396>
- Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö., Karadeniz, Ş., & Demirel, F. (2014). Bilimsel araştırma yöntemleri. Pegem Academy Publishing. ISBN: 978-9944-919-28-9.
- Çam, B. (2006). The relationship between visual reading level and reading understanding, critical reading and Turkish lesson academic success of elementary school students. Master diss., Eskişehir Osmangazi University, Eskişehir.
- Çetinkılıç, S. (2017). The effect of the use of

- critical reading practices in teaching science on academic performance and problem-solving skills. Master diss., Bülent Ecevit University, Zonguldak.
- Emiroğlu, H. (2014). Effect of critical reading teaching on critical reading skill. Master diss., Düzce University, Düzce.
- Flynn, L. L. (1989). Developing critical reading skills through cooperative problem solving. *The Reading Teacher*, 42(9):664-668. Available at: <https://www.jstor.org/stable/20200271>
- Fraenkel, J. R., & Wallen, N. E. (2006). How to design and evaluate research in education (6th ed.). NY: McGraw-Hill, New York.
- Glăveanu, V. P. (2014). The psychology of creativity: A critical reading. *Creativity. Theories – Research – Applications*, 1(1):10-32. DOI: <https://doi.org/10.15290/ctra.2014.01.01.02>
- Gyuris, E., & Castell, L. (2013). To tell them or show them? How to improve science students' skills of critical reading. *International Journal of Innovation in Science and Mathematics Education*, 21(1):70-80. Available at: <https://openjournals.library.sydney.edu.au/CAL/article/view/6713>
- Hoskins, S. (2010). "But if it's in the newspaper, doesn't that mean it's true?" developing critical reading & analysis skills by evaluating newspaper science with create. *The American Biology Teacher*, 72(7):415-420. DOI: <https://doi.org/10.1525/abt.2010.72.7.5>
- Karabay, A. (2015). Effect of critical reading education on metacognitive reading strategies and media literacy. *Journal of Theory and Practice in Education*, 11(4):1167-1184. Available at: <https://dergipark.org.tr/en/pub/eku/issue/5467/74221>
- Katranç, M. & Kuşdemir, Y. (2016). Anxiety and comprehension in reading: I can't find the main idea. *Education and Science*, 41(183):251-266. <https://doi.org/10.15390/EB.2016.4951>
- Kien, L. T., & Huan, N. B. (2017). Teacher beliefs about critical reading strategies in english as a foreign language classes in Mekong Delta Institutions, Vietnam. *European Journal of English Language Teaching*, 2(4): 39-57. DOI: <https://doi.org/10.46827/ejel.v0i0.841>
- Koray, Ö., & Çetinkılıç, S. (2020). The use of critical reading in understanding scientific texts on academic performance and problem-solving skills. *Science Education International*, 31(4):400-409. DOI: <https://doi.org/10.33828/sei.v31.i4.9>
- Krug, K. (2010). Critical literacy in the face of a mandated curriculum: Can children read beyond the text? George Washington University. ISBN: ISBN-978-1-1094-6226-5.
- Literacy Gains. (2009). Connecting Practice and Research: Critical Literacy Guide. Available at: [http://www.edugains.ca/resourcesLIT/CoreResources/Critical\\_Literacy\\_Guide.pdf](http://www.edugains.ca/resourcesLIT/CoreResources/Critical_Literacy_Guide.pdf)
- Liu, K. (2019). Developing critical reading skills through stylistic analysis in integrated college english classroom. *Theory and Practice in Language Studies*, 9(3): 341–346. DOI: <https://doi.org/10.17507/tpls.0903.13>
- Maker, J., & Lenier, M. (1996). Academic reading with active critical thinking. Wadsworth Publishing Company. ISBN 10: 0534220207 / C 13: 9780534220204
- McClune, B., & Jarman, R. (2010). Developing students' ability to engage critically with science in the news: Identifying elements of the "Media awareness" dimension. *Curriculum Journal*, 21(1):47-64. DOI: <https://doi.org/10.1080/09585170903558380>
- Norris, S. P., & Phillips, L. M. (2003). How literacy in its fundamental sense is central to scientific literacy. *Science Education*, 87(2): 224–240. DOI: <https://doi.org/10.1002/sce.10066>
- Osborne, J. (2002). Science without literacy: A ship without a sail? *Cambridge Journal of Education*, 32(2):203-218. DOI: <https://doi.org/10.1080/03057640220147559>
- Ozensoy, A. (2021). The effect of critical reading skill on academic success in social studies. *Eurasian Journal of Educational Research*, 93:319-337. DOI: <https://doi.org/10.14689/ejer.2021.93.15>
- Paul, R., & Elder, L. (2008). The miniature guide to critical thinking concepts and tools. Foundation for Critical Thinking Press. ISBN: 97815381344948
- Postman, N., & Weingartner, C. (1971). Teaching as a subversive activity. Penguin Books. ISBN: 0140806067
- Sarmaşık Kaya, G. (2018). Research regarding the effects of "Effective Thinking Training" Program on the ninth grade students' problem solving and creative thinking

- abilities. Master diss., İstanbul University, İstanbul.
- Snow C. E. (2002). *Reading for Understanding: Toward an R&D Program in Reading Comprehension.* RAND Corporation, Washington. ISBN: 0-8330-3105-8
- Sönmez, V., & Alacapınar, F. G. (2014). *Sampled scientific research methods.* Anı Publishing. ISBN: 9786051703176
- Sternberg, R. J., & O'Hara, L. A. (1999). Creativity and intelligence. In R. J. Sternberg (Ed.), *Handbook of creativity.* Cambridge University Press. pp. 251-272.
- Sutherland, A., & Incera, S. (2021). Critical reading: What do faculty think students should do? *Journal of College Reading and Learning*, 51(4):267-290. DOI: <https://doi.org/10.1080/10790195.2021.188>
- Torrance, E. P., Ball, O. E., & Safter, H. T. (2008). *Torrance test of creative thinking streamlined scoring guide for figural form A and B.* Scholastic Testing Service. Bensenville.
- Ünal, E. (2006). *The relation between primary school students critical reading skills and ability of reading understanding and their attitudes towards reading.* Master diss., Osmangazi University. Eskişehir.
- Van Camp, D., & Van Camp, W. (2013). Using content reading assignments in a psychology course to teach critical reading skills. *Journal of the Scholarship of Teaching and Learning*, 13(1):86-99. Available at: <https://files.eric.ed.gov/fulltext/EJ1011690.pdf>
- Wellington, J., & Osborne, J. (2001). *Language and literacy in science education.* Open University Press. Buckingham. ISBN: 0 335 20599 2
- Yu, J. (2015). Analysis of critical reading strategies and its effect on college English reading. *Theory and Practice in Language Studies*, 5(1):134-138. DOI: <http://dx.doi.org/10.17507/tpls.0501.18>
- Yurdakal, I. H. (2018). *The effects of creative reading practices on the primary school 4th graders' improving reading and the skills of creative thinking.* Doctoral diss., Pamukkale University. Denizli.

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# The Relationship between Prospective Teachers' Nutritional Literacy and Healthy Lifestyle Behaviors

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**Abstract:** *In this research, it is aimed to investigate the relationship between nutritional literacy and healthy lifestyle behaviors of prospective teachers according to various variables. Correlational survey model of the quantitative research methods is used in this survey. A moderate positive relationship was found between prospective teachers' nutritional literacy and healthy lifestyle behaviors. Based on the positive relationship between nutritional literacy and healthy lifestyle behaviors, it is recommended that nutritional literacy level be associated with healthy lifestyle by giving nutrition education at all school levels and undergraduate education in order to increase the level of healthy lifestyle behaviors in individuals.*

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## **Introduction**

**A** HEALTHY life and a balanced diet enable people to continue their lives with high quality and ensure that all organs in their bodies function fully and correctly. In order to give meaning to these concepts to individuals, especially in young people, individuals should be conscious about foods and have nutritional literacy.

Nutrition is one of the leading human needs thus; adequate and balanced nutrition is indispensable for a healthy life. If individuals do not take enough nutrients into their bodies, health problems arise and their productivity in their lives decreases (Mertoğlu et al., 2020). Individuals have to eat in order to continue their lives and to think and act in a healthy way. Nutrition has a great importance not only for the individual to eat healthy, but also for the society to be healthy and to develop economically. Healthy nutrition supports the physical, mental and social development of individuals. The two basic conditions of a healthy diet are balanced and adequate nutrition (Pekcan, 2012; Özmert, 2005). Since nutrition allows individuals to continue their lives in a healthy way, giving nutrition education to individuals has an important place. Among the aims of nutrition education are the individuals to lead a quality life and the promotion of appropriate and healthy food consumption in the society. Nutrition education draws attention to the development of long-term behavioral changes of individuals rather than knowledge and events about nutrition. Individual and social benefits of nutrition education, development in physical and mental health, and academic success are increased in knowledge about nutrition. Thanks to nutrition education, safe consumption of foods and awareness of this consumption take place in society (Sahu et al., 2022; Kame, 2022).

Nutritional literacy means, “the degree to which individuals have the capacity to obtain, process, and understand nutrition information and skills needed in order to make appropriate nutrition decisions” (Silk et al., 2008). Nutritional literacy in the literature; accessing, utilizing and interpreting basic nutritional information as a specific area of health literacy that reflects the ability to utilize conceptualizes it (Aktaş & Özdoğan, 2016a; Özdenk & Özcebe, 2018).

Individuals' ability to critically examine and understand information about foods; and, having the correct information about the consumption of foods is defined as nutritional literacy. Nutritional literacy also brings awareness about foods. The increase in the variety of food and the abundance of nutrition environments outside the home further increase the importance of literacy for nutrition (Aktaş & Özdoğan, 2016b). Having nutritional literacy also enables individuals to decide on healthy food choices. Individuals with sufficient nutritional literacy are expected to be aware of basic nutrition information, to understand and realize the information of nutrients, to

read simple labels and to control their skills. However, being aware of nutritional literacy ensures that the importance of nutrition education and the quality of nutrition is realized (Demir Özdek & Özcebe, 2018). The existence of nutrition awareness in individuals brings together healthy individuals and healthy societies as well (Arslan & Mertoğlu, 2022). Nutritional literacy is defined as the whole behavior of consuming or not consuming foods, sharing objective and real information about foods or not, and making the decision to choose the source of the information obtained about foods (Zöllner et al., 2009). Increasing the level of nutritional literacy in individuals has been determined as an important factor in maintaining a healthy life in society and preventing non-communicable diseases. One of the situations that negatively affect nutritional literacy is the publication of unproven articles in newspapers, websites and magazines (Chandrasekara et al., 2022).

According to WHO (World Health Organization) (2019), healthy lifestyle has been defined as,

1. A way of living that lowers the risk of being seriously ill or dying early. Not all illness and disease is preventable: however a large proportion of deaths, particularly those from coronary heart disease and lung cancer, can be avoided.
2. A way of living that helps you enjoy more aspects of your life. Health is not just about avoiding a disease or illness. It is about physical, mental and social well-being.
3. A way of living helps your whole family. When you adopt a healthy lifestyle you provide a more positive role model for other people in your family, particularly children.

A healthy life brought about by healthy nutrition enables individuals to maintain their health and increase their quality of life (Pekcan, 2012; Özmert, 2005). In the absence of a healthy diet, some health problems also arise. The resulting imbalance is generally in direct proportion to the density of the nutrients consumed. The basics of unhealthy nutrition in individuals; It creates situations caused by lack of awareness about foods and economic difficulties (Saygin et al., 2011). Lifestyles that support a healthy life are one of the most important factors of health status. However, this lifestyle plays an important role in supporting and maintaining a healthy life. Health promotion is receiving increasing attention in societies. Healthy lifestyle behaviors in societies and individuals are one of the most important aspects of health promotion. With the acquisition of accurate and objective information about healthy living behaviors in society, lifestyles that support healthy life can exist. In particular, individual lifestyles emerge with the construction of valuable healthy structures (Abbasi, 2020; Ahmadi & Roosta, 2015; Davis & De Guzman, 2022; Lopes Sousa et al., 2014).

## ***The Statement of Problem***

Many studies (Arslan & Mertoğlu, 2022; Aksoy & Uçar, 2014; Dilsiz, 2020; Akgün Kostak et al., 2014; Özyazıcıoğlu et al, 2011; Vural & Bakır, 2015) on nutritional literacy and healthy lifestyle behaviors have been found in the literature and literature. Nutrition is a condition that exists for individuals throughout their lives and must be maintained. A healthy diet is necessary and important for a healthy life. Every individual deserves a comfortable and peaceful life; however, individuals may not attach sufficient importance to their nutrition due to their conditions and lifestyles. However, it is thought that nutritional literacy, which is present or absent in individuals, may affect healthy lifestyle behaviors positively or negatively. For this reason, the level of the relationship between nutritional literacy and healthy lifestyle behaviors in individuals is considered important. However, studies on nutritional literacy and healthy lifestyle behaviors are scarce.

The core of research question is that there is a certain correlation between the nutritional literacy of future teachers and healthy lifestyle, and the correlation coefficient may be influenced by factors such as gender, living environment, and healthy nutrition status. The research sought answers to the following questions:

- What is the nutritional literacy and healthy lifestyle behavior levels of prospective teachers?
- How does prospective teachers' nutritional literacy and healthy lifestyle behavior levels affect the gender of prospective teachers?
- How does the place where teacher candidates live affect prospective teachers' nutritional literacy and healthy lifestyle behavioral levels?
- How does prospective teachers' nutritional literacy and healthy lifestyle behavior levels affect the healthy nutrition status of prospective teachers?
- What is the correlation coefficient between prospective teachers' nutritional literacy and healthy lifestyle behaviors?

## **Method and Materials**

The method of the research was determined as a correlational survey model, one of the quantitative research methods. The correlational survey model is used to determine the extent to which the factor values of two or more factors are related or vary in an identifiable model (Survey and Correlational Research Design, 2022, ss: 240). The sample of this research is simple random sample. Individuals from a population are randomly selected. Every individual has an equal right to be elected. This study was based on a single limitation. That limitation is that individuals are teacher candidates. Participation in the study is on a voluntary basis (Thomas, 2023). The study group consists of 273 prospective teachers studying at a state university in Istanbul (women = 212, 77.7 %; men = 61, 22.34%). Of the 273 people, 172 (63%) living with family, 35 (12,8%) living with friends, 26 (9.5%) living in state

dormitories, 26 (9.5%) living in private dormitories, and 14 (5.1%) living alone. The scales were sent to the prospective teachers once via e-mail as a Google Forms. The mail explained the purpose of the study, why they were invited and the time commitment required. Prospective teachers participated in the research voluntarily.

## ***Data Collection Tools***

### **Nutritional literacy Scale (NLS)**

In this study, the Adolescent Nutritional literacy Scale, developed by Bari (2012) and adapted to Turkish by Sonay Türkmen, Filiz, & Kalkan (2017) and tested for validity and reliability, was used to determine the nutritional literacy levels of teacher candidates. The scale consists of 22 items. Items 1, 2, 3, 4, 5, 6, 7 are reverse items. Each item is of a Likert type, which can score between 1 and 5 (1 = I strongly disagree, 2 = I do not agree, 3 = I am undecided, 4 = I agree, 5 = I completely agree). The Cronbach alpha value of the scale is 0.80. In this study, the Cronbach alpha value of the scale was determined as 0.86. The increase in the scores of adolescents shows that the level of nutritional literacy also increases.

### **Health Promoting Lifestyle Profile - II (HPLP II)**

In this study, developed by Walker et al. (1996) and adopted to Turkish by Bahar et al. (2008) and tested for the validity and reliability of the Health Promoting Lifestyle Profile II (HPLP II) which consists of 52 items was used. There is no reverse item in the scale. The scale is a 4-point Likert scale: (1 = never, 2 = sometimes, 3 = often, 4 = regularly). According to HPLP II scale information; The highest score that can be obtained is 208, and the lowest score is 52. The Cronbach alpha value of the scale is 0.92. In this study, the Cronbach alpha value of the scale was determined as 0.93.

## ***Data Analysis***

Data analysis of the research was done with the SPSS Package Program. Descriptive analysis was used for the data of the research. Descriptive analysis provides information to the researcher about the distribution of the data and determines the similarities between the variables (An Overview of Descriptive Analysis, 2022). Independent samples t-test was used in the analyzes for the NLS ( $N = 273 > 30$ ,  $p = 0.06 > 0.05$ ) and HPLP II ( $N = 273 > 30$ ,  $p = 0.063 > 0.05$ ). In all analyses, alpha was set to  $p = 0.05$ . Correlation analysis was performed to determine the relationship between the two scales. Since the variances are normally distributed, Pearson correlation coefficient is pre-

ferred. In order to interpret the relationship between the two scales,  $p < 0.05$  and the coefficient should be between -1 and +1 (Pearson Correlation, 2022).

## Results

The aim of this study is to examine the relationship between prospective teachers' and healthy lifestyle behaviors according to various variables. In this section, the findings obtained from the research questions are presented below.

According to **Table 1**, it is seen that the average scores of prospective teachers from NLS are high. It is seen that the average scores of the prospective teachers from HPLP II are in the middle value.

When **Table 2** is examined, it is seen that the NLS scores of the prospective teachers make a significant difference in favor of the women ( $p < 0.05$ ). It has been determined that female prospective teachers' NLS score averages are higher than male prospective teachers' NLS score averages. It has been determined that the average scores of female prospective teachers from HPLP II are higher than the average points of male prospective teachers from HPLP II. However, it is seen that the HPLP II scores of the prospective teachers do not make a significant difference according to gender ( $p > 0.05$ ).

When **Table 3** is examined, the NLS scores of the prospective teachers do not make a significant difference according to the place they live. The highest average score (84.74) was found among prospective teachers living alone. It is seen that prospective teachers' HPLP II scores make a significant difference according to the places they live. Significant differences in the analysis; it was determined among those living with family and with friends, between those living in a state dormitory and with family, between those living in a private dormitory and alone, among those living alone and with friends and among those living alone and living in a state dormitory.

In **Table 4**, it is determined that the NLS scores of the prospective teachers made a significant difference according to their healthy nutritional status ( $p < 0.05$ ). The mean NLS score of the prospective teachers who think they are eating healthy (79.88) is higher than the mean score of NLS (75.67) of the prospective teachers who do not think they eat healthy. It was determined that prospective teachers' HPLP II scores made a significant difference according to their health status ( $p < 0.05$ ). The mean score of prospective teachers who think they are eating healthy (135.54) in HPLP II is higher than the mean score of prospective teachers who think they are eating healthy (123.41) from HPLP II.

When **Table 5** is examined, it is seen that there is a moderately positive and significant relationship between prospective teachers' nutritional literacy and healthy lifestyle behaviors. This means that as the prospective

**Table 1. Prospective Teachers' NLS and HPLP II Scores.**

Measure	N	SD	$\bar{x}$
NLS	273	11.29	78.02
HPLP II	273	20.98	130.12

**Table 2. Independent Samples t-test Results Of Prospective Teachers' NLS and HPLP II p Values by Gender.**

Measure	Gender	N	$\bar{x}$	SD	p
NLS	Women	212	79.37	271	0.000
	Men	61	73.21		
HPLP II	Women	212	130.91	271	0.246
	Men	61	127.37		

**Table 3. ANOVA Results of Prospective Teachers' NLS and HPLP II Scores by Place of Residence.**

Measure	Residence	N	$\bar{x}$	p	Meaningful
NLS	With family (1)	172	75.45	0.063	
	Private dormitories (2)	26	77.11		
	With friends (3)	35	76.40		
	Alone (4)	14	84.78		
	State dormitories (5)	26	74.34		
	Total	273	78.00		
HPLP II	With family (1)	172	132.77	0.004	1-3, 1-5, 2-4, 3-4, 4-5
	Private dormitories (2)	26	124.34		
	With friends (3)	35	123.48		
	Alone (4)	14	140.14		
	State dormitories (5)	26	121.92		
	Total	273	130.12		

**Table 4. Independent Samples t-test Results of Prospective Teachers' NLS and HPLP II p Values by Healthy Nutritional Status.**

Measure	Healthy nutritional status	N	$\bar{x}$	SD	p
NLS	Yes	151	79.88	271	0.002
	No	122	75.67		
HPLP II	Yes	151	135.54	271	0.000
	No	122	123.41		

**Table 5. Correlation Between NLS And HPLP II Of Prospective Teachers.**

		NLS	HPLP II
NLS	Pearson Correlation	1	0.324**
	Sig. (2-tailed)		0.000
	N	273	273
HPLP II	Pearson Correlation	0.324**	1
	Sig. (2-tailed)	0.000	
	N	273	273

\*\*Correlation Coefficient

teachers' nutritional literacy scores increase, their healthy lifestyle behavior levels will also increase.

## Discussion

In this study, it was determined that the prospective teachers' nutritional literacy levels were high. This result can be interpreted as follows: Prospective teachers have real and objective information about nutrition, they are conscious about foods, they are aware of foods they should and should not consume. In studies on nutritional literacy, high level (Arslan & Mertoğlu, 2022), sufficient (Zoellner et al., 2009), low level (Ayer, 2018; Özdenk, 2020) were suggested. The result of the research shows parallelism with Arslan and Mertoğlu (2022) and Zoellner et al. (2009). However, in other studies on nutritional literacy in the literature; low level (Ayer, 2018; Özdenk, 2020).

In this study, healthy lifestyle behavior levels of prospective teachers were determined as moderate. This result is similar to other studies in the literature. In a study conducted by Demirci Apaydın and Çelik (2022) and

Ertop et al. (2012), it was determined that the healthy lifestyle behavior levels of the participants were moderate.

In the study, the nutritional literacy levels of female teachers were higher than male teachers. The fact that women's nutritional literacy levels were higher than men in this study was interpreted by the researchers as follows: Women are more active in nutrition, kitchen and food branches, they read more and have more information on these subjects. For this reason, women can analyze which food is beneficial and which food is harmful to their body more accurately than men. It is seen that there are different results in the studies on nutritional literacy levels and gender in the literature; female participants have higher nutritional literacy than males (Özenoğlu et al., 2021; Pak, 2020; Bozdoğan & Yılmazel, 2019; Tamel, 2018), male participants have higher nutritional literacy than females (Demir Özdenk & Özcebe, 2018; Gömleksiz et al., 2020).

In the literature, it has been determined in some studies that healthy lifestyle behavior levels do not differ according to gender (Cihangiroğlu & Deveci, 2011; Abbasi et al., 2020). In the study, no significant change was found between healthy lifestyle behaviors and gender factors. This result is similar to the studies in the literature.

In the study, it was determined that the nutritional literacy of the teachers did not create a significant change according to the places they live. This can be interpreted as follows: Nutritional literacy may not have much to do with the living environment. However, it is noteworthy that the scores obtained from NLS are highest for individuals living alone. Individuals living with the family are not a harbinger of their meals or the food taken at home, so it may not be possible to question the food taken. Likewise, individuals living in dormitories generally benefit from dining halls. However, individuals living alone or with friends are personally responsible for the food cooked in their homes and brought to their kitchens. Assuming this responsibility, evaluating foods and choosing them wisely may bring about the necessity of being a conscious nutrition literate. This result differs from the result of the study by Dilsiz (2020). In his study, the researcher states that the average score of the participants living with their families from the nutritional literacy scale is high.

The level of healthy lifestyle behaviors was also higher in individuals living alone at home. This finding can be explained as follows: The healthy nutritional status of individuals living alone also positively supports their lifestyles. However, it can be an indication that there is a correct ratio between nutritional literacy and healthy lifestyle behaviors.

In the literature, in the study conducted by Bozdoğan and Yılmazel (2019), it was seen that the nutritional literacy level of the participants who stated that they never consumed fast-food type foods was high. In a study conducted by Ertop et al. (2012), a significant change was found between

university students' adequate and balanced nutritional status and healthy lifestyle behavior levels. In this study, the mean NLS and HPLP II scores of the individuals were determined to be high according to their healthy nutritional status. This is an indication that individuals mark the items with understanding and consciously. It is predictable that an individual who thinks that he or she lives and eats healthy is nutritionally literate. The results of the studies given above showed parallelism with the results of the current study.

In this study, it was determined that there was a moderately positive and significant correlation between NLS and HPLP II. This result indicates that when NLS scores increase, HPLP II scores also increase. This is a significant situation; because individuals with nutritional literacy are also expected to have high healthy lifestyle behaviors. It is obvious that the health status of individuals who know nutrition and are conscious consumers will also improve positively. In a study conducted by Demirci Apaydın and Çelik (2022) in the literature, a weak positive relationship was found between the nutritional literacy of the participants and their healthy lifestyle behaviors. In a study conducted by Mertoğlu et al. (2020), it was determined that the effect of nutrition education on healthy lifestyle behaviors was "very high". In a study conducted by Mertoğlu (2019), it was determined that the interdisciplinary nutrition education given to teacher candidates had a positive effect on healthy lifestyle behavior levels.

## **Limitations**

This research can also be conducted with different research models with larger sample sizes, measuring a wider range of demographic variables, and form a longer perspective.

## **Conclusion**

In this study, the relationship between prospective teachers' nutritional literacy and healthy lifestyle behaviors was examined according to various variables. The conscious acquisition of nutritional literacy in individuals will also bring healthy lifestyle behaviors. Arslan and Mertoğlu (2022) examined the relationship between media literacy and nutritional literacy, which is different from the subject of the research but related to it. Researchers stated that there is a strong positive relationship between the two variables. It is difficult to underestimate the power of the media today. The introduction, analysis and presentation of foods in the media will be understood more clearly and accurately by individuals who are nutritionally literate. Therefore, the media can affect both the nutritional literacy and healthy lifestyles of individuals. The result of this sub-problem in this research -except Dilsiz (2020), no other study has been found in the literature- can be seen as a new

contribution about whether nutritional literacy depends on where individuals live to the literature. Similarly, no other study has been found in the literature examining the change of healthy lifestyle behaviors in terms of where individuals live. Again, one of the sub-problems of this research sought an answer to this question. Therefore, this result can distinguish the article from similar ones.

In addition, there is a moderate and positive relationship between healthy lifestyle behaviors and nutritional literacy. No other study has been found in the literature examining a moderate and positive relationship between healthy behaviors and nutritional literacy, this can be seen new contribution in the literature.

When the results of the research are examined;

- Due to the lower nutritional literacy of male participants, seminars, training and even events on nutrition and healthy life can be organized for these individuals. In the media, advertisements, spot news, etc. can be arranged for this result of the research, and studies can be carried out to improve the nutritional literacy of men.
- This research was carried out with prospective teachers, and the same study can be conducted with teachers from different branches and students from all levels.
- Studies, seminars, training and activities on nutritional literacy can be organized not only for university students but also for students from all levels.
- Different from the subject of this research, the relationship between nutritional literacy and different variables can be looked at.
- Relational survey, which is a quantitative research method, was used in this study. By reusing the same topic, the study can also be carried out with qualitative data collection tools (observation, interview, focus group interview).

## References

- Abbasi, S., Kamali, K., Sepehrinia, M., Mehdizade, S. (2020). The relationship between self- efficacy and health-promoting lifestyle in students. *Journal of Holistic Nursing and Midwifery*, 30(3):159-165.
- Ahmadi, A., Roosta, F. (2015). Health knowledge and health promoting lifestyle among women of childbearing age in Shiraz. *Women's Health Bulletin*, 2(3). DOI: <https://doi.org/10.17795/whb-25342>
- Akgun Kostak, M., Kurt, S., Sut, N., Akarsu, Ö., Ergul, G.D. (2014). The healthy lifestyle behaviors of nursing and classroom

- teacher students. *TAF Preventive Medicine Bulletin*, 13(3):189-196.
- Aksoy, T., Ucar, H. (2014). Healthy lifestyle behaviors of nursing students. *Journal of Hacettepe University Nursing Faculty*, 1(2): 53-67.
- Aktas, N., Ozdogan, Y. (2016a). A study of the state of knowing the nutritional literacy concept in Turkey. *Researchers World*, 7(2): 46-52.
- Aktas, N., Ozdogan, Y. (2016b). Food and nutrition literacy. *Harran Journal of Agriculture and Food Sciences*, 20(2):146-153.
- Arslan, D., Mertoglu, H. (2022). The relationship between university students' nutritional literacy levels and media literacy levels. *Journal of Sustainable Educational Studies*; (O1): 271-280.
- Ayer, C. (2018). Current status of nutrition literacy among adolescents in Civril region and affecting factors. Master thesis. Pamukkale University Institute of Health Sciences, Turkey.
- Bahar, Z., Beser, A., Gordes, N., Ersin, F., KISSAL, A. (2008). Validity and reliability study of the healthy lifestyle behaviors scale II. *Journal of Cumhuriyet University School of Nursing*, 12(1): 1-13.
- Bari, N.N. (2012). Nutrition literacy status of adolescent students in Kampala District.
- Bozdogan, S., Yilmazel, G. (2019). Nutritional literacy, dietary habits and food label use in adolescents. 3. International 21. National Public Health Congress.
- Chandrasekara, C.H.M.Y.R., Jayasinghe, M.A., Mallikarachchi, M.A.D., Senadheera, Cihangiroglu, Z., Deveci, S.E. (2011). Healthy lifestyle behaviors of Firat University Elazig Health School students and affecting factors. *First Medical Journal*, 16(2): 78-83.
- Davis, B., De Guzman, S. (2022). Validity and reliability evidence of health-promoting lifestyle profile (HPLP)-II among nursing students: A confirmatory factor analysis. *Teaching and Learning in Nursing*, 17(4). DOI: <https://doi.org/10.1016/j.teln.2022.05.009>
- Demir Ozdek, G., Ozcebe, L.H. (2018). Nutritional literacy, nutritional behaviors and related factors of a university staff. *Turk J Public Health*, 16(3):178-189.
- Demirci Apaydin, Z., Celik, B. (2022). The relationship between food literacy and healthy lifestyle behaviors. *BSU Journal of Social Sciences*, 7(1): 104-110.
- Dilsiz, B. (2020). Evaluation of nutrition literacy and obesity prevalence in high school students. Master thesis. Sanko University Department of Nursing, Turkey.
- Ertop, N.G., Yilmaz, A., Erdem, Y. (2012). Healthy lifestyles of university students. *Journal of Kirikkale University Faculty of Medicine*, 14(2): 1-7.
- Gomleksiz, M., Yakar, B., Pirincci, E. (2020). Healthy lifestyle behaviors of medical school students and related factors. *Dicle Medical Journal*, 47(2): 347-358.
- Hall, S. (2002). Inkster Schools Face State Takeover. Detroit News, April 10. Available at: <http://www.detnews.com/2002/schools/0204/10>
- Hsu, S.H. (2011). Cost information and pricing: Empirical evidence. *Contemporary Accounting Research*, 28(2):554-579. DOI: <https://doi.org/10.1111/j.1911-3846.2010.01051.x> [https://www.sagepub.com/sites/default/files/upm-binaries/57732\\_Chapter\\_8.pdf](https://www.sagepub.com/sites/default/files/upm-binaries/57732_Chapter_8.pdf)
- Kame, S.T. (2022). Nutrition education for the community. November 28. Available at: [https://www.researchgate.net/publication/364908709\\_Nutrition\\_Education\\_For\\_The\\_Community](https://www.researchgate.net/publication/364908709_Nutrition_Education_For_The_Community)
- Lopes Sousa, P.M., Gaspar, P., Vaz, D., Anjos Dixe, M.D. (2014). Measuring health-promoting behaviors: Cross-cultural validation of the health-promoting lifestyle profile-II. *International Journal of Nursing Knowledge*, 26(2). DOI: <https://doi.org/10.1111/2047-3095.12065>
- Mertoglu, H. (2019). Effects of interdisciplinary nutrition education on prospective science teachers' development of healthy lifestyle behaviors. *Journal of Education and Training Studies*, 7(12): 52-65.
- Mertoglu, H., Senoz, A.B., Bahar, A. (2020). The effect of nutrition and sexual health education on healthy lifestyle behaviors of preservice teacher. *European Journal of Alternative Education Studies*, 5(1): 54-70.
- Nettleton, D. (2014). Pearson Correlation. Science Direct, May 2. Available at: <https://www.sciencedirect.com/topics/computer-science/pearson-correlation>
- Nutritional habits of Süleyman Demirel University students. S. D. Ü. *Journal of Medicine Faculty*, 18(2): 43-47.
- Ozdenk, G. D., Ozcebe, L. H. (2018). Nutritional literacy of university employees, feeding behaviors and related factors. *Turkish Journal of Public Health*, 16(3): 178-189.

- Ozenoğlu, A., Gun, B., Karadeniz, B., Koc, F., Bilgin, V., Bembeyaz, Z., Saha, B.S. (2021).
- Ozdenk, S. (2020). Investigation of nutritional literacy levels of young athletes (Sinop Province Sample). *International Sport Science Student Studies*, 2(2):121-129.
- Ozmert, E.N. (2005). Suuporting early childhood development-I: Nutrition. *Journal of Child Health and Disease*, 48:179-195.
- Ozyazıcıoğlu, N., Kılıc, M., Erdem, N., Yavuz, C., Afacan, S. (2011). Determination of healthy lifestyle behaviors of nursing students. *International Journal of Human Sciences*, 8(2):277-332.
- Pak, E.N. (2020). Investigation of teachers' nutrition literacy status and nutritional habits according to the three-factor nutrition questionnaire (TFEQ). Master thesis. Ankara Yıldırım Beyazıt University Institute of Health Sciences, Turkey.
- Pekcan, G. (2012). Determination nutritional status. Ministry of Health of Republic of Turkey: Ankara.
- Rawat, A. S. (2021). An Overview of Descriptive Analysis. Analytics Steps, May 1. Available at: <https://www.analyticssteps.com/blogs/overview-descriptive-analysis>
- S.P.A.S., Weerasinghe, S., Zahra, S.M. (2022). Assessment of nutrition literacy and accuracy of nutrition journalism in selected social segments of Sri Lanka. Proceedings of the Young Scientists' Conference on Multidisciplinary Research-2022 Young Scientists' Association, National Institute of Fundamental Studies.
- Sahu, P., Singh, A., Verma, N., Verma, D.K. (2022). Nutrition education inside Advances in Nutrition. Publisher: Akinik Publications.
- Saygin, M., Ongel, K., Caliskan, S., Yagli, M.A., Has, M., Gonca, T., Kurt, Y. (2011).
- Silk KJ, Sherry J, Winn B, et al. (2008) Increasing nutrition literacy: Testing the effectiveness of print, web site, and game modalities. *Journal of Nutrition Education and Behavior*,40: 3-10.
- Sonay Turkmen, A., Kalkan, I., & Filiz, E. (2017). Adaptation of the adolescent nutritional literacy scale into Turkish: a validity and reliability study. *DBHAD*, (10): 1-16.
- Survey and Correlational Research Design. (2022). April 29. Available at:
- Tamel, Z.G. (2018). Determination of nutrition literacy levels of teacher and teacher candidates and their views on healthy eating. Master thesis. Kastamonu University Institute of Natural and Applied Science, Turkey.
- The relationship between nutritional literacy in adults and attitudes towards healthy eating and body mass index. *Life Sciences*, 16(1): 1-18.
- Thomas, L. (2023). Simple random sampling: definition, steps & examples. Simple random sampling, July 15. Available at: <https://www.scribbr.com/methodology/simple-random-sampling/#:~:text=A%20simple%20random%20sample%20is,equal%20chance%20of%20being%20selected>
- Trent, J.W. (1964). The development of intellectual disposition within catholic colleges.Ph.D. diss., University of California, Berkeley.
- Uganda. Master thesis. Oslo and Akhreis University College of Applied Sciences.
- Vural, P.I., Bakir, N. (2015). Healthy lifestyle behaviors of vocational school students and affecting factors. *Acibadem University Journal of Health Sciences*, 1: 36-42.
- Walker, S.N., Hill-Polerecky, D.M. (1996). Psychometric evaluation of the health promoting lifestyle profile II. Unpublished Manuscript, University of Nebraska Medical Center.
- WHO. (1999). Healthy Living. July 15. Available at: [https://apps.who.int/iris/bitstream/handle/10665/108180/EUR\\_ICP\\_LVNG\\_01\\_07\\_02.pdf](https://apps.who.int/iris/bitstream/handle/10665/108180/EUR_ICP_LVNG_01_07_02.pdf)
- Zoellner, J., Connell, C.L., Bounds, W., Yadrick, K. (2009). Nutrition literacy status and preferred nutrition communication channels among adults in the Lower Mississippi Delta. *Preventing Chronic Disease*, 6(4): A128.

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# Issues with Chinese Preschool Education and Implications of the Preschool Education Law of the People's Republic of China (Draft)

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**Abstract:** *The release of the Preschool Education Law of the People's Republic of China (Draft) marks the state's emphasis on the importance of early childhood education at the legislative level. The law reaffirms the significance of building a more scientific preschool education system that respects the characteristics of child cognitive development. This article elaborated on the issue of advanced education in China's pre-primary institutions as well as its harms and highlighted the implications of the Preschool Education Law for developing a more scientific pre-primary education curriculum.*

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## **Introduction**

**P**RESCHOOL education lays the groundwork for individuals' lifelong education and thus should be seen as an essential public welfare service (State Council of China, 2018). In November 1949, under the newly established Ministry of Education of the People's Republic of China, the Department of Primary Education set up the Section of Early Childhood Education, the first central-level organization in China specializing in preschool education regulation. In October 1951, the State Council issued the "Decision on Reforming the Educational System", initiating organized and structured preschool education in New China (Department of Planning and Construction of the State Education Commission of China, 1987).

Preschool children are experiencing a transition from being taken care of by the family to living a school life, a vulnerable period of life highlighted by their physical and mental immaturity. They are by nature active and more often emotional than rational. Hence, education for this group should be filled with positive elements such as love, respect, and encouragement (Gordon & Browne, 2016). An ideal educational environment for preschoolers should be relaxing, safe, and compatible with their cognitive levels, where they can learn through perceptual experiences, hands-on activities, collaborative interactions, exploration, and creation in the form of games (Yu, 2021). However, due to the prevalent utilitarian orientations, there have been wrong attitudes towards early childhood education, instigating severe problems with preschool education (Yang et al., 2021).

In the milieu of harsh education and employment competitions, numerous Chinese parents take the view that children should begin to learn elementary knowledge in kindergarten to get well prepared for primary education. As a result, advanced education for preschoolers has become increasingly common (Jin, 2022). In response to the challenges prevalent in this sector, including the above issue, the call for legislation targeting preschool education from all stakeholders is intensifying. On June 2, 2023, the Executive Meeting of the State Council of China approved the Preschool Education Law of the People's Republic of China (Draft) [hereinafter referred to as Preschool Education Law (Draft)], which aims to regulate pre-primary education for 3-6-year-olds (State Council of China, 2023), and submitted it to the fifth meeting of the Standing Committee of the 14th National People's Congress for review in August 2023. It consists of 74 articles grouped into eight sections, including general principles, planning and operation, care and education, preschool staffing, sources of funding, regulation and supervision, legal responsibilities, and supplementary provisions. Regarding preschool curricula, the law explicitly stipulates that kindergartens should scientifically implement care and education based on the characteristics of the physical and mental development of preschool-age children and that learning materi-

als or instructional methods used in primary education must not be administered to preschoolers (Jiang & Wang, 2023).

## **The Prevalence of Advanced Education in Chinese Kindergartens**

According to a survey conducted by China Youth Daily, in 2018, when asked about advanced education in kindergartens, 81.1% of respondents said that the problem was bad in their nearby kindergartens, with 19.8% saying it was very bad. 54.0% said that nearby kindergartens teach Pinyin, literacy, and numeracy, which should be part of the primary curriculum, and 47.4% said that kindergartens use textbooks to teach subject-based content and give written homework (Wang, 2021).

### ***Manifestations of Advanced Education in Chinese Kindergartens***

Advanced education in kindergartens refers to the phenomenon that instruction of primary-level knowledge and skills is conducted in advance in kindergartens, using methods that do not suit the characteristics of preschoolers' cognition, with utter disregard for the principles underlying early childhood education (Yao, 2017). Specific signs include teaching primary school learning content such as Pinyin, literacy, computer science, and English in non-game environments; requiring preschoolers to carry out intensive training activities such as rote memorization and copying; lacking activity areas for specific purposes as relevant national standards mandate; and no equipment of game-based teaching aids or reading materials suiting the actual development level of young children. Furthermore, upon entering primary education, first graders may face tests assessing knowledge and skills that are expected to be developed during their subsequent years in primary school, rather than skills acquired during preschool education (Sun & Ma, 2021).

### ***Causes of Advanced Education in Chinese Kindergartens***

#### **Ripples of Examination-Oriented Education**

In China, the education process is like a chain, with all education levels being interlocked links. Higher education stands at the top of the chain. The pressures of the college entrance examination, a high-stakes exam, ripple over the whole chain, and as a result, preschool education becomes an exten-

sion of basic education (it includes primary and secondary education in China) (Liu, 2014). Preschool education, as the link preceding primary education, is often seen as a part of the latter. A primary education environment is created in kindergarten by implementing primary schools' curricula, instructional approaches, evaluation methods, etc. (Tuo, 2013). Consequently, pre-primary education has deviated from its original purpose of promoting children's healthy development and has become a competitive tool in the educational rat race.

## Sacrifice of Scientific Preschool Education Ideas

High-quality preschool education seeks to promote holistic child development by creating learning experiences. These experiences should be built on the child's competence and be challenging but within reach. To this end, educators must be sensitive to the developmental characteristics of young children (National Research Council, 2001).

The Ministry of Education of China (2001) issued "Guidelines for Kindergarten Education," emphasizing that preschool education must pay attention to the development level of each individual child. "Guiding Opinions on the Reform and Development of Early Childhood Education" reiterates that pre-primary institutions must respect the physical and mental development state of children and the variations among individuals (State Council of China, 2003). Nevertheless, in recent years, a sizeable portion of kindergartens have sacrificed scientific education ideas to pursue more profits. They introduce the primary curriculum into preschool instruction and use this as an attraction to garner the attention of parents with "extra education needs." By doing so, they succeed in increasing the enrolments of students and, consequently, revenues, but exacerbate the problem of advanced education at the pre-primary level (Wang, 2021).

## Shortages of Qualified Preschool Teachers

Bolstering kindergarten staffing is one of the major purposes of releasing "Several Opinions of the State Council on Deepening the Reform and Regulating the Development of Preschool Education" (State Council of China, 2018). The paper stresses that preschool institutions should employ qualified staff and should not use substitute teachers for a long period of time; that the accreditation system for preschool teachers and principal qualifications must be stringently implemented to ensure the quality of teaching staff; and that graduates of non-preschool education backgrounds must first receive relevant professional training and obtain preschool teacher credentials before teaching in kindergartens. However, both public and private kindergartens face shortages of quality teachers. Some of the teachers in service have not

received any professional training in early childhood education. These teachers lack expertise in creating and implementing preschool curricula and thus resort to learning content, pedagogies, evaluation standards, and class management relevant to primary education in their preschool careers. This is one of the main sources of advanced education in kindergartens (Rao, 2017). Even though an increasing number of preschool education-major graduates with junior college degrees or above have been recruited by kindergartens as a result of the rapid growth of the preschool education sector in China in recent years, these novice teachers have difficulty adhering to advanced, scientific preschool education concepts and unwillingly opt to adopt the prevalent advanced education in their work (Wang, 2021).

## Parents' Unreasonable Expectations

Advanced education in kindergartens occurs in a peculiar social context. For some parents, the pursuit of excellent performance in their young children has become the primary goal of the whole family, no matter how incompatible it is with the latter's cognitive and psychological levels (Zhao, 2018). To make their kids outstanding among peers, these parents may send them to so-called "high-quality" preschool institutions such as bilingual kindergartens and sky-high-priced nursery schools and enroll them in all sorts of extracurricular training programs entailing Pinyin, arithmetic, art, dance, music, basic English, and more (Jin, 2011). Their behaviors incite more parents to follow suit, thus inducing a vicious circle (Guo, 2019).

## Harms of Advanced Education for Preschool Children

Nature wants children to remain children before they grow into adults. Disrupting this natural course will result in the production of some aging children, comparable to precocious fruits that are neither fully grown nor sweet and are likely to go rotten soon (Rousseau, 1911). While advanced education seems to have promotional effects on early child development, it truly disrupts the natural course of child growth and impairs children's physical and mental development. In the meantime, it hampers the healthy development of the whole early childhood education sector (Wei Liang, 2012).

## *Detrimental to Child Development*

Early childhood is an important stage in which children develop a preliminary understanding of the world, mainly through perceptual experiences. Advanced, subject-based learning in kindergartens deprives children of their

play time, thus reducing their opportunities to explore autonomously and inhibiting their curiosity about the world. This is unfavourable to their healthy mental development (Wang, 2005). Also, the emphasis on content knowledge acquisition over moral and character building and social development is likely to lead to complications in the child's adulthood, such as a lack of self-confidence, difficulty with interpersonal relationships, and confusion in self-concept (Zhao & Deng, 2022). Furthermore, too much schoolwork brought on by advanced education significantly lessens the child's interactions with their peers, impeding the development of collective and teamwork consciousness in them. The lack of social skills may result in social disorders in young children, such as being abnormally silent in social settings (Chen, 2021).

Young children are experiencing fast physical growth as well as physical vulnerability in the preschool phase. A 40-minute session of concentrated learning may harm their vision, increasing the risk of myopia; sedentary behaviour can cause muscle fatigue and problems with bone growth; and engaging in cognitive activities of disproportionate levels of difficulty may have adverse effects on the development of the nervous system in young children. Therefore, unscientifically advanced education is detrimental to the physical development of preschoolers (He, 2018).

It is noteworthy that the assumed edge generated by advanced education is actually disadvantageous to the child's learning in subsequent stages. There is a hierarchical relationship between preschool and primary education, with the latter building on the former (Liu, 2014). The primary education curriculum is beyond the cognitive ability of some preschoolers, and thus its advanced implementation may lead to learning fear and academic weariness in them. Also, the content advanced to the preschool phase will be repeated in the primary instruction, which discourages students' engagement in learning and contributes to their passive attitudes towards study. Thus, in the long run, students with advanced education experience may fall behind (Song, 2019).

### ***Adverse Impact on the Preschool Education Profession***

The classification of education levels is based on the evolving capacities of children, which necessitates differential curricula and instructional methods at different ages. Both advanced and delayed education incompatible to the child's natural needs have negative effects on their development (Rao, 2017). The Ministry of Education's "Guidelines for Kindergarten Education" underscore five principles for kindergarten education: (i) respecting the personal dignity and legal rights of children; (ii) contributing to harmonious physical and mental development; (iii) integrating education in day-to-day care; (iv) recognizing differences among individuals; and (v) implementing

game-based curricula (Ministry of Education of China, 2001). The prevalent practices of teaching primary curriculum in kindergartens are in violation of any of these principles.

At the same time, advanced education in kindergartens is a waste of educational resources. Classroom-based instruction for preschoolers means low utility of those facilities intended for game-based curricula. Also, if the initial years of primary education are spent on repeating learning materials that have been delivered in kindergartens, what is the point of deploying pre-primary institutions (Liu, 2021)?

## **The Significance of the Preschool Education Law in China**

### ***Background of China's Preschool Education Law***

At present, preschool education remains a weak link in the national education system in China. Despite the wide range of early childhood education regulations, from 1904's "Imperial Regulations of Preschool Education and Family Education" (Gu, 1998) to 2018's "Opinions on Deepening the Reform of Preschool Education and Regulating its Development" (State Council of China, 2018), there is still a lack of explicit legislation on preschool education, hindering its quality improvement.

From a global point of view, preschool education development is heavily reliant on legal backing from the state in both developed and developing countries. Germany's "Good Daycare Law" and "Child Welfare Act" stipulate that pre-primary institutions are obligated to provide quality preschool education (Liu, 2018). With "Investing in the Early Years: The National Strategy for Early Childhood Development" and the "National Quality Framework for Preschool Education and Childcare," the Australian government provided the bedrock for a healthy development of the country's preschool education (Wu, 2015). In Brazil's "National Education Plan" and "National Preschool Education Policy," there are provisions on the quality standards of preschool education (Pang & Xia, 2013). These examples illustrate the international community's unwavering commitment to improving the quality of early childhood education.

In the context of the national strategy for education development and growing public interest in early childhood education, the Chinese government has been pushed to undertake legislative endeavors to improve preschool education. In 2018, the Standing Committee of the 13th National People's Congress included the legislation on preschool education in the priority category in legislative planning, marking the official initiation of the legislative process of preschool education law (Jiang, 2022). In 2020, the

Ministry of Education made public the Preschool Education Law of the People's Republic of China (Draft for Soliciting Opinions) to solicit comments from the public (Ministry of Education of China, 2020). On August 28, 2023, the Preschool Education Law of the People's Republic of China (Draft) was submitted to the Fifth Session of the Standing Committee of the 14th National People's Congress for review (State Council of China, 2023).

## ***Implications of the Preschool Education Law for Pre-Primary Curriculum Development***

- Taking the Characteristics of Young Children's Physical and Mental Development as the Primary Consideration

The section on "General Principles" of Preschool Education Law (Draft) stresses that the main purpose of preschool education is to promote the holistic development of children by executing an education that suits their physical and mental development needs. Article 13 states that the law guarantees the right of the preschool-age child to education—an education prioritizing the best interests of the child. Article 31 says that kindergartens must devise scientific childcare and educational activities that conform to relevant national regulations and are consistent with the age characteristics of preschool children (Ministry of Education of China, 2023). Young children are at a special stage of development. To respect the physical and mental development state of young children, it is essential to treat them as actors with unique qualities and needs (Ministry of Education of China, 2012). A scientific view of education is crucial to a preschool education that seeks to support children to adapt to society and nature, build character, and develop potent communication and interaction competences.

Comenius, known as the "father of modern education," has been highly acclaimed for his idea of "education according to nature," an important component of which is the notion that education should suit the natural development of young children marked by their age characteristics (Comenius, 1986). Rousseau expressed the idea of natural education in *Emile, or Education*, suggesting that the best thing humans can do for their own education is to participate in, and avoid interfering with, nature's way (Rousseau, 1911). Today, child-centered natural education has become a widely accepted concept in the international preschool education community and, recently, has garnered the attention of Chinese early childhood educators. The introduction of the philosophy of natural education has the potential to help remove illegitimate practices in Chinese preschool education, such as advanced education, as well as contribute to reforming early childhood educa-

tion concepts and enriching pre-primary education methods in China (Shan, 2020).

- Adhering to Game-based Preschool Curricula

The United Nations' Convention on the Rights of the Child (1989) recognizes the right of the child to engage in play (United Nations, 1989). As one of the parties to the convention, China issued a series of papers to protect the right of children to play. The "Guidelines for Kindergarten Education" stipulates games as the basic component of the pre-primary curriculum (Ministry of Education of China, 2001). 2012's "Guidelines for the Learning and Development of Children Aged 3-6" state clearly that preschool children should learn through direct experiences based on games or life contexts (Ministry of Education of China, 2012). However, sacrificing children's right to play to implement advanced education has been popular among Chinese kindergartens.

The Preschool Education Law (Draft) provides a legal guarantee for the right of kindergarten children to play by making it compulsory that learning activities in pre-primary education institutions are primarily based on games. Article 28 of the law states that kindergartens shall integrate education into day-to-day care, ensure all children are treated on an equal footing while respecting the qualities of each individual, pay attention to the development of good habits in students, and make games the main form of learning activities to enable preschool children to attain pre-primary education experiences that best promote their physical and mental development (Ministry of Education of China, 2023). Article 32 reaffirms the necessity of practical life-based kindergarten education programs that support, to a maximal degree, children to gain knowledge through close interaction with nature, hands-on manipulation, and personal experiences, among other activities, with a view to promoting the physical, linguistic, social, scientific, and artistic development of children in a coordinated manner (Ministry of Education of China, 2023).

Interest in games is natural for young children. Play is the optimal means for developing their personalities and social skills (Xin, 2023). According to Froebel (1897), "the father of kindergarten," play is of the highest value for human development in childhood among all activities because it is a spontaneous expression of the child's nature and fundamental needs. That is why it can always provide them with satisfaction, joy, freedom, and peace, as well as harmony with their surroundings. Froebel's learning philosophy emphasizes the importance of play, nature, and hands-on experiences while fostering a child's intellectual, emotional, and physical growth.

Children in play are the most creative, engaging in active acquisition, absorption, and transformation (Wang et al., 2018). There are many success-

ful experiments on game-based education in China, among which the “Anji Game” model is an exemplary one. The Experimental Kindergarten of Anji County developed an innovative, game-focused preschool education model. In the “Anji Game,” young children are the leading actors, having the opportunity to explore and create freely. Encouraging autonomous decisions in accordance with their interests and needs is emphasized. In other words, they have the right to decide what games to play, what activities to participate in, and what materials to use. Children’s high level of autonomy effectively boosts their confidence in decision-making and problem-solving. In the meantime, their teacher acts as an observer or facilitator, providing appropriate support and guidance depending on their development level and individual needs rather than directly telling them what to do. For example, the teacher may raise action-provoking questions such as “what kind of game do you want to play for today?” and “what materials do you need to implement your plan?” but leave the decision to students to make the game truly a child-centered activity (Du, 2023). Hence, preschool education researchers call the “Anji Game” a form of real game in which children learn by playing and establish relations between experiences through direct involvement (Li, 2019).

## **Conclusion**

The development level of a nation’s education is, to a large extent, the product of educational policies and their implementation strategies. Despite there being plural educational regulations on preschool education in China, their low legal standing has compromised their effectiveness in regulating the overall development of education at this level, resulting in certain persistent issues, such as advanced education in kindergartens. The Preschool Education Law of the People’s Republic of China (awaiting ratification) is formulated to provide legal backing for China’s future preschool education policies and their implementation. It is of great significance for the development of preschool education in China in that it not only compensates for the gap in legislation on preschool education but also can be used to address the current challenges faced by the pre-primary education community. It promises to play a substantial role in meeting the public’s needs for higher-quality preschool education in the new era.

## References

- Chen, R. (2021). The Issue of Advanced Education in Kindergartens and Solutions (master's thesis). Jiangsu University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVILn2WFQgn6PSBgm2pUvM9tiADTiRr96MH89EvqYUD9op-G-Wrr8eoxKMBb9cGsnxKqBsrDPNGcG1E5HH89Rg-hubXLqAAaesaiZW\\_S4Eq\\_5mf23Df2xZKIUin7wHic=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVILn2WFQgn6PSBgm2pUvM9tiADTiRr96MH89EvqYUD9op-G-Wrr8eoxKMBb9cGsnxKqBsrDPNGcG1E5HH89Rg-hubXLqAAaesaiZW_S4Eq_5mf23Df2xZKIUin7wHic=&uniplatform=NZKPT&language=CHS)
- Comenius, J. A. (1986). *Didáctica Magna* (Vol. 133). Ediciones Akal.
- Department of Planning and Construction of the State Education Commission of China. (1987). *China Education Statistical Yearbook*. Beijing: People's Education Press.
- Du, J. (2023). Implementation strategies of child games in the "Anji Game" model. *Shanxi Education (Preschool Education)*, 2023(07):56-57. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVkv84qtSxiyqDnLy7skLU43CZ8fy\\_K6mXap6xT22ObIwI421uEnYePjafsaLKYTR-SpJB\\_2wRhWMpHN7Stwwo\\_Cyee0VjKpYVgGUmOS4\\_GFOV1e\\_GFFKPesEUyZACQQ=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVkv84qtSxiyqDnLy7skLU43CZ8fy_K6mXap6xT22ObIwI421uEnYePjafsaLKYTR-SpJB_2wRhWMpHN7Stwwo_Cyee0VjKpYVgGUmOS4_GFOV1e_GFFKPesEUyZACQQ=&uniplatform=NZKPT&language=CHS)
- Fröbel, F. (1897). *Pedagogics of the Kindergarten* (trans. by Josephine Jarvis). New York: D. Appleton.
- Gordon, A. M. & Browne, K. W. (2017). *Beginnings & Beyond: Foundations in Early Childhood Education*. 10th edition. Boston, MA: Cengage Learning.
- Gu, M. (1998). *A Dictionary of Education*. Shanghai: Shanghai Educational Publishing House.
- Guo, M. (2019). The View of Children Held by Parents of Urban Kindergarten Students (master's thesis). Guangxi Normal University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVlcdBt16IOzuaW4kG7VnJxPdZpHo2D2degHlkbFmycm44dFpe1ZJC9onrRbvVKr5jIejIUpn-IFUz71GCC5MQpAAmV7iNqGmsBkg71T\\_LRAfVeS\\_CEmeQEWdAhc0QRSOGA=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVlcdBt16IOzuaW4kG7VnJxPdZpHo2D2degHlkbFmycm44dFpe1ZJC9onrRbvVKr5jIejIUpn-IFUz71GCC5MQpAAmV7iNqGmsBkg71T_LRAfVeS_CEmeQEWdAhc0QRSOGA=&uniplatform=NZKPT&language=CHS)
- He, Z. (2018). Theories on Mental Development of Children Aged 3-6 and Their Executive Function (master's thesis). Guangxi Normal University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVmaFV-E01uEJp8Rh\\_8XwNjIPg4QWKfgvxjsNqAQmrBEEftJkKrfleuPCaPSjNJUwyuIWShT3DTSDBhF-3fqwrcBQxuaolnjQuo4Xys6pdIoIsGI2jZLL4n8\\_N6Ar7RtM\\_E=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVmaFV-E01uEJp8Rh_8XwNjIPg4QWKfgvxjsNqAQmrBEEftJkKrfleuPCaPSjNJUwyuIWShT3DTSDBhF-3fqwrcBQxuaolnjQuo4Xys6pdIoIsGI2jZLL4n8_N6Ar7RtM_E=&uniplatform=NZKPT&language=CHS)
- Jiang, S. & Wang, P. (2023). Improving pre-school education to meet the public needs: A preliminary review of Preschool Education Law (Draft). China National People's Congress Website. Available at: [http://www.npc.gov.cn/npc/c2/c30834/202309/t20230918\\_431738.html](http://www.npc.gov.cn/npc/c2/c30834/202309/t20230918_431738.html)
- Jiang, Y. (2022). A review of local regulations of preschool education in China and improvement strategies. *Education Review*, 2022(10):42-49. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVmrD55e7Exf1ptq8s-3MstzP9IyfUmdlerL5Nfa4fF0ZFtwZBwtHLN8VP-o6JflVQ9C9DaC2kgXbNjM3QbrGi7rDOd0GDsDLQOXwURyxx7JOosEf4lodXARPGFIHj915k=&uniplatform=NZKPT&language=CHS>
- Jin, R. (2011). Advanced education in kindergartens: Signs, causes, and solutions. *Studies in Preschool Education*, 2011(3):41-43. DOI: <https://doi.org/10.13861/j.cnki.sece.2011.03.010>
- Jin, X. (2022). What kind of school education do parents expect: A survey report on needs for adaptive learning during the transition from preschool to primary education. *People's Education*, 2022(Z1):86-88. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=4u\\_pwZ3OVIAYw5TS9Y8Ti1QKu7VCEM6oh-GBU831pMb\\_GYa6ZbW\\_GorYkSHEiAXwViPUO4UPVromqIWSNSuZx\\_LibkhcqOJiixCzHZGfplcVeVKyFz2V5v7ZH6UefWb5isX9yLBFUM=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=4u_pwZ3OVIAYw5TS9Y8Ti1QKu7VCEM6oh-GBU831pMb_GYa6ZbW_GorYkSHEiAXwViPUO4UPVromqIWSNSuZx_LibkhcqOJiixCzHZGfplcVeVKyFz2V5v7ZH6UefWb5isX9yLBFUM=&uniplatform=NZKPT&language=CHS)
- Li, J. (2019). An Examination of the Daily Activity Organization under the "Anji Game" Curriculum (master's thesis). Fujian Normal University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD202002&filename=10>

- [20613658.nh](https://doi.org/10.14082/j.cnki.1673-14259284.nh)
- Liu, L. (2014). Advanced Education in Chinese Kindergartens (master's thesis). Southwest University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201402&filename=1014259284.nh>
- Liu, Q. (2018). The planned investment of 3.5 billion euros by Germany to improve its quality of childcare and preschool education. *Journal of World Education*, 2018(12):78. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVn7OSEloAQxMLup7nKAakBxfGJlvCY3jNSHWoF2nC4OhOKAQpV511wQ6ZpgPs0GQUUp1kr8H4FtBASbQKR5jW8y9HeaTR3mE7Q0g25gUXbGLxtCbLNXz-LwS97MgcbCqD6M=&uniplatform=NZKPT&language=CHS>
- Liu, W. (2021). Transition from Preschool to Primary Education in Yantai City and Recommendations (master's thesis). Shandong University. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVn7OSEloAQxMLup7nKAakBxfGJlvCY3jNSHWoF2nC4OhOKAQpV511wQ6ZpgPs0GQUUp1kr8H4FtBASbQKR5jW8y9HeaTR3mE7Q0g25gUXbGLxtCbLNXz-LwS97MgcbCqD6M=&uniplatform=NZKPT&language=CHS>
- Ministry of Education of China. (2001). Guidelines for Kindergarten Education. Beijing Normal University Press.
- Ministry of Education of China. (2012). Guidelines for the Learning and Development of Children Aged 3-6. Beijing: Capital Normal University Press.
- Ministry of Education of China. (2020). Announcement of the Ministry of Education on soliciting public opinions on Preschool Education Law of the People's Republic of China (Draft). Available at: [http://www.moe.gov.cn/jyb\\_xwfb/s248/202009/t20200907\\_485819.html](http://www.moe.gov.cn/jyb_xwfb/s248/202009/t20200907_485819.html)
- Ministry of Education of China. (2023). Preschool Education Law of the People's Republic of China (Draft). Available at: <http://www.mbxq.org.cn/u/2023090320212373499.pdf>
- National Research Council. (2001). Eager to Learn: Educating Our Preschoolers. Committee on Early Childhood Pedagogy. Bowman, B. T., Donovan, M. S., & Bums, M. S. (eds). Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.
- Pang, L. & Xia, J. (2013). International strategies for the development of preschool education: Universalization, equity, and high quality. *Journal of Educational Studies*, 2013(3):49-55. DOI: <https://doi.org/10.14082/j.cnki.1673-14259284.nh>
- Rousseau, J. J. (1911). *Emile or Education*. Translated by Barbara Foxley MA. Available at: <https://oll.libertyfund.org/title/rousseau-emile-or-education>
- Shan, Z. (2020). Promoting the natural development of children: Modern views of children in Western countries. *Civilization*, 2020(10):14-15. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVn7OSEloAQxMLup7nKAakBxfGJlvCY3jNSHWoF2nC4OhOKAQpV511wQ6ZpgPs0GQUUp1kr8H4FtBASbQKR5jW8y9HeaTR3mE7Q0g25gUXbGLxtCbLNXz-LwS97MgcbCqD6M=&uniplatform=NZKPT&language=CHS>
- Song, L. (2019). Discourse Analysis of Advanced Education in Kindergartens (master's thesis). Henan University. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVn7OSEloAQxMLup7nKAakBxfGJlvCY3jNSHWoF2nC4OhOKAQpV511wQ6ZpgPs0GQUUp1kr8H4FtBASbQKR5jW8y9HeaTR3mE7Q0g25gUXbGLxtCbLNXz-LwS97MgcbCqD6M=&uniplatform=NZKPT&language=CHS>
- State Council of China. (2003). Notice of the State Council's General Office on Circulating the Guiding Opinions of the Ministry of Education and Other Departments on the Reform and Development of Early Childhood Education. *Bulletins of the State Council of China*, 2003(12):13-16. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=KnU19XTwA1mMSbc8qLzm3oSrwJGCG39JEfsV9GXrQvEgoNJMGf2a3goSUWuSYiBTNVAYl1KPVAqUooNd9XbPS3LqJrUWfpe-OjD9u4fuGu4CPIUK186RGcV0lsJjHv47jCbEiyS0=&uniplatform=NZKPT&language=CHS>
- State Council of China. (2018). Several Opinions of the State Council on Deepening the Reform and Regulating the Development of Preschool Education. *Bulletins of*

- the Ministry of Education of China, 2018(11):2-8. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=qJbV8tG\\_OtsB5AzlVs2RNOXLkQm\\_wC9RSmHF3HDce2HO2WuyseIew7T53RPEK\\_jvEdE52cDXbHXOE25qZ0kNhIT\\_u3\\_3-Mz47rzNWG5a7uXRWzeyaY6CyOxud40DIURUiLwTM5fDiMENLA=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=qJbV8tG_OtsB5AzlVs2RNOXLkQm_wC9RSmHF3HDce2HO2WuyseIew7T53RPEK_jvEdE52cDXbHXOE25qZ0kNhIT_u3_3-Mz47rzNWG5a7uXRWzeyaY6CyOxud40DIURUiLwTM5fDiMENLA=&uniplatform=NZKPT&language=CHS)
- State Council of China. (2023). "Preschool Education Law of the People's Republic of China (Draft)" approved at an executive meeting of the State Council presided by Premier Li Qiang. Children and Health, 2023(07):9. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnWuD9zfeBbkdEJ7CY1DZwK6ORgyArXRqHddHUUFaoKcaJ9wdqf9P6FMI9Ywye82552lhzoF1L8WB\\_U0RZI3CCBSfMfh\\_70mMUUdNYWu8HePzjv8a9Z\\_xwx3OLU4hEnZ6U=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnWuD9zfeBbkdEJ7CY1DZwK6ORgyArXRqHddHUUFaoKcaJ9wdqf9P6FMI9Ywye82552lhzoF1L8WB_U0RZI3CCBSfMfh_70mMUUdNYWu8HePzjv8a9Z_xwx3OLU4hEnZ6U=&uniplatform=NZKPT&language=CHS)
- Sun, F. & Ma, L. (2021). Causes of advanced education in preschool institutions and governance. *Journal of Tonghua Normal University*, 2021(09):51-56. DOI: <https://doi.org/10.13877/j.cnki.cn22-1284.2021.09.008>
- Tuo, C. (2013). Practices of advanced education in kindergartens and countermeasures. *Journal of Shan 'xi Preschool Teachers' University*, 2013(2):97-100. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=4u\\_pwZ3OVIaAuerXkoy7LWOMH9I1DSTRviM838kdmPDeDvyhlfLvjtiHBMKBfGPVp2TPvT2XvSEWrhAqW4uSobWV5FUBKq7v6uBp6MGF7D3\\_4CuaiLVH\\_y3m7vW5iZ1wdl&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=4u_pwZ3OVIaAuerXkoy7LWOMH9I1DSTRviM838kdmPDeDvyhlfLvjtiHBMKBfGPVp2TPvT2XvSEWrhAqW4uSobWV5FUBKq7v6uBp6MGF7D3_4CuaiLVH_y3m7vW5iZ1wdl&uniplatform=NZKPT&language=CHS)
- United Nations. (1989). Convention on the Rights of the Child 1989. Available at: <https://www.ohchr.org/sites/default/files/Documents/ProfessionalInterest/crc.pdf>
- Wang, C. (2005). Games in kindergartens: The restoration of preschoolers' agency. *Journal of Educational Development (Preschool Education)*, 2005(3):8-10. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=DxGmxfkPoHLwnZJS62QSmvN2NkK6Yf29XyJ7mF32BvRrRrXaq64b\\_LNKUsP3mJjtySjOi1O\\_eWLQD0qk6iVG-OiBXooyrvwrTIR7GT4tKN7RVUQTiaj1\\_9sbtQpoFemamFelOR8dZk=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=DxGmxfkPoHLwnZJS62QSmvN2NkK6Yf29XyJ7mF32BvRrRrXaq64b_LNKUsP3mJjtySjOi1O_eWLQD0qk6iVG-OiBXooyrvwrTIR7GT4tKN7RVUQTiaj1_9sbtQpoFemamFelOR8dZk=&uniplatform=NZKPT&language=CHS)
- Wang, N. (2021). Advanced education in pre-primary education institutions: Practices, causes, and intervention. *Journal of the West*, 2021(19):116-119. DOI: <https://doi.org/10.16721/j.cnki.cn61-1487/c.2021.19.035>
- Wang, Y. (2021). The Image of Preschool Teachers in Mass Media from 2011 to 2020 (master's thesis). Southwest University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD202201&filename=1021767132.nh>
- Wang, Z, Qin, G., & Lin, Y. (2018). Understanding Chinese children for developing early childhood education in China: Commemorating Heqin Chen's 125th birthday. *Studies in Preschool Education*, 2018(1):3-12. DOI: <https://doi.org/10.13861/j.cnki.sec.2018.01.001>
- Wei, L. (2012). Advanced education in pre-school education institutions: A skewed education. *Basic Education Curricula*, 2012(12):18. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=4u\\_pwZ3OVIaAuerXkoy7LWOMH9I1DSTRviM838kdmPDeDvyhlfLvjtiHBMKBfGPVp2TPvT2XvSEWrhAqW4uSobWV5FUBKq7v6uBp6MGF7D3\\_4CuaiLVH\\_y3m7vW5iZ1wdl&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=4u_pwZ3OVIaAuerXkoy7LWOMH9I1DSTRviM838kdmPDeDvyhlfLvjtiHBMKBfGPVp2TPvT2XvSEWrhAqW4uSobWV5FUBKq7v6uBp6MGF7D3_4CuaiLVH_y3m7vW5iZ1wdl&uniplatform=NZKPT&language=CHS)
- Wu, D. (2015). Legislation of Preschool Education in Australia and its Enforcement (master's thesis). East China Normal University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnTxFJh-QuHwflYeYlh3jhH0WigWDIJbd-LAfL6w5NbSe9HzaOx\\_HyG4bkNHf8H-6hyw\\_Yt\\_NKC\\_bUThie8b\\_JYtOiD-MtNtgJOYjvY7gEdbEEZ2y7tnbKRHGIp\\_sLlouA=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnTxFJh-QuHwflYeYlh3jhH0WigWDIJbd-LAfL6w5NbSe9HzaOx_HyG4bkNHf8H-6hyw_Yt_NKC_bUThie8b_JYtOiD-MtNtgJOYjvY7gEdbEEZ2y7tnbKRHGIp_sLlouA=&uniplatform=NZKPT&language=CHS)
- Xin, J. (2023). Practical Research on the Development of Game-based Curriculum in Kindergartens Based on the Child-centered Concept (master's thesis). Qinghai Normal University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnkjbDX65DbjLdwchG8Xkv8NdrFrpXpiVmYlkmTw03llqmn43OrrkT4gV7Kd5FLs43au8nizJkRHEPrdctysLTGWpW\\_jFunjvA7k6yft2QDQxi9Z\\_O6u9MDk8izkYxeUjuE=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnkjbDX65DbjLdwchG8Xkv8NdrFrpXpiVmYlkmTw03llqmn43OrrkT4gV7Kd5FLs43au8nizJkRHEPrdctysLTGWpW_jFunjvA7k6yft2QDQxi9Z_O6u9MDk8izkYxeUjuE=&uniplatform=NZKPT&language=CHS)
- Yang, C., Zhu, X., & Che, Y. (2021). Reflec-

- tions on the prohibition of advanced education in kindergartens and reconstruction of preschool education. *Journal of Jiaozuo Normal College*, 2021(2):53-56. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=4u\\_pwZ3OVIAdJcFU8toLYoLSemkIXI15\\_9AcgvZrvll6s73v0g3m-M3YwEVVqfNWZSA4hJwdwol1Oih3wTaG8KHXuUVA37Hwfref5Jf0C-jCvF54dmlCTRBCagNzxPvaNCcO27kX4R4=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=4u_pwZ3OVIAdJcFU8toLYoLSemkIXI15_9AcgvZrvll6s73v0g3m-M3YwEVVqfNWZSA4hJwdwol1Oih3wTaG8KHXuUVA37Hwfref5Jf0C-jCvF54dmlCTRBCagNzxPvaNCcO27kX4R4=&uniplatform=NZKPT&language=CHS)
- Yao, Y. (2017). *The Issue of Advanced Education in Kindergartens and Countermeasures* (master's thesis). Henan Normal University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201801&filename=1017120664.nh>
- Yu, B. (2021). *Implementation of Kindergarten Curricula under the Concept of Non-lecture-based Teaching* (master's thesis). Hunan Normal University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD202201&filename=1022429052.nh>
- Zhao, K. (2018). *Views of Child Education Reflected in the Implementation of Policies on the Transition from Preschool and Primary Education* (master's thesis). Guangxi Normal University. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVmIbG-YMUwuPBOYnhTEiKjubDRTpZiSeW4Nj\\_W9nKa7pXYKdjP34DdFukwSflPVt9HUMmuufKvQ8Q128pXt7\\_SXk5QfkC1s-9qymfYtoYBQZpOoaw5Ngr-p2-8g0mOjiJc=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVmIbG-YMUwuPBOYnhTEiKjubDRTpZiSeW4Nj_W9nKa7pXYKdjP34DdFukwSflPVt9HUMmuufKvQ8Q128pXt7_SXk5QfkC1s-9qymfYtoYBQZpOoaw5Ngr-p2-8g0mOjiJc=&uniplatform=NZKPT&language=CHS)
- Zhao, L. & Deng, H. (2022). *Root causes of primary school freshmen's academic weariness: The harm and causes of advanced education in the transition from preschool to primary education and countermeasures.* *Science Information*, 2022(9):66-68. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVn6sjutfg-PlZt6pXzFwJnLeEfhGiWn60fS322b9QldBINlkchmCZbOMTtykqNOekOvAqofHmbU6dInc6g9gAHnYhSVasCEifNo7i4p4VuWFq4e7LbSj9Vf38NBy8BH9c=&uniplatform=NZKPT&language=CHS>

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# Legal Guarantee and Governmental Responsibility in Chinese Preschool Education Development: Roles of the Preschool Education Law of the People's Republic of China

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**Abstract:** *The Preschool Education Law of the People's Republic of China (Draft) is instituted in response to issues arising in the development of Chinese preschool education, such as a lack of explicit definitions of governmental responsibility, incomplete regulation mechanisms, and insufficient general accessibility of preschool services. This article focuses on discussing the law's significance for building a preschool education system that aims to provide pre-primary service as a public good and is under stringent regulation at all levels of government.*

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THE equity and quality of preschool education have significant impacts on a nation's development as well as the future achievement of individuals (Shi, 2022). La Chalotais states in his *Essay on National Education* that the responsibility of education shall be primarily assumed by the state because education, particularly child education, is a national affair in nature (as cited in Wu, 1989). UNESCO's World Conference on Early Childhood Care and Education (2010) also emphasizes that the government should act as the main provider of early childhood care and education, who must formulate potent and clear policies to ensure fairness in quality and quantity of early childhood education and establish solid legislation to guarantee the right of the child to preschool education (Feng & Zhou, 2011).

China initiated the nationwide construction of early childhood education in the 1950s (Sun, 2021). Against the backdrop of its reform and opening up, the Chinese government encouraged government agencies, troops, schools, factories, mines, and other enterprises to establish early childhood care and education institutions such as nursing rooms, day care centers, and kindergartens to meet the increased needs of the public in this regard (Zhang, 2022). In the meantime, the marketization of preschool education has been intensifying. However, there has been a lack of mature legislation for the regulation of preschool education, resulting in the absence of effective governance mechanisms (Sun, 2021).

Legislative endeavors are highly necessary for the long-term development of preschool education in China. In September 2018, the Standing Committee of the 13th National People's Congress of China included the legislation on preschool education in the priority category of legislative planning, marking the official initiation of the legislative proceedings of the Preschool Education Law (Hou, 2022). In September 2020, the Ministry of Education made public the Preschool Education Law of the People's Republic of China (Draft for Soliciting Opinions) to solicit comments from the public (State Council of China, 2020). In June 2023, the Executive Meeting of the State Council of China approved the Preschool Education Law of the People's Republic of China (Draft) [hereinafter referred to as the Preschool Education Law (Draft)] and submitted it to the fifth meeting of the Standing Committee of the 14th National People's Congress for review in August 2023 (State Council of China, 2023).

The Preschool Education Law (Draft) represents the Chinese government's strategies for the reform and development of preschool education and its determination to augment the supply of public pre-primary services, as well as its commitment to universalizing preschool education; it also officially defines pre-primary education as the initial phase of formal schooling. Hence, it marks a vital effort in advancing the construction of an education

system that serves the needs of the whole population for lifelong education (Pu, 2023).

## **The Evolution of Preschool Education in the People's Republic of China**

Preschool education development experienced a shift from the state-run paradigm to plural forms of ownership in New China. On the founding of the People's Republic of China, the Chinese government took over all private kindergartens while establishing public kindergartens. In the meantime, the government mobilized diverse forces to develop early childhood education in enterprises including factories, mines, and villages and established a preschool education system where kindergartens run by state-owned and collective organizations predominated (Yang & Wu, 2020). "Provisional Regulations for Kindergartens (Draft)" (Ministry of Education of China, 1952) and the "Provisional Kindergarten Curriculum" issued by the Ministry of Education stipulated that the establishment and suspension of kindergartens were in the charge of municipal- and county-level governments (Wang, 2014). In this period, the government acted as both the provider and regulator of preschool education.

At the onset of China's reform and opening up, the State Council made public "Minutes of the National Conference on Childcare and Preschool Education Work," proposing the "dual ownership" policy for the growth of preschool service. In other words, non-state preschool institutions should be run in parallel with their state counterparts (Jing & Pang, 2010). As China's economic reform advances, the development of preschool education has become increasingly market oriented. Local governments often applied the methods for restructuring businesses to change the ownership of kindergartens. At the same time, they cut back on or stopped investing in state-run kindergartens, which led to a sharp drop in the number of public kindergartens (Hong & Pang, 2009). Relevant data shows that the decade from 1980 to 1990 witnessed a reduction in the percentage of state kindergartens to less than 10% (Cai et al., 2019). Thus, the neglect of the government's responsibility in the process of marketizing preschool education has resulted in several challenges in the preschool education sector (He, 2012).

## **Issues with Market-Oriented Preschool Education in China**

In the context of the market economy, non-governmental organizations, the third sector, for-profit organizations, and individuals increase investment in preschool education services. There has been a proliferation of private kin-

dergartens with varied forms of ownership, such as community-based kindergartens, joint venture kindergartens, and sole proprietorship kindergartens. The increased types of preschool service providers have increased the accessibility of kindergartens to the public; on the other hand, the drastic reduction in state-run institutions has compromised the public nature of preschool education (Guo, 2013).

## ***Insufficient Regulation of Preschool Education by the Government***

In 2004, private kindergartens outnumbered public ones in China, representing more than half of the total number of kindergartens. Kindergartens with public-private mixed ownership also accounted for a considerable share (Fan & Pang, 2013). These non-state institutions have made up for the gap in the supply of preschool services to a certain extent. Nevertheless, the Chinese government has not implemented effective regulation of them regarding the qualification of the runner, operational conditions, teacher qualifications, registration and approval, educational quality, and supervision and evaluation (Zhan & Li, 2019).

The absence of state-level legislation specialized in preschool education in China has become an institutional barrier to its healthy, orderly development. Under the leadership of the Constitution, China has formulated a legal system for education constituted by the Education Law, Teachers Law, and Compulsory Education Law (Liu, 2019). However, relevant educational policies, rules and regulations, and governmental documents primarily regulate and guide preschool education in China, which are not as binding as legislation. Despite there being workable norms and standards for preschool education, the lack of accountability mechanisms in them, such as penalty and sanction stipulations, weakens their authority (Zhan & Li, 2019).

The lack of a binding law on preschool education not only deprives relevant departments of legal assurance in regulating the operation of private kindergartens but also makes it difficult for them to take effective measures to address illicit behaviors of the latter. In existing regulations on preschool education such as the “Regulations on the Operation of Urban Kindergartens,” “Regulations on the Management of Kindergartens,” “Standard Procedure of the Operation of Kindergartens,” and “Regulations on Non-state Education Institutions,” there are either loopholes or overly general principles, placing relevant departments in a predicament when exercising regulation over preschool education institutions (Zhang, 2022).

## ***Deviation from Preschool Education’s Role as a Public Good***

Early policies on preschool education in China recognized preschool education as a public good. In 1987's "Notice of the State Council's General Office on Circulating the Request of the National Education Commission and Other Departments on Clarifying the Division of Responsibility for Leadership and Management of Early Childhood Education," it is underscored that early childhood education is a cause of public welfare and that governments at all levels should place a premium on its reform and development (State Council of China, 1987). The subsequent policies have all emphasized the principle of general accessibility in preschool education. 1991's "Opinions on Improving and Strengthening the Management of Pre-primary Classes" clearly state that the pre-primary class shall not be a for-profit practice (National Education Commission of China, 1991). 1997's "Opinions on the Development Goals of National Early Childhood Education during the Ninth Five-Year Plan Period" reaffirms the public nature of early childhood education (National Education Commission of China, 1997).

Nevertheless, in the milieu of China's economic reform, preschool education became a market-oriented sector with an influx of private capital. Some entrepreneurs utilized fiscal financing, state-owned assets, collective assets, or donated assets to establish for-profit private kindergartens. Certain private investors control state kindergartens and non-profit private kindergartens for profit through acquisitions, mergers, agreements, and other means (Wang et al., 2016). 2011's "Interim Measures for the Management of Kindergarten Fees" stipulate that public kindergartens are not for-profit institutions and shall charge fees based on their operation costs (Ministry of Education of China, 2011). Unlike their public counterparts, private kindergartens can pursue desirable returns (Li, 2011). Gradually, the profit-seeking tendency intensifies in preschool education institutions, with its general accessibility being disregarded.

## **Significance of the Preschool Education Law (Draft)**

Determining the responsibilities and missions of the government is crucial for the development of preschool education. It is about the accountability of governmental authorities for this educational cause and the supervision of their involvement in it (Neuman, 2011). Countries worldwide have endeavored to establish the state as the main provider of preschool education through legislation. In its Decentralization Law of 1983, France declares that the state is primarily responsible for national basic education, including preschool education. The Code de l'éducation 2000 asserts that the state guarantees preschool education as a national public service and ensures its organization and implementation. The Nationalization of Education Law of Cuba sets forth education, including preschool education, as the public service of the state and the development of preschool institutions as the responsibility

of the state. The United States' Head Start Act of 1981 states that the federal and state governments and the family jointly bear the responsibility for the preschool education of the child; the No Child Left Behind Act of 2001 stipulates that the state shall strive to provide preschool education for all children under the age of 6 (Yang et al., 2010). Instances of legislation like these provide a basic guarantee for the state's assuming a pivotal role in national preschool education.

The Preschool Education Law of the People's Republic of China (Draft) reaffirms the standing of preschool education in the Chinese education system and proclaims the central role of the Chinese government in preschool education. It is of vital importance to the normalization of Chinese preschool education in that it sets forth directions for the development of universalized, safe, and high-quality preschool education in China (Ma, 2022).

### ***Defining the Responsibilities of the Government for Preschool Education Development***

In recent decades, major countries and territories around the world have emphasized the government being the main provider of preschool education, which is conceived of as the key concept in their reform of the early childhood education system. Under this concept, the number and share of public preschool education institutions have continuously increased. According to the World Economic Cooperation Organization's (OECD) 2008 survey on early childhood education and care, in more than half of the OECD countries, public nursery centers and kindergartens constitute over 50% of the total number of preschool education institutions. The share is over 80% in about one fifth of them, such as Luxembourg, France, Hungary, Belgium, Italy, Spain, Denmark, and more. It is noteworthy that public preschool education institutions predominate in developing countries such as Mexico, Brazil, Russia, Cuba, and North Korea. The percentages of them are 90% in Mexico, more than 95% in Russia, and 75.1% in Brazil. Cuba has nationalized its preschool education sector (OECD, 2010).

The Preschool Education Law (Draft) defines preschool education as an essential component of the national education system and an important cause of public welfare. Based on the status of preschool education, it proposes the principle that the government should provide the majority of preschool education services. To be specific, the state is accountable for universalizing preschool education by building a public preschool service system with reasonable deployment and general accessibility, covering both urban and rural areas. Thus, the government is determined to be the major actor in

improving the preschool education system, and the state is held responsible for popularizing preschool education (Ministry of Education of China, 2023).

## The Role of the Government in Overall Planning

Articles 53 and 54 of the Preschool Education Law (Draft) provide that the provincial and municipal governments have responsibility for the overall planning of preschool education, which includes improving the investment mechanism through the county-level government, incorporating the financial subsidies for preschool education into the budgets at all levels, formulating policies for financial subsidies and fee charging, determining the apportionment of financing, and ensuring that public kindergartens play the main role in implementing equitable preschool education (Ministry of Education of China, 2023). These provisions set forth the main provider of preschool education, the distribution of funds for it, and the role of public kindergarten.

## The Role of the Government in Implementing Preschool Education

Article 19 states that the distribution and deployment of kindergartens shall be based on the division of county regions, and the construction of generally affordable kindergartens shall be integrated into the overall planning of urban and rural public facilities (Ministry of Education of China, 2023). The government must balance education resources and guarantee young children's right to preschool education.

## The Role of the Government in Securing Preschool Education for Vulnerable Groups

The Ministry of Education of China (2023) states that Article 16 guarantees subsidies for generally affordable preschool education to children from economically disadvantaged families, and provides free preschool education to orphans, de facto unsupported children, children from extremely impoverished families, and disabled children from low-income families. These provisions serve as a legal guarantee for the right of all children to a generally affordable preschool education.

## The Role of the Government in Accrediting Preschool Education Institutions

Article 24 sets forth standards for the operational conditions of kindergartens to ensure their quality of education. The Ministry of Education of China (2023) says that Article 25 makes it clear that opening a kindergarten requires permission from the county-level education department or higher, in line with the rules, and then getting a school license. By rectifying the issues of a low threshold for the institution of kindergartens and lax approval criteria in the past, this provision ensures the educational quality of the kindergarten.

### ***Highlighting the General Accessibility of Preschool Education as a Public Good***

Major countries and territories in the world strive to achieve the stable development of preschool education and ensure its general accessibility by prioritizing investment in public preschool services. For instance, as stated by Article 213 of Section 8 of the Constitution of Brazil, public schools, including public preschool institutions, should be financed by public funds, and the government is obligated to prioritize investment in the development of the local public education system. In addition, the Constitution of Brazil also sets a minimum level of budget for public education, including public preschool education. In the 2000's "National Child Education Programs," the Brazilian government reiterated its commitment to ensuring the investment of national resources in the development of federal public education, including public preschool education (UNESCO, 2006a). "Regulations on Preschool Education Institutions" issued by the Government of the Russian Federation hold the state responsible for the financing and equipment of public kindergartens but not for those of private kindergartens (UNESCO, 2006b), thus providing legal underpinnings for giving priority to developing public kindergartens.

Article 3 of the Preschool Education Law (Draft) provides that preschool education is an essential cause of public welfare (Ministry of Education of China, 2023), proclaiming that preschool education is not a commercial sector but instead a public good that requires backing from governmental authorities. Article 6 further elaborates that preschool education development should adhere to the principle that the state is the primary provider of pre-primary service, while non-state organizations should also be encouraged to engage in developing generally affordable preschool education in an orderly manner. Articles 54, 56, 57, and 62 specify that county-level governments or above must fulfill their responsibilities in resource allocation, funding, budget management, and auditing/supervision for pre-primary education. Provincial-level governments are held responsible for the overall planning of preschool education funding and formulation of standards of

kindergarten fees. Additionally, it is prohibited for any organization or individual to embezzle preschool education funds or illicitly collect money from kindergartens (Ministry of Education of China, 2023). Provisions like these accord local governments with more authority in distributing funds among preschool institutions and enable them to adjust the budgets of preschool education in accordance with the actual local circumstances in the context of China's top-down financial allocation mechanism. This facilitates accelerating a balanced development of preschool education and achieving the goal of generally accessible preschool education.

Maintaining state kindergartens' public ownership is a central pathway to a sufficient supply of generally affordable preschool services. Regarding how to successfully preserve existing public preschool institutions, Article 26 of the Preschool Education Law provides that public kindergartens are prohibited from being converted into private ones and shall not institute or participate in instituting for-profit private institutions. Furthermore, public kindergartens are prohibited from being directly or indirectly listed as commercial assets (Ministry of Education of China, 2023).

While encouraging the increase of public preschool services, the Preschool Education Law (Draft) also has provisions for supporting and regulating price-friendly private kindergartens. For instance, Article 64 specifies that local governments shall support developing generally affordable private kindergartens through various means such as financial subsidies, governmental purchases of services, rent reduction, the designation of public preschool teachers as private school teachers, staff training, and guidance on teaching research. At the same time, the Preschool Education Law imposes strict restrictions on the establishment of for-profit private kindergartens. Article 27 clearly states that non-state capital is not allowed to control public kindergartens or non-profit private kindergartens through means such as merger and acquisition, entrusted operation, franchise chain, or variable interest entity, and that these kindergartens shall not be directly or indirectly listed as commercial assets (Ministry of Education of China, 2023). Inhibiting the profit-seeking tendency of capital in the preschool education sector through legislation is a precondition for the supply of generally accessible pre-primary education as a public good.

## ***Strengthening Governmental Supervision of the Quality of Preschool Education***

Stringent governmental regulation of preschool institutions guarantees that public investments can effectively improve the quality of pre-primary education. Countries with a mature preschool system, such as Germany, France, and Sweden, have all endeavored to establish efficient regulation mecha-

nisms for early childhood education. In response to current issues with Chinese preschool education, the Preschool Education Law (Draft) underscores the importance of improving the regulation mechanism and specifies governmental responsibilities in this regard.

## Division of Responsibility among Different Levels of Government

The regulatory framework of preschool education shall be determined by the central government; the municipal and county-level governments are responsible for its implementation; and the provincial government administers supervision over the execution of central regulations by municipal and county-level authorities. Article 53 of the Preschool Education Law (Draft) specifies that provincial-level governments as well as metropolises and autonomous prefectures are responsible for the overall planning of preschool education and the formulation of relevant policies. The county-level government is primarily responsible for the development of local preschool education and the supervision and regulation of preschool education institutions. The village-level government and urban street offices shall support the development of preschool education within their jurisdiction (Ministry of Education of China, 2023).

## Division of Responsibility among Various Departments

Article 54 of Preschool Education Law (Draft) specifies that the education department at the county level or above is responsible for the management and professional guidance of preschool education by establishing management agencies, hiring administrative and research personnel, and administering quality supervision to pre-primary institutions; that the health department at the county level or above is responsible for the supervision, inspection, and professional guidance of health care in kindergartens; and that other administrative departments including the development and reform, finance, human resources and social security, natural resources, urban-rural housing, civil affairs, market supervision departments shall implement supervision on preschool education in areas falling within the scope of their respective mandates, such as the institution of kindergartens, teacher staffing, fee standards, safety and security, fund use, financial management (Ministry of Education of China, 2023). The explicit division of responsibility helps avoid the overlap of regulation and supervision of preschool institutions between governmental departments.

## Supervision, Accountability, and Monitoring of Preschool Education Quality

Article 59 of the Preschool Education Law (Draft) states that the education supervision agency at the county level or above shall supervise the regulation and performance of relevant administrative departments at the county level as well as the lower-level governments and is responsible for overseeing the operation of kindergartens within their jurisdiction. The education supervision agency at the county level or above shall regularly disclose the supervision reports to the public. Article 60 stipulates that the State Council's Ministry of Education shall provide guidelines for evaluating the quality of care and education of kindergartens and that the provincial-level education department shall improve in practice the quality evaluation criteria and the monitoring system for kindergarten quality evaluation and include all types of kindergartens in the quality evaluation system with the evaluation results being released to the public (Ministry of Education of China, 2023). The purpose of these provisions is to progressively enhance the quality of Chinese preschool education.

## Conclusion

Legislation on education is the most effective means for actualizing the functions of education because it establishes mandatory regulations to adjust relationships between all stakeholders and circumvent arbitrary interference from various parties, thus contributing to a stable environment for educational implementation. China's legislation on preschool education promises a healthier development of early childhood education. The implementation of the law has the potential to advance the universalization of preschool education in China and guarantee the right of preschool-age children to education.

## References

Cai, Y., Wang, J., & Zhang, L. (2019). The evolution of the supply model of preschool education in China and its Prospects: 1949-2019. *Journal of Central China Normal University (Humanities and Social Sciences Edition)*, 2019(5):25-37. Available at:

<https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdolG9rDgExM6oLbzAofKrdx6VBxVw7GFF7uNcLe8Fck7kiCpIzSUfQSQNlnd4xnUpZ3mZkzU4cjX03v6hQR5Srmn4qRXN5Y8Ba5e0YMpmAA3iq51x7mJRLv7cPTudEPJMQ=&uniplatform=NZK>

- [PT&language=CHS](#)  
Ding, J. & Pang, L. (2010). Social system transformation and Re-definition of preschool education. *Studies in Preschool Education*, 2010(3):3-7. DOI: <https://doi.org/10.13861/j.cnki.sec.2010.03.014>
- Fan, M. & Pang, L. (2013). Main issues, challenges, and reform orientations of China's preschool education management system. *Studies in Preschool Education*, 2013(6):3-7+48. DOI: <https://doi.org/10.13861/j.cnki.sec.2013.06.002>
- Feng, X. & Zhou, J. (2011). Building National Wealth: A brief account of the UNESCO's first World Conference on Early Childhood Care and Education. *Studies in Preschool Education*, 2011(1):20-28. DOI: <https://doi.org/10.13861/j.cnki.sece.2011.01.006>
- Guo, X. (2013). Social system transformation and re-defining preschool education. *Journal of Changjiang University (Social Sciences Edition)*, 2013(3):158-159. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdq1Ow-CGJHvfddtdwXsXnCUxINyWwJHKERPcEKwE60Jh7A1nXmQ\\_BCqIOI8H0IPE-0YsQ9B0kyR7qMi2RzY\\_YXWLHqoZO3XO1dOVBUOEX5x5a6hA7GZuhfc&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdq1Ow-CGJHvfddtdwXsXnCUxINyWwJHKERPcEKwE60Jh7A1nXmQ_BCqIOI8H0IPE-0YsQ9B0kyR7qMi2RzY_YXWLHqoZO3XO1dOVBUOEX5x5a6hA7GZuhfc&uniplatform=NZKPT&language=CHS)
- He, F. (2012). Governmental Responsibility for Preschool Education (doctoral dissertation). Nanjing Normal University. <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CDFDLAST2016&filename=1015668321.nh>
- Hong, X. & Pang, L. (2009). Institutional guarantee and governmental responsibility for the development of preschool education. *Studies in Preschool Education*, 2009(1):3-6. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdobePCro\\_GxqxaK1KxuXZJYU BmCLZUSyE6cLL8CJAzAFZgJTSSwI6LnF6pnEUL5tued7G1qegtRPqsh\\_Tz-oKIcOuA4OcHI2SvxJlb8pyBuGAhSctsdgZO&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdobePCro_GxqxaK1KxuXZJYU BmCLZUSyE6cLL8CJAzAFZgJTSSwI6LnF6pnEUL5tued7G1qegtRPqsh_Tz-oKIcOuA4OcHI2SvxJlb8pyBuGAhSctsdgZO&uniplatform=NZKPT&language=CHS)
- Hou, Q. (2018). Legislative Plan of the Standing Committee of the 13th National People's Congress. Xinhua News Agency. Available at: [http://www.xinhuanet.com/politics/2018-09/08/c\\_1123397570.htm?Baik](http://www.xinhuanet.com/politics/2018-09/08/c_1123397570.htm?Baik)
- Li, Z. (2011). Issues with kindergarten charges and countermeasures. *Market Economy and Price*, 2011(12):20-23. DOI: <https://doi.org/10.13814/j.cnki.scjyjg.2011.12.03>
- Lin, N. (2015). Issues with Rural Preschool Education and Countermeasures (master's thesis). Hebei Normal University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD201602&filename=1016029825.nh>
- Liu, P. (2019). The construction of the legal framework of preschool education in China: From the perspective of the function of fundamental rights. *Journal of Education Science of Hunan Normal University*, 2019(1):19-26. DOI: <https://doi.org/10.19503/j.cnki.1671-6124.2019.01.004>
- Ma, F. (2022, April 26). Promoting normative and scientific preschool education. *Democratic and Law Times*. P.003. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdrCWJFsQQg863l-uMe3VNRXAeDulxAi29cMlpDiEvm2J Mn8MXnyV7M5e6nsAcykLpHIH8rONu li3EAmGVCbj78F\\_U4fVAHRB0tROIP MapHtuqiBI0FyHxW0dikUaBwclHc=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdrCWJFsQQg863l-uMe3VNRXAeDulxAi29cMlpDiEvm2J Mn8MXnyV7M5e6nsAcykLpHIH8rONu li3EAmGVCbj78F_U4fVAHRB0tROIP MapHtuqiBI0FyHxW0dikUaBwclHc=&uniplatform=NZKPT&language=CHS)
- Ministry of Education of China. (1952). Provisional Regulations for Kindergartens (Draft). *Shanxi Politics*, 1952(7):108-114. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdoFFTx746CmfMQflU1M4BbOO7STHL58iYceOLewVExa-SL1VBkgYpDnbOgxtPsFG\\_IsKUW1nFS SLAIHIXIH9JWv2-GI3hAOvVqd\\_KEhbPa5EPTGpHGJyub Y5NcViQ=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdoFFTx746CmfMQflU1M4BbOO7STHL58iYceOLewVExa-SL1VBkgYpDnbOgxtPsFG_IsKUW1nFS SLAIHIXIH9JWv2-GI3hAOvVqd_KEhbPa5EPTGpHGJyub Y5NcViQ=&uniplatform=NZKPT&language=CHS)
- Ministry of Education of China. (1991). Opinions on Improving and Strengthening the Management of Pre-primary Classes. Available at: [http://www.moe.gov.cn/srcsite/A06/s3327/199106/t19910617\\_81990.html](http://www.moe.gov.cn/srcsite/A06/s3327/199106/t19910617_81990.html)
- Ministry of Education of China. (2011). Notice of the National Development and Reform Commission, Ministry of Education, and Ministry of Finance on the Issuance of the "Interim Measures for the Management of Kindergarten Fees." Available at:

- [http://www.moe.gov.cn/jyb\\_xxgk/moe\\_1777/moe\\_1779/201201/t20120117\\_129509.html](http://www.moe.gov.cn/jyb_xxgk/moe_1777/moe_1779/201201/t20120117_129509.html)
- Ministry of Education of China. (2023). Preschool Education Law of the People's Republic of China (Draft). Available at: <http://www.mbxq.org.cn/u/2023090320212373499.pdf>
- National Education Commission of China. (1997). Opinions on the Development Goals of National Early Childhood Education during the Ninth Five-year Plan Period. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=9U65J-ADU4rou3PlcT4yvBxsJM8GhiBPfYhIGRysoYLxMwzQoosVrevH6CIWCGmwLTX38Zpk\\_3CaCWpnfAOsh5GdiETEhhziM2YGY15kTCaiCJlknk3VYAb7TPCtORx&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=9U65J-ADU4rou3PlcT4yvBxsJM8GhiBPfYhIGRysoYLxMwzQoosVrevH6CIWCGmwLTX38Zpk_3CaCWpnfAOsh5GdiETEhhziM2YGY15kTCaiCJlknk3VYAb7TPCtORx&uniplatform=NZKPT&language=CHS)
- Neuman, S. (2011). Reform of Preschool Education and National Anti-Poverty Strategy: The Experience of the United States (Chinese Translation). Beijing: Education Science Publishing House.
- OECD. (2010). Early Childhood Education and Care Policy - Country Studies. Available at: <https://www.oecd.org/education/school/ec-ec-country-studies.htm>
- Pu, X. (2023, August 29). Making the government assume more responsibility for preschool education. *Legal Daily*. p.002. DOI: <https://doi.org/10.28241/n.cnki.nfzrb.2023.004884>
- Shi, H. (2022). The conception of equitable and quality preschool education and implementation strategies. *Journal of Shan'xi Preschool Teachers University*, 2022(7):22-29. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdqfJgkSqWasnavdeuKFoBethoIU3MCq7D58o5Nm99M0l-5Mw2hZ2RTqG7YvjFufCu19cEA9lePv3b6fiY4ws7zPAVCzkFtfUgTR57PGugjianhPsbClfXq737BncxiA0T4=&uniplatform=NZKPT&language=CHS>
- State Council of China. (1987). Notice of the State Council's General Office on Circulating the Request of the National Education Commission and Other Departments on Clarifying the Division of Responsibility for Leadership and Management of Early Childhood Education. *Bulletins of the State Council of China*, 1987(26):863-865. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=9U65J-ADU4q9n0vUsvVIOFpWLhWWytM-6KGx1\\_UGzo9nNce0nCfvrR1Q8s3a18RQEW0tKzsCBFOylMvBymQ-bAclrDIwls8BONfEbPyUxM1TW7Wpcvuppe9UUDYUoyjAA0ngvAyl9MY=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=9U65J-ADU4q9n0vUsvVIOFpWLhWWytM-6KGx1_UGzo9nNce0nCfvrR1Q8s3a18RQEW0tKzsCBFOylMvBymQ-bAclrDIwls8BONfEbPyUxM1TW7Wpcvuppe9UUDYUoyjAA0ngvAyl9MY=&uniplatform=NZKPT&language=CHS)
- State Council of China. (2020). Announcement of the Ministry of Education on soliciting public opinions on Preschool Education Law of the People's Republic of China (Draft). Available at: [https://www.gov.cn/xinwen/2020-09/07/content\\_5541349.htm](https://www.gov.cn/xinwen/2020-09/07/content_5541349.htm)
- State Council of China. (2023). "Preschool Education Law of the People's Republic of China (Draft)" approved at an executive meeting of the State Council presided by Premier Li Qiang. *Children and Health*, 2023(7):9. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnWuD9zfeBbkdeJ7CYIDZwK6ORgyArXRqHddHUUFaoKcaJ9wdqf9P6FMI9Ywye82552IhzofIL8WB\\_U0RZI3CCBSfMfh\\_70mMUUDNYWu8HePzjv8a9Z\\_xwx3OLU4hEnZ6U=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=wgPKIBh6aVnWuD9zfeBbkdeJ7CYIDZwK6ORgyArXRqHddHUUFaoKcaJ9wdqf9P6FMI9Ywye82552IhzofIL8WB_U0RZI3CCBSfMfh_70mMUUDNYWu8HePzjv8a9Z_xwx3OLU4hEnZ6U=&uniplatform=NZKPT&language=CHS)
- Sun, K. (2021). Generally Affordable Private Preschool Education in China under the Background of the Legislation of Preschool Education Law (master's thesis). East China Normal University. Available at: <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=CMFD202202&filename=1021607918.nh>
- UNESCO. (2006a). Brazil: Early Childhood Care and Education (ECCE) programmes. Available at: <http://unesdoc.unesco.org/images/0014/001471/147160e.pdf.2009-11-29>
- UNESCO. (2009b). Early childhood care and education in the Russian Federation. Available at: <http://unesdoc.unesco.org/images/0014/001491/149142e.pdf>
- Wang, G., Shi, J., Wang, Y., Le, J., Tao, W., Zhang, W... & Sun, M. (2016). Intervention of capital investment in education: Is money or "wolves" coming. *Future Educationalists*, 2016(Z1): 96-105. Available at: <https://kns.cnki.net/kcms2/article/abstract?v=mFW->

- [2yKNQdrgOFj5oZnzlYdAk4Y7xNjfWsMlcuurZIClBmDuAGSkGk3MLAG2e6rU89Fer4yWeRoVmhOLwWEUfSAtY7UHRaUoAPAPBO9kXCcs2pCXbNA9iIL5p mUO68vWeVGLQIPTWze4=&uniplatform=NZKPT&language=CHS](https://doi.org/10.14121/j.cnki.1008-3855.2010.24.013)
- Wang, W. (2014). The evolution of educational goals in the three preschool education curriculum programs since the founding of the People's Republic of China. *Contemporary Teaching and Research*, 2014(4):6-7. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdvpPF8NX3av-SkNLtyDNf\\_PPUIOI6fK52iIAx9hqScQSDOUi448ttcswkgG\\_RbbS4cw2OkLXWmuDxJ8Lgm5olJP4sjZLg5shpsoFoVOgCrF9ZjglgGhJdzrl8LWnw9Ems=&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdvpPF8NX3av-SkNLtyDNf_PPUIOI6fK52iIAx9hqScQSDOUi448ttcswkgG_RbbS4cw2OkLXWmuDxJ8Lgm5olJP4sjZLg5shpsoFoVOgCrF9ZjglgGhJdzrl8LWnw9Ems=&uniplatform=NZKPT&language=CHS)
- Wu, S. (1989). La Chalotais and his Essay on National Education. *Journal of Beijing Normal University*, 1989(4):20-26+36. Available at: [https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdq6zP2xZjsC0N47Gls3\\_41Nb9qbYFNYS-42JnAKKeQF6vfbf9stomtFeZSszavAEqz4WPYuNexfMkG8XIDkZOoqulNRJjKID1904KwzMdxJPmOubp-ew-&uniplatform=NZKPT&language=CHS](https://kns.cnki.net/kcms2/article/abstract?v=mFW-2yKNQdq6zP2xZjsC0N47Gls3_41Nb9qbYFNYS-42JnAKKeQF6vfbf9stomtFeZSszavAEqz4WPYuNexfMkG8XIDkZOoqulNRJjKID1904KwzMdxJPmOubp-ew-&uniplatform=NZKPT&language=CHS)
- Yang, D., Xia, J. & Zhang, F. (2010). Developing public institution-dominated preschool education to promote universalized and equitable pre-primary education: Experiences of major countries and territories around the world in the reform of the preschool education system. *Research in Educational Development*, 2010(24):25-30. DOI: <https://doi.org/10.14121/j.cnki.1008-3855.2010.24.013>
- Yang, T. & Wu, Z. (2020). Pathways to successful development of preschool education in the context of lifelong education: Observations on "Preschool Education Law of the People's Republic of China (Draft)." *Modern Distance Education*, 2020(5):18-25. DOI: <https://doi.org/10.13927/j.cnki.yuan.20201119.002>
- Zhan, Z. & Li, S. (2019). Legislation of preschool education in China: Legalizing educational policies. *Journal of Shan'xi Normal University (Philosophy and Social Sciences Edition)*, 2019(1):45-53. DOI: <https://doi.org/10.15983/j.cnki.sxss.2019.0133>
- Zhang, Z. (2022). The evolution of preschool education policies in China: 1978-2019. *Journal of Educational Development*, 2022(11):39-47. DOI: <https://doi.org/10.16215/j.cnki.cn44-1371/g4.2022.11.009>

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