JEESS
Journal of Empirical Economics and Social Sciences
Uygulamalı Ekonomi ve Sosyal Bilimler Dergisi

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107-130

M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

A QUANTITATIVE ANALYSIS OF INTEREST AND TALENT EDUCATION IN EARLY CHILDHOOD: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE SCHOOLS

Doç.Dr. Miray ÖZÖZEN DANACI[*]

Uzm. Nuray ERAN TÜREDİ [**]

Meriç OLGUN[***]

ABSTRACT

This study aimed to compare the interest/talent education offered to children in early childhood within the context of public and private schools and to examine teachers' opinions on this matter. The research was conducted with 38 teachers working in public and private preschools in the Aegean region, and the data were collected through a questionnaire. The findings revealed significant differences between the two types of schools in terms of the scope, diversity, frequency, and expert support of interest/talent education. While cognitively-oriented activities were more prominent in public schools, private schools offered a greater variety of activities more frequently. Interest/talent education in private schools was generally provided by experts, whereas this support was more limited in public schools. Most teachers believed that these educational activities contribute positively to children's development; however, low participation rates were noted in public schools. Differences were also observed in the sources and uses of budgets based on the type of school. In conclusion, the study indicated that the

[*]Izmir Democracy University, Faculty of Education, Early Childhood Department, Izmir/ Turkey, E-mail: mirayozozen@hotmail.com.
[**] M.E.B., Kaptan Altay, Altug Preschool, Duzce/ Turkey, E-mail: nurayeran@gmail.com.
[***] Izmir Democracy University, Türkiye, E-mail: olgnmeric@gmail.com.

Makale Geçmişi/ Article History

Başvuru Tarihi/ Date of Application : 8 Mart/ March 2026
Düzeltme Tarihi/ Revision Date : 12 Mart/ March 2026
Kabul Tarihi/ Acceptance Date : 16 Mart/ March 2026

Research Article

quality and scope of interest/talent education provided in early childhood vary by school type, which may have important implications for educational policies and practices.

Keywords: *Child, Interest/Talent, Education, Public School, Private School*.

JEL Codes:

1. INTRODUCTION

The period of early childhood education, encompassing the 0–72 month age range, is characterized by rapid developmental progress and holds great importance in terms of learning. During this period, it is essential to equip children with fundamental skills, habits, and opportunities for social interaction (Gurkan, 2009). Early childhood education is considered the most suitable period for supporting children's physical, social, cognitive, and emotional development. As Yilmaz (2003) states, the future achievements of children who receive early childhood education differ from those who do not. The education and experiences provided during this process have lifelong effects on the child. In particular, the early childhood period contributes to children's creative development, social skills, and learning through play (Ari, 2003). Education provided at an early age enhances individuals' lifelong learning motivation and helps them become more active members of society (Ural and Ramazan, 2007; Turasli, 2009).

Creative and flexible approaches in early childhood education are regarded as comprehensive learning practices focused on interests and talents, which play a significant role in children's development. In this context, interest- and ability-based educational practices implemented outside routine classroom activities serve as important tools that enrich the educational process and support children's holistic development. During early childhood, the effects of such interest- and ability-based practices can be clearly observed through a decrease in behavioral problems (Wang, Geng, Hu, Du and Chen, 2013; Ozturk and Yilmaz, 2019; UNESCO, 2020).

According to Uzun and Bolat (2023), in activities such as dance, music, and drama, children encounter the necessity of following rules and recognize that they are appreciated when they comply. Thus, interest- and ability-based educational practices implemented outside routine programs help children develop self-esteem and self-confidence. Consequently, such practices enable children to establish social relationships with peers, learn to collaborate in group settings, and improve their self-expression skills. This also supports their participation in healthy social environments during after-school hours and prevents them from engaging with negative peer groups. Another positive effect of these non-routine activities during early childhood is the increase in academic achievement. These practices enhance children's self-esteem, boost their motivation, and strengthen their connection to school. They also improve their communication with teachers. This process reinforces children's sense of self-confidence, which contributes to greater academic success. Children become more willing to

learn as they realize that their achievements can be attained through their own efforts (Chen, Wang and Wang, 2011; Massoni, 2011; Uzun and Bolat, 2023).

Interest- and ability-based educational activities implemented outside routine curricula play a major role in fostering individuals' perceptions of healthy living and maintaining wellness. They also provide opportunities for physical activity and encourage children to adopt a healthy lifestyle. Activities such as swimming, sports-based movement, and drama contribute to both physical and emotional development (Petracovschi, Runcan, Neniu and Clitan, 2012; Uzun and Bolat, 2023). In this regard, as interest in non-routine interest- and ability-based education increases during early childhood, it is observed that children's overall development progresses in a healthier manner (Wagemans, Yasli, Kubovy, Palmer, Peterson and Singh, 2012; Uzun and Bolat, 2023).

1.1.Early Childhood Education Practices in Türkiye

Routine practices implemented in early childhood education in Türkiye are structured according to the developmental needs of children and consist of activities with continuity and a defined order. These routines play a significant role in helping children acquire daily life skills and supporting their social and emotional development. Major routine practices in early childhood education include arrival and greeting, free play time, meals, cleanup, hygiene time, and circle time (gathering and group activities) (MoNE, 2024). Additionally, these routines aim to help children develop skills such as understanding the concept of time, taking responsibility, and engaging in cooperation (MoNE, 2024).

1.2.Interest- and Ability-Based Practices Implemented Outside Routine Programs in Türkiye

One of the primary reasons for the need for interest- and ability-based practices implemented outside routine programs in early childhood education in Türkiye is the flexibility of the curriculum and the provision of full-day education. The curriculum encourages the implementation of various activities aimed at supporting children's cognitive, social, emotional, and physical development (MoNE, 2024). These activities are shaped according to children's areas of interest and hold importance in providing diverse learning experiences. Particularly in full-day educational settings, varied activities are essential to prevent children from becoming bored and to meet their developmental needs. Interest- and ability-based practices applied outside routine programs stand out as activities that develop children's creativity, problem-solving skills, and self-confidence while providing an enjoyable learning environment (Biskin and Guven, 2021; Uzun and Bolat, 2023; Canbeldek, 2020). It is suggested that such practices may enhance children's interest in learning and support their engagement as more active participants.

Research conducted in Türkiye indicates that frequently utilized non-routine interest- and ability-based practices include piano, dance, Orff activities, science experiments, mental arithmetic, chess,

robotics and coding, theatre, creative drama, gymnastics, swimming, foreign languages, handicrafts, and ceramics. These practices have numerous positive effects on various developmental domains in early childhood (Kucuk, 2006; Tekneci, 2009; Hu, Geng, Tao, Hu, Du and Fu, 2011; Kaynar, 2014; Seker and Alisinanoglu, 2015).

The effects of non-routine interest- and ability-based practices on child development are reported to provide multifaceted benefits across cognitive, emotional, social, motor, sensory, and other developmental domains. Studies suggest that such educational practices significantly contribute to children's overall developmental processes, helping them grow into healthier, well-balanced, and skillful individuals.

Early childhood education emphasizes the importance of supporting children's individual interests and abilities through diverse learning experiences. Previous research has highlighted that interest- and ability-based activities can positively contribute to children's cognitive, social-emotional, motor, and language development. However, much of the existing literature has primarily focused on specific programs, classroom practices, or particular developmental outcomes rather than examining these practices within different institutional contexts. In particular, studies comparing the implementation of non-routine interest- and ability-based activities across different school types remain limited. Moreover, there is a lack of research that simultaneously examines the types, frequency, and duration of such activities while also exploring teachers' perspectives on their developmental contributions in both public and private early childhood education settings. Therefore, further research is needed to better understand how these practices are implemented in different institutional contexts and how teachers perceive their impact on children's development.

The aim of this study is to compare interest- and ability-based practices implemented outside routine programs in early childhood education within the context of public and private schools, and to examine teachers' perspectives regarding the contributions of these activities to various developmental domains such as cognitive, social-emotional, motor, and language development. In this context, the following sub-objectives were investigated:

1. What are the commonly implemented non-routine interest- and ability-based educational activities in public and private schools?
2. What are the frequency and duration of the non-routine interest- and ability-based educational activities implemented?
3. Are there any differences in the frequency and duration of non-routine interest- and ability-based educational activities based on the type of institution?
4. What are teachers' perspectives on the contributions of these interest- and ability-based educational activities to children's development?

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

5. Do teachers' views on the developmental contributions of interest- and ability-based educational activities differ according to the type of institution?
6. Who is responsible for funding the non-routine interest- and ability-based educational activities implemented?

This study aims to shed light on teachers' perspectives regarding the prevalence and frequency of non-routine interest and talent-based activities in early childhood education, as well as the contributions of these activities to children's developmental processes. Furthermore, it seeks to determine the extent to which such activities should be incorporated into educational practices and to contribute to the existing literature.

2. METHODS

2.1.Research Design

This study aims to compare non-routine interest- and ability-based educational practices in early childhood education within the context of public and private schools. A survey model, which is one of the quantitative research methods, was employed in the study. The survey model enables the researcher to observe individuals, events, and phenomena objectively and without intervention, thus presenting the existing situation as it is (Karasar, 2023). This model offers an ideal approach for understanding school-type-based differences and examining data and opinions provided by teachers through a sample group that best represents the population. Survey research refers to studies conducted to gather data through observation for the purpose of obtaining information about the current status of a study group (Buyukozturk, Kilic-Cakmak, Akgun, Karadeniz and Demirel, 2024). In this context, determining the differences between interest- and ability-based practices implemented in public and private schools demonstrates the appropriateness of the survey model for assessing the effects of school type on instructional practices.

2.2.Study Group

The population of the research consists of preschool teachers working in public and private preschools located in provinces within Türkiye's Aegean Region. These teachers work at various levels of early childhood education and were selected among individuals who directly plan and implement practices aimed at supporting children's interest and talent development.

The sample group of the study consists of a total of 38 teachers, 23 of whom work in public institutions and 15 in private educational institutions, determined through Convenience Sampling, one of the non-random sampling methods. Institutional affiliation, professional seniority, and school type variables of teachers in the study group were evaluated within the scope of the research. Thus, the study

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

aims to identify potential differences in perspectives between teachers in public and private schools and to present the current status of interest- and ability-based practices in a more detailed manner.

2.3.Data Collection Tool

A questionnaire designed by the researcher in line with the aim of comparing non-routine interest- and ability-based educational practices in public and private schools was used as the data collection tool. The questionnaire, titled *"Evaluation Questionnaire on the Content, Frequency, and Implementation Characteristics of Interest- and Ability-Based Practices in Early Childhood Education,"* was developed based on the relevant literature and the objectives of the study.

To ensure content validity, the initial draft of the questionnaire was reviewed by three experts in the field of early childhood education. Based on their feedback regarding the clarity, relevance, and appropriateness of the items, necessary revisions were made and the questionnaire was finalized. This expert review process helped ensure that the items adequately represented the scope of interest- and ability-based educational practices examined in the study.

The questionnaire consists of 12 questions organized into two main sections. The first section includes four questions aimed at collecting demographic information about participants. The second section includes three subsections under the heading of information on interest- and ability-based education: four questions on frequency and numerical data, two questions on needs and demands, and two questions on budgeting. The questionnaire includes structured items that allow teachers to report the types, frequency, and implementation characteristics of the activities carried out in their institutions.

2.4.Data Recording

Data were collected through questionnaires. Participants were asked to complete the forms to share their opinions and information relevant to the purpose of the study. The data were collected both digitally through an online survey platform (e.g., Google Forms or Qualtrics) and in physical form.

After the data collection process was completed, all responses were transferred into a digital database. Each questionnaire item was assigned a numerical code, and responses were coded accordingly. For Likert-type items, response categories were coded numerically (e.g., 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree). Demographic variables such as gender, age, and years of years of teaching experience were also coded using predefined categorical values.

The coded data were entered into Microsoft Excel and subsequently imported into SPSS (Statistical Package for the Social Sciences) for statistical analysis. To ensure data accuracy, the dataset was checked for missing values, entry errors, and inconsistencies. Any incomplete or invalid responses were reviewed and treated according to the study's data inclusion criteria before proceeding with the analysis.

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

2.5. Data Analysis

Teachers completed the questionnaire on a voluntary basis. The data obtained from the questionnaire were analyzed using SPSS (Statistical Package for the Social Sciences). Percentages and frequency distributions of the data were calculated based on the information gathered through the questionnaire and aligned with the aims of the study. In accordance with the sub-objectives of the research, the data were examined, analyzed, and presented in tabular form.

3. FINDINGS

The findings of the study are presented in this section, focusing on the differences between public and private school teachers regarding non-routine interest- and ability-based educational practices. Descriptive and comparative analyses were conducted to illustrate the characteristics and perspectives of the participating teachers.

Table 1. Descriptive Statistics of Teachers' School Type and Years of Teaching Experience

Variety		**Frequency**	**%**
Type of Institution	State	23	60,5%
	Public	15	39,5%
	Total	38	100%
Years of teaching experience	1-5 year	23	60,5%
	6-10 year	7	18,4%
	11-15 year	4	10,5%
	16+ year	4	10,5%
	Total	38	100%

As shown in Table 1, 60.5% (n = 23) of the teachers participating in the study work in public schools, while 39.5% (n = 15) are employed in private institutions. Data from a total of 38 teachers were evaluated. These findings indicate that the majority of the sample consists of teachers working in public schools.

The majority of the participating teachers, 60.5% (n = 23), have 1–5 years of teaching experience. Following this, 18.4% (n = 7) of the teachers have 6–10 years of teaching experience, while 10.5% (n = 4) have 11–15 years, and another 10.5% (n = 4) have 16 years or more of teaching experience. Data on the years of teaching experience of a total of 38 teachers were evaluated. These results indicate that most of the teachers in the sample are either early in their careers or have relatively short years of teaching experience.

Table 2. Descriptive Statistics of the Distribution of Interest- and Ability-Based Educational Practices in Public and Private Schools

Type of Institution	Trainings	Frequency	%	Valid %
State	Dance	3	10,00%	10,00%
	Orff	2	6,70%	6,70%
	Chess	7	23,30%	23,30%
	Robotics and Coding	5	16,70%	16,70%
	Creative Drama	3	10,00%	10,00%
	Gymnastics	1	3,30%	3,30%
	Swimming	1	3,30%	3,30%
	Foreign Language	4	13,30%	13,30%
	Other	4	13,30%	13,30%
	Total	30	100,00%	100,00%
Public	Piano	3	3,20%	3,20%
	Dance	8	8,50%	8,50%
	Orff	7	7,40%	7,40%
	Science Experiments	6	6,40%	6,40%
	Mental Arithmetic	1	1,10%	1,10%
	Chess	8	8,50%	8,50%
	Robotics and Coding	8	8,50%	8,50%
	Theatre	3	3,20%	3,20%
	Creative Drama	6	6,40%	6,40%
	Gymnastics	13	13,80%	13,80%
	Swimming	9	9,60%	9,60%
	Foreign Language	15	16,00%	16,00%
	Handicrafts	2	2,10%	2,10%
	Ceramics	3	3,20%	3,20%
	Other	2	2,10%	2,10%
	Total	94	100,00%	100,00%

Note: Two columns were included to report both the frequency (f) and the percentage (%) values. The frequency indicates the number of participants in each category, while the percentage facilitates a clearer interpretation and comparison of the distribution of responses.

A detailed examination of Table 2 shows that among the interest- and ability-based educational activities offered in public schools, the most commonly provided activity is chess, accounting for 23.30% (n = 7) of the total. This is followed by Robotics and Coding at 16.70% (n = 5). Foreign Language and activities categorized as "Other" each account for 13.30% (n = 4). Dance and Creative Drama are less frequently offered, each representing 10.00% (n = 3). Orff activities account for 6.70% (n = 2), while Gymnastics and Swimming are the least offered activities, each at 3.30% (n = 1). In total, 30 different interest- and ability-based activities were evaluated.

In private schools, the distribution of interest- and ability-based activities indicates that the most commonly provided activity is Foreign Language, representing 16.00% (n = 15) of the total. This is followed by Gymnastics at 13.80% (n = 13), and Swimming at 9.60% (n = 9). Dance, Chess, and Robotics and Coding are similarly popular, each accounting for 8.50% (n = 8). Orff activities represent 7.40% (n = 7), while Science Experiments and Creative Drama are each offered at 6.40% (n = 6). Activities offered at lower rates include Piano, Theatre, and Ceramics (each 3.20%, n = 3), Handicrafts and Other (each 2.10%, n = 2), and the least offered activity, Mental Arithmetic, at 1.10% (n = 1). In total, 94 different interest- and ability-based activities were evaluated.

Table 3. Descriptive Statistics on Whether Interest- and Ability-Based Educational Activities Are Delivered by Specialists in Schools

Type of Institution	Response	Frequency	%
State	Yes	9	39,1%
	No	12	52,2%
	No response	2	8,7%
	Total	23	100%
Public	Yes	15	100%

Table 3 presents numerical data regarding whether the educational activities in schools are delivered by specialists. In public schools, 39.1% (n = 9) of teachers indicated that interest- and ability-based activities are conducted by a specialist, while 52.2% (n = 12) reported that these activities are not delivered by a specialist. Additionally, no response was obtained from 8.7% (n = 2) of the public school teachers. Data from a total of 23 teachers working in public schools were evaluated.

In contrast, the situation in private schools is considerably different. All teachers (100%, n = 15) from the 15 private schools evaluated reported that interest- and ability-based activities are conducted by a specialist.

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

Table 4. Descriptive Statistics on the Frequency of Implementation of Interest- and Ability-Based Educational Activities in Public and Private Schools

Type of Institution	Period	Frequency	%
State	1 hour per week	8	34,8%
	2 hours per week	3	13,0%
	3 hours per week or more	5	21,7%
	None	7	30,4%
	Total	23	100%
Public	1 hour per week	8	53,3%
	2 hours per week	4	26,7%
	3 hours per week or more	3	20,0%
	Total	15	100%

A detailed examination of the numerical data in Table 4 shows that in public schools, interest- and ability-based educational activities are conducted for 1 hour per week in 34.8% (n = 8) of the schools. In 21.7% (n = 5) of public schools, these activities are offered 3 hours per week or more, while 13% (n = 3) provide them for 2 hours per week. A notable finding is that in 30.4% (n = 7) of public schools, interest- and ability-based activities are not implemented at all (None).

Regarding private schools, more than half of the schools, 53.3% (n = 8), implement these activities for 1 hour per week. This is followed by 26.7% (n = 4) of schools offering 2 hours per week and 20% (n = 3) providing 3 hours per week or more.

Table 5. Numerical Data on the Annual Number of Interest- and Ability-Based Educational Activities in Public and Private Schools

Type of Institution	Period	Frequency	%
State	1-2	9	39,1%
	3-4	5	21,7%
	5-6	2	8,7%
	No response	7	30,4%
	Total	23	100,0%
Public	1-2	1	6,7%
	3-4	6	40,0%

5-6	6	40,0%
7 or more	2	13,3%
Total	15	100,0%

A detailed examination of the interest- and ability-based educational activities offered in public schools, as shown in Table 5, indicates that 39.1% (n = 9) of schools provide 1–2 such activities, while 30.4% (n = 7) did not report any. Additionally, 21.7% (n = 5) of schools offer 3–4 activities, and 8.7% (n = 2) provide 5–6 activities.

In private schools, a significant proportion, 40% (n = 6), offer 3–4 activities, while an equal proportion, 40% (n = 6), provide 5–6 activities. Furthermore, 13.3% (n = 2) of schools offer 7 or more activities, whereas a very small proportion, 6.7% (n = 1), provide only 1–2 activities.

Table 6. Teachers' Perspectives in Public and Private Schools on the Contribution of Interest- and Ability-Based Educational Activities to Children's Development

Type of Institution		**Frequency**	**%**
State	Yes, it contributes	19	82,6%
	Partially, it contributes	2	8,7%
	I have no opinion	2	8,7%
	Total	23	100%
Public	Yes, it contributes	15	100%
	Total	15	100%

A detailed examination of Table 6 shows that 82.6% (n = 19) of teachers working in public schools clearly stated that these activities contribute to children's development. A smaller proportion, 8.7% (n = 2), indicated that the activities contribute partially, while another 8.7% (n = 2) reported that they did not have an opinion on the matter.

In private schools, all teachers (100%, n = 15) indicated that these activities contribute to children's development.

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

Table 7. Numerical Data on the Budget Sources of Interest- and Ability-Based Educational Activities in Public and Private Schools

Type of Institution	Budget Source	Frequency	%
State	School Administration	9	24,30%
	Contributions from Families	12	32,40%
	Teachers	2	5,40%
	Private Financing	1	2,70%
	Public and Private School Sponsors	3	8,10%
	Free of Charge	5	13,50%
	I don't know	5	13,50%
	Total	37	100,00%
Public	School Administration	13	56,50%
	Contributions from Families	10	43,50%
	Total	23	100,00%

Teachers working in public schools reported that the most common source of funding is "Contributions from Families," accounting for 32.40% (n = 12). This is followed by "School Administration" at 24.30% (n = 9) as an important funding source. The proportions of teachers indicating that the activities are offered "Free of Charge" or responding "I don't know" are both 13.50% (n = 5). Lower proportions were reported for "Public and Private School Sponsors" at 8.10% (n = 3), "Teachers" at 5.40% (n = 2), and "Private Financing" at 2.70% (n = 1).

In private schools, 56.50% (n = 13) of teachers stated that the "School Administration" provides the budget, while 43.50% (n = 10) indicated that "Contributions from Families" constitute an important funding source.

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

Table 8. Descriptive Statistics on the Expenditures of Interest- and Ability-Based Educational Activities in Public and Private Schools

Type of Institution	Budget Spending Area	F	%	Valid %
State	Educational materials (toys, books, art supplies, etc.)	9	39,1%	39,1%
	Educator salaries	7	30,4%	30,4%
	Activity organization (performances, theatre, excursions, etc.)	3	13%	13%
	Technological tools (tablets, computers, interactive boards, etc.)	1	4,3%	4,3%
	I don't know	3	13%	13%
	Total	23	100%	100%
Public	Educational materials (toys, books, art supplies, etc.)	4	26,7%	26,7%
	Educator salaries	6	40%	40%
	Activity organization (performances, theatre, excursions, etc.)	4	26,7%	26,7%
	I don't know	1	6,7%	6,7%

According to Table 8, 39.1% (n = 9) of teachers working in public schools reported that the budget is primarily allocated to educational materials (toys, books, art supplies, etc.). This is followed by 30.4% (n = 7) indicating that expenditures are directed towards educator salaries. Activity organization (performances, theatre, excursions, etc.) accounts for 13% (n = 3), while the same proportion of teachers (13%, n = 3) reported that they did not have an opinion on this matter. Expenditures on technological tools (tablets, computers, interactive boards, etc.) were reported at a much lower rate of 4.3% (n = 1).

In private schools, 40% (n = 6) of teachers indicated that the budget for interest- and ability-based activities is primarily allocated to educator salaries. Educational materials (toys, books, art supplies, etc.) and activity organization (performances, theatre, excursions, etc.) each account for 26.7% (n = 4). A smaller proportion of teachers, 6.7% (n = 1), reported that they did not have an opinion regarding budget allocation.

Table 9. Chi-Square and Fisher's Exact Test Results Comparing the Budget Sources of Interest- and Ability-Based Educational Activities between Public and Private Schools

Test	Value	df	Asymptotic Sig. (2-sided)
Pearson Chi-Square	14.305	2	0.001
Likelihood Ratio	17.019	2	0.000
Fisher's Exact Test (2-sided)	-	-	0.001 (Monte Carlo)
N of Valid Cases	60		

Measure	Value	Approximate Sig.
Phi	0.488	0.001
Cramer's V	0.488	0.001

Table 9 presents the statistical results regarding whether there is a difference in the budget sources of interest- and ability-based educational activities between public and private schools. Due to low frequencies in some cells, categories with low counts were combined under the label "Other" for analysis. The analysis revealed a statistically significant relationship between school type and budget source ($\chi^2(2) = 14.305$, $p = 0.001$). This result indicates that the distribution of funding sources for interest- and ability-based activities differs between public and private schools.

Table 10. Pearson Chi-Square Results on Differences in the Diversity of Interest- and Ability-Based Educational Activities Provided by Public and Private Schools

	Value	df	Asym.Sig (2sided)
Pearson Ki Kare	22.468	8	0.004

Table 10 presents the results of the Pearson Chi-Square test examining differences in the diversity of interest- and ability-based educational activities provided by public and private schools. The obtained Chi-Square value was 22.468, with a degree of freedom (df) of 8. The significance level (Asymp. Sig. 2-sided) was calculated as 0.004. Since this value is below the statistical significance threshold of 0.01 ($p < 0.01$), it can be concluded that there is a significant difference between public and private schools in terms of the educational activities offered to support students' interest and ability development.

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

Table 11. Pearson Correlation Results on Differences in İnterest- and Ability-Based Educational Activities Provided by Public and Private Schools, Including Fisher's Exact Test (2x2) Results for the Variable of Delivery by Specialists

Test	Value	df	Asymptotic Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	11.786	1	0.001	—
Continuity Correction (Yates)	9.245	1	0.002	—
Likelihood Ratio	15.246	1	0.000	—
Fisher's Exact Test	—	—	—	0.0003
Linear-by-Linear Association	11.459	1	0.001	—
N of Valid Cases	36			

When the findings presented in Table 11 are examined in detail, the results of the Fisher's Exact Test indicate a statistically significant relationship between the type of school and the expertise status of the person delivering the training ($p = 0.0003 < 0.05$). While all trainings in private schools are delivered by experts, the rate of trainings conducted by non-experts is higher in public schools.

Table 12. Symmetric Measures (Optional): Symmetric Measures Related to the Chi-Square Test Results Examining the Relationship between Interest/Aptitude Trainings and School Type in Public and Private Schools.

Measure of Association	Value	Approximate Sig.
Phi	0.571	0.001
Cramer's V	0.571	0.001

Table 12 presents the symmetric measures (Phi and Cramer's V) derived from the Chi-Square analysis conducted to determine the strength and direction of the relationship between the implementation status of interest/aptitude trainings and the type of school (public/private). The Phi and Cramer's V coefficients indicate the magnitude of the association between the variables; values close to 0 suggest a weak relationship, whereas values approaching 1 indicate a strong relationship.

4. DISCUSSION

The findings of the study reveal that interest/aptitude trainings implemented as non-routine activities in early childhood education are approached differently in public and private schools. The fact that the majority of participating teachers (60.5%) work in public schools and a substantial portion

(60.5%) have between 1–5 years of teaching experience reflects the general tendencies of the sample; however, it also suggests the need for a cautious and limited approach regarding the generalizability of the results. From this perspective, the inclusion of teachers with higher seniority or those working in different school contexts in future studies may contribute additional insights and guide subsequent research.

4.1.Prevalence and Diversity of Interest/Aptitude Trainings

One of the most significant findings of the study concerns the clear differences between public and private schools in terms of the diversity and distribution of interest/aptitude trainings. In public schools, programs such as chess (23.3%), robotic coding (16.7%), and foreign language education (13.3%) primarily cognitive and logic-based activities are more prevalent. This pattern suggests that public schools tend to focus on specific skill areas due to limited resources. The cognitive benefits of chess instruction have been well documented by Kucuk (2006), Kaynar (2014), Akay (2017), Cubukcu and Bagceli-Kahraman (2018), and Canbeldek (2020). Given the positive effects of robotics and coding on an important cognitive domain problem-solving skills public schools' emphasis on these areas appears reasonable. However, the lower prevalence of physical and artistic activities such as dance, gymnastics, and swimming may be attributed to budget constraints or a lack of specialists. Supporting this interpretation, Biskin and Guven (2021) and Uzun and Bolat (2023) have reported that public schools do not adequately support interest/aptitude trainings that contribute to children's creativity, motor skills, and self-confidence.

These disparities likely stem from differing educational policies, resource allocation practices, and student profiles in public and private schools. While public schools generally prioritize the development of foundational academic skills particularly logical and mathematical competencies in line with centralized curricula, private schools tend to adopt more flexible programs aimed at fostering artistic abilities and developing children's individual interests. Private schools' broader financial resources and the tendency of parents to expect enhanced artistic and social development further contribute to these differences.

Complementing these findings, the data in Table 8 and Table 9 show that private schools offer a wide array of interest/aptitude trainings, such as foreign language instruction, gymnastics, and swimming—an indication of these schools' financial capacity and responsiveness to parental demands. The prevalence of foreign language education (16%) aligns with the importance of early language acquisition highlighted by researchers such as Sigirtmac and Ozbek (2009) and Karakus (2015). Likewise, the high proportion of physical activities such as gymnastics (Durukan, Koyuncuoglu and Senturk, 2016) and swimming (Albayrak Kuruoglu and Uzuncayir, 2020; Sanioglu, Taskin, Taskin and Fidan, 2013) demonstrates the value private preschool institutions place on children's physical

development. The wide range of other trainings offered such as dance (Akarsu, Kartal and Bumin, 2023; Sezince and Kolburan, 2018), Orff education (Aral, Akyol and Sigirtmac, 2006; Çevik, 2007; Kuscu, 2010; Oziskender and Gudek, 2013; Yucesan, 2021), creative drama (Yazar, Celik and Kok, 2007; Ceylan and Omeroglu, 2012; Bayrak and Akkaynak, 2020), science experiments (Biskin and Guven, 2021), mental arithmetic (Hu, Geng, Tao, Hu, Du and Fu, 2011; Kalkan and Arslan, 2016), piano (Dogan and Tecimer, 2019), theatre (Turkan and Turkan, 2018; Atalay, Nura and Ada, 2021), handicrafts (Ozbek, 2022), and ceramics (Altundag, Ural, Eratay and Aydogan, 2017) suggests that private schools adopt a holistic approach supporting academic, artistic, and physical development simultaneously.

The diversification results presented in Table 10 further illustrate that public and private schools differ significantly in the importance they assign to interest/aptitude trainings, the variety of programs offered, and the scope of these programs. While private schools provide more diverse and enriched opportunities, public schools appear more constrained by standardization and resource limitations. Consequently, the availability of opportunities tailored to children's individual interests and abilities varies considerably depending on school type.

4.2.Specialist Support and Frequency of Implementation

Significant differences were observed between public and private schools regarding whether the trainings are delivered by specialists. Whereas all teachers in private schools (100%) reported that trainings were provided by experts, only 39.1% of teachers in public schools indicated the same, with 52.2% stating that no specialist support was available. Considering the findings of researchers such as Uzun and Bolat (2023), who emphasize that specialist guidance is essential for maximizing the developmental benefits of interest/aptitude trainings, these results highlight a critical issue. The lack of specialist support in public schools may limit the quality of the trainings offered and hinder the extent to which children can fully realize their developmental potential.

As shown in Table 4, the frequency of implementation and the number of trainings offered per year also differ substantially by school type. In 30.4% of public schools, interest/aptitude trainings are not implemented at all, and where they are offered, they are generally limited to 1–2 hours per week or 1–2 activities per year—indicating that such programs are not sufficiently integrated into the curriculum. Yet, researchers such as Yilmaz (2003) and Ural and Ramazan (2007) highlight the long-term benefits of early childhood education programs for children's future success and lifelong learning motivation. Private schools, on the other hand, offer these trainings more regularly (often more than 1 hour per week) and with greater variety (typically 3–6 different programs), reflecting both their commitment to supporting children's development and their effective use of flexible curricula (MoNE, 2024).

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

4.3.Teacher Perspectives and Budget Resources

Teachers in both school types largely agree that interest/aptitude trainings contribute positively to children's development, indicating a widespread acknowledgment of their pedagogical benefits. Particularly noteworthy is that all teachers in private schools (100%) expressed this view, demonstrating that such trainings are integral to private schools' educational philosophy and programming. This shared belief aligns with the literature emphasizing the importance of interest/aptitude trainings in early childhood (Gurkan, 2009; Ari, 2003). Teacher perspectives on the developmental contributions of piano, dance, Orff education, science experiments, chess, robotics and coding, creative drama, gymnastics, swimming, foreign language education, handicrafts, and ceramics also parallel the respective empirical findings cited in the literature. This extensive scholarly support reinforces the scientific foundation of teachers' views. However, the perception among teachers in public schools that participation rates are low (69.6% reporting low participation, compared to high participation in private schools) suggests that this belief does not sufficiently translate into practice likely due to resource shortages, lack of specialists, or curriculum limitations.

Differences in budget resources identified in the study were expected to some extent. In public schools, contributions from families (32.4%) and school administration (24.3%) were reported as primary funding sources, although the proportion of teachers stating "no cost" or "not sure" is notable. This distribution indicates that public schools employ diverse funding sources in their budgeting processes, whereas private schools rely more heavily on internal funding and parental contributions. The fact that most of the budget is allocated to educational materials (39.1%) and educator salaries (30.4%) suggests that limited resources are primarily used to meet essential needs. The minimal allocation for technological tools may indicate that digital requirements of contemporary education are not yet fully met in public schools. In private schools, however, school administration (56.5%) is the main source of funding, followed by contributions from families (43.5%). The prioritization of educator salaries (40%) in private schools highlights the importance placed on specialist staff and investment in educational quality. Significant allocations for educational materials and event organization further reflect private schools' capacity to offer enriched programs. Collectively, these findings suggest a substantial disparity between school types in both access to and quality of interest/aptitude trainings in early childhood education (Balci, 2018; Karakaya and Demirtas, 2020; Yildirim, 2021).

4.4. Limitations and Future Research Directions

This study contributes to the literature by providing a quantitative comparison of non-routine interest/aptitude trainings in early childhood education across public and private schools in the Aegean region. However, the findings are limited by the sample size (38 teachers) and therefore cannot be

Cilt/ Volume: 8 Sayı/ Issue: 1 Mart/ March s s . / pp. 107- 130
M. Özözen Danacı, N. Eran Türedi, M. Olgun DOI: 10.46959/jeess.1905464

generalized to the entire country. The predominance of teachers with relatively little years of teaching experience may also limit the representativeness of diverse perspectives.

Future studies involving larger samples and broader geographic regions would enhance the generalizability of these findings. Additionally, qualitative research methods (e.g., interviews and observations) could offer more in-depth insights into the experiences and perceptions of teachers, parents, and even children regarding interest/aptitude trainings. Longitudinal and experimental studies should examine the specific cognitive, social, emotional, and motor developmental effects of particular types of interest/aptitude trainings. Finally, future research could explore in detail the barriers to implementing such programs in public schools (e.g., funding, lack of specialists, curriculum constraints) and propose policy recommendations aimed at addressing these challenges.

5. CONCLUSION

This study reveals significant differences between public and private schools regarding the prevalence, diversity, specialist support, frequency of implementation, and budgetary resources allocated to interest/aptitude trainings in early childhood education. According to the findings, private schools hold a clear advantage in offering richer and more diverse interest/aptitude programs, delivering these trainings through field specialists, and integrating them into their curricula with greater regularity. This advantage appears to stem directly from private schools' broader financial resources as well as their policies aimed at meeting the higher expectations of parents.

In contrast, interest/aptitude trainings in public schools tend to be more limited, concentrated in specific areas, and often lack specialist support; their frequency of implementation is also considerably lower compared to private schools. Nevertheless, the fact that the majority of teachers believe that such trainings substantially contribute to child development indicates a shared awareness of their necessity and value. This finding is consistent with the broader literature (Akay, 2017; Altundag et al., 2017; Atalay et al., 2021; Bayrak and Akkaynak, 2020; Biskin and Guven, 2021; Canbeldek, 2020; Dogan and Tecimer, 2019; Durukan, Koyuncuoglu and Senturk, 2016; Kalkan and Arslan, 2016; Karakus, 2015; Ozbek, 2022; Sigirtmac and Ozbek, 2009). However, the discrepancy between teachers' positive beliefs and the observed shortcomings in practice suggests the presence of structural challenges and resource limitations within the current system.

The reliance of public schools on family contributions as a primary budget source, alongside the allocation of existing funds mostly toward basic needs, restricts the availability of contemporary educational tools such as technological devices and supplementary materials. This situation hampers public schools' capacity to offer interest/aptitude trainings effectively and sustainably. Consequently, substantial differences between public and private institutions in terms of budgeting for such programs may have important implications for educational policy and resource distribution. To promote the

effective and equitable use of resources in education, it is recommended that the underlying causes of these disparities be examined more comprehensively and considered by policymakers.

Overall, the findings demonstrate the critical importance of providing all children in early childhood with high-quality and accessible opportunities to explore and develop their interests and abilities. In this regard, it is evident that public schools, in particular, require greater governmental support, increased employment of specialists, and more flexible curriculum models to expand and enhance the quality of interest/aptitude trainings. To ensure social equity and enable children to reach their full individual potential, addressing the institutional disparities identified in this study should be prioritized in future early childhood education policies.

REFERENCES

Akarsu, R., Kartal, K. and Bumin, G. (2023) "Okul Öncesi Çocuklarda Dansın Duyu-Algı-Motor Becerilere Etkilerinin İncelenmesi", IGUSABDER, 20, 431-443.

Akay, K. (2017) "An Investigation of the Effects of Chess Education Given to Preschool Children on Their Cognitive and Social Behavior", (Master Thesis). Necmettin Erbakan University, Konya, Türkiye.

Albayrak-Kuruoglu, M.Y. and Uzuncayir, D. (2020) "The Effect of Adapted Aquatic Exercises on the Social Skills of Children with Intellectual Disabilities", Gazi Journal of Physical Education and Sport Sciences, 25(2), 117 126.

Altundag, M., Ural, M., Eratay, E. and Aydogan, Y. (2017) "Evaluation of Ceramic Education and Practices Given to Preschool Children With and Without Disabilities", Journal of the Faculty of Education, Abant İzzet Baysal University, 17 (1), 1-16.

Aral, N., Akyol, A.K. and Sigirtmac, A. (2006) "An Investigation of the Effect of Orff-Based Music Education on the Creativity of Children Aged Five to Six", Electronic Journal of Social Sciences, 5(15), 1-9.

Ari, M. (2003) "New Approaches in Early Childhood Development and Education: Early Childhood Education and the Importance of Quality in Turkey", Istanbul: Morpa Culture Publications.

Atalay, A., Nura, E. and Ada, S. (2021) "Teachers' Views on the Effect of Theatre in Preventing Undesirable Behaviors in Preschool Children", National Academy of Education Journal, 5(2), 223-238.

Balci, A. (2018) "Education Management: Theory, Research and Practice" (9. Edition). Ankara: Pegem Akademy Publishing.

Bayrak, A. and Akkaynak, M. (2020) "The Effect of Creative Drama Education in Preschool on Emotion Regulation and Social Problem-Solving Skills", Academic Journal of History and Thought, 7(2), 123-139.

Biskin, D. and Guven, U. (2021) "Determining Parents' Views on Experiments Conducted in Science Activities in the Preschool Period", International Journal Of Leadership Training (IJOLT), 1(1), 76-90.

Buyukozturk, S., Kilic-Cakmak, E., Erkan-Akgun, O., Karadeniz, S. and Demirel, F. (2024) "Scientific Research Methods in Education", Ankara: Pegem Akademi.

Canbeldek, M. (2020) "Creative Children in Early Childhood Education: An Examination of the Effects of a Coding and Robotics Education Program", (PhD Thesis). Pamukkale University, Denizli.

Cevik, D.B. (2007) "An Overview of Orff Music Education Among Music Teaching Methods", BAU Journal of Graduate School of Social Sciences**,** 9(1), 95-100.

Ceylan, S. and Omeroglu, E. (2012) "An Examination of the Social-Emotional Behaviors of Children Aged 60–72 Months Who Receive and Do Not Receive Creative Drama Education According to Some Variables." Kastamonu Education Journal, 20(1), 63-80.

Chen, M.-S., Wang, C.T. and Wang, C. N. (2011) "Effect of Mental Abacus Training On Working Memory For Children. Journal of the Chinese Institute of Industrial Engineers, 28(6), 1-7.

Cubukcu, A. and Bagceli-Kahraman, P. (2018) "An Examination of Preschool Children's Problem-Solving Skills According to Their Participation in Chess Education." PAU Journal of the Faculty of Education., 43, 51-61.

Dogan, C. and Tecimer, B. (2019) "Piano Education in Early Childhood: Its Effects on Developmental Domains and Current Teaching Methods." 2nd International May 19 Innovative Scientific Approaches Congress, 669–674.

Durukan, H., Koyuncuoglu, K. and Senturk, U. (2016) "An Examination of the Basic Gymnastics Program in Preschool Children in Terms of Motor Development", CBÜ Journal of Physical Education and Sport Sciences, 11(2), 131-140.

Gurkan, T. (2009) "Okul öncesi eğitime giriş", Şefik Yaşar (Ed.), Erken çocukluk dönemi ve okul öncesi eğitim, Eskisehir: Anadolu Üniversitesi Yayınları.

Hu, Y., Geng, F., Tao, L., Hu, N., Du, F. and Fu, K. (2011) "Enhanced White Matter Tracts İntegrity İn Children With Abacus Training", Human Brain Mapping, 32(1), 10-21.

Kalkan, A. and Arslan, M. (2016) "An Investigation of the Effect of Mental Arithmetic Education in Preschool on Students' Visual Perception Levels", Ege Journal of Education, 17(2), 399-424.

Karakaya, I. and Demirtas, Z. (2020) "The Relationship Between School Culture and Student Achievement in Private Schools", Education and Science, 45(201), 205-220.

Karakus, H. (2015) "An Examination of Parents' and Teachers' Views on Providing Foreign Language Education in the Preschool Period", 4th International Preschool Education Congress, Hacettepe University, Ankara,

Karasar, N. (2023) "Report Preparation in Research – With Research and Publication Ethics", Ankara: Nobel Akademy Publishing.

Kaynar, F. (2014) "The Effect of Chess Education in Early Childhood on School Readiness", (Master Thesis). Adnan Menderes University, Aydın.

Kucuk, M. (2006) "Educators' and Parents' Views on Foreign Language Education in Preschool", (Unpublished Master's Thesis), Cukurova University, Adana.

Kuscu, O. (2010) "The Effect of Music Activities Based on the Orff-Schulwerk Approach on Attention Skills of Preschool Children", (Master Thesis). Selcuk University, Konya.

Massoni, E. (2011) "Positive Effects Of Extra Curricular Activities On Students", Essai, 9(1), 84-87.

Ministry of National Education. (2013) "Preschool education curriculum. Ministry of National Education. Retrieved March 8, 2026, from https://mufredat.meb.gov.tr/Dosyalar/20195712275243-okuloncesi_egitimprogrami.pdf

MoNE-Ministry of National Education. (2024) "Preschool education curriculum: Turkey Century Maarif Model. Ministry of National Education. Retrieved March 8, 2026, from https://mufredat.meb.gov.tr/Ozbek, D. (2022, November 4) "Why Handicraft Activities Are İmportant For Children. Momo Anaokulu. Retrieved March 8, 2026, from https://momoanaokulu.com/2022/11/04/cocuklar-icin-el-isi-calismalari-neden-onemlidir/

Oziskender, G. and Gudek, B. (2013) "The Effects of Preschool Music Education Based on the Orff Approach on the Development of Students' Social Skills", Turkish Studies-International Periodical For The Languages, Literature and History of Turkish or Turkic, 8(3), 213-232.

Ozturk, I. and Yilmaz, A. (2019) "The Need for Academic Support in Schools and Parents' Attitudes Toward Private Tutoring", Educational Administration: Theory and Practice, 25(4), 659-684.

Petracovschi, S., Runcan, P., Neniu, R. and Clitan, G. (2012) "The Social İntegration Of Children With Weight İssues Using The Curricular And Extracurricular Physical Education Activities", Procedia-Social and Behavioral, 46, 2872–2876. https://doi.org/10.1016/j.sbspro.2012.05.580.

Sanioglu, A., Taskin, M., Taskin, M. and Fidan, A. (2013) "The Effect of Swimming on Children's Tendency Toward Tolerance", Kilis 7 Aralık University Journal of Physical Education and Sport Sciences, 3(1), 30-35.

Seker, P.T. and Alisinanoglu, F. (2015) "A Survey Study of the Effects of Preschool Teachers‟ Beliefs and Self Efficacy towards Mathematics Education and Their Demographic Features on 48-60 Month- Old Preschool Children‟s Mathematic Skills", Creative Education, 6, 405-414.

Sezince, M. and Kolburan, S. G. (2018) "An Examination of Music and Dance Education in Children Aged 3–6 in Terms of Motivational, Physical, and Psychological Development", Aydın Journal of Society and Human, 4(1), 13-32.

Sigirtmac, A. and Ozbek, S. (2009) "English Education in the Preschool Period", Journal of the Faculty of Education, İnönü University, 10(1), 107-122.

Tekneci, S. (2009) "Examining the Effect of Chess Education in the Preschool Period on the Mathematical Skills of First Grade Primary School Students", (Unpublished Master Thesis). Abant İzzet Baysal Üniversitesi, Bolu.

Turasli, K.N. (2009) "Introduction to Preschool Education. Gelengül Haktanır (Ed.), Okul öncesi eğitimin tanımı, kapsamı ve önemi. Ankara: Anı Yayıncılık.

Turkan, C. and Turkan S. (2018) "Values Conveyed in Mümtaz Zeki Taşkın's Theatre Works", Eurasian Journal of Social and Economic Studies (ASEAD), 5(10), 49-59.

UNESCO (2020) "Global Education Monitoring Report 2020: Inclusion and Education: All means all", Paris: UNESCO.

Ural, O. and Ramazan, O. (2007) "Preschool and Primary Education System in Turkey. In S. Özdemir, H. Bacanlı and M. Sözer (Eds.), The Past and Present of Preschool Education in Turkey, Ankara: Turkish Education Association Publications.

Uzun, F. and Bolat, Y. (2023) "The Effect of Extracurricular Activities on Student Development" Harran Maarif Journal, 8 (1), 14-35. doi:10.22596/hej.1244118

Wagemans, J., Yasli, J. H., Kubovy, M., Palmer, S. E., Peterson, M. A. and Singh, M. (2012) "A Century Of Gestalt Psychology İn Visual Perception Perceptual Grouping And Figure Ground Organization", Psychol Bull, 138(6):1172-217.

Wang, Y., Geng, F., Hu, Y., Du, F. and Chen, F. (2013) "Numerical Processing Efficiency Improved in Experienced Mental Abacus Children", Cognition, 127, 149-158.

Yazar, A., Celik, M. and Kok, M. (2007) "The Effect of Creative Drama on Developmental Domains in Preschool Education", Ataturk University Journal of Kazim Karabekir Faculty of Education, 16, 15–21.

Yildirim, K. (2021) "The Effect of Socioeconomic Status on Student Achievement: The Case of Turkey", Journal of Educational Research 26(1), 112-130.

Yilmaz, N. (2003) "Preschool Education in Turkey", In M. Sevinç (Ed.), New Approaches İn Early Childhood Development And Education, Morpa Culture Publications.

Yucesan, E. (2021) "The Use of the Orff Approach By Preschool Teachers İn Music Activities", Journal of Fine Arts Institute, 27(46), 82–91.

Hakem Değerlendirmesi: Dış bağımsız.

Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemiştir.

Finansal Destek: Yazar bu çalışma için finansal destek almadığını beyan etmiştir.

Teşekkür: -

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author has no conflict of interest to declare.

Grant Support: The author declared that this study has received no financial support.

Acknowledgement: -