

**Implementing Parental Involvement to Improve Student Achievement in Hungary Schools: Patterns of Hidden Resources**Bacsikai Katinka<sup>1</sup>, Bencze Ádám<sup>2</sup>, Dorogi Alexandra<sup>3</sup>, Hegedűs Gabriella<sup>4</sup>, Major Enikő<sup>5</sup>, Rétháti Csilla<sup>6\*</sup>, Pusztai Gabriella<sup>7</sup>

## ARTICLE INFO

## ABSTRACT

**Article History:**

Received: 25 November 2023

Received in revised form: 26 February 2024

Accepted: 26 April 2024

DOI: 10.14689/ejer.2024.109.013

**Keywords**

Hungary, parental involvement, socio-economic status, parents' academic achievement

**Purpose:** Educational institutions face an increasing challenge when looking at ways to implement parental involvement to improve student achievement at school. This study aimed to review the diverse web of relationships between parental involvement and schools based on studies along various indicators and determinants. **Method:** The Hungarian National Assessment of Basic Competencies (NABC) databases were analyzed to examine parental involvement, which impacts academic achievement in grades 6 and 10 in Hungarian schools, and its associations with students' family background, age, and gender. The NABC contains data for all students in each grade, so the results of a full

query were used to examine patterns, meaning that the reliability of our results is high. The principal component analysis and cross-tabulation analysis were carried out using the SPSS 22 software package. **Findings:** Considering the results of the study, it was concluded that although the level of parental involvement decreases with advancing age, it does impact outside-of-school-home-based parental involvement. **Implications for Research and Practice:** The practical significance of these results is that they highlight the need to find ways of engaging with parents in secondary schools that are most appropriate for them. The study implications made evident that higher-status parents are more involved in their children's home and school life, and thus particular attention should be paid by those involved in educational decision-making processes and by schools to involve and prepare families of lower socioeconomic status for school life.

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## Introduction

The term parental involvement refers to parental activities and efforts that contribute to school achievement and progress in a child's education (Sad, 2012). LaRocque et al. (2011) define this concept as parents' investment in their children's education. However, parental involvement is a term used in a multitude of ways, and part of the definition is the extent to which it will affect a student's educational progress, the extent to which it will be present in the student's life as an influencing factor. In educational development, it has been recognised and acknowledged in several countries that the involvement of parents in school life can better ensure equity and effectiveness of education (Chophel & Choeda, 2021).

Schools and teachers face several challenges that have yet to emerge as a societal demand in recent decades. These challenges are tough for institutions to meet independently, but schools can also count on an ally - the parents, the families and the community behind the student - to help them achieve their goals. There is a dearth of studies on parental involvement in its varied aspects in the Hungarian perspective, and factors that determine the children's academic achievements have also been neglected. The current study aimed to examine parental involvement by analyzing data from Hungary. The study focuses on the rich web of relationships that can develop between parents and schools, and the variety of indicators that researchers have used to explore the issue of parental involvement. This study is based on the premise that parental involvement is a complex process that changes dynamically with the child's age and is influenced by several factors.

The empirical part of our study is based on the Hungarian National Assessment of Basic Competencies (NABC) database, measuring the 6th and 10th grades. The NABC database includes all students in each grade (excluding those absent on the measurement day). This allows us to investigate the patterns of the grades in question using a vibrant data set. After presenting the population sample, we compared our data with research findings in the literature to observe how school-parent relations have evolved in this Central European country. Our study used a data reduction analysis to isolate the different types of involvement and investigate the relationship between the gender, age, and socio-cultural background of the pupil and the family. We also looked at the strength of the influence of involvement on school performance.

## Literature Review

### *Parental Involvement: A Complex Content*

The parent-child partnership is essential for the development of the child from very early years. (Fan & Chen, 2001a) The child's education occurs at two levels: in the primary socialization arena (the family) and continues in the secondary socialization arena (the school). Under the primary socialization, parents play a decisive role in influencing their children's development (even before they are born) because it is not who the parents are, but what they do with their children, for their children's benefit, in the home environment and in educational institutions (Pető, 2022). Under the secondary socialization, it is truly adequate if children can carry forward the education received during the primary stage and acknowledge, in whole or

in part, the norms and habits adopted during that stage (Williams et al., 2002),

Several empirical studies have investigated the relationship between parental involvement and various other factors that influence children's academic achievement. These factors are not only multifold dimensions of parental involvement but are also other socio-economic factors that act as determinants of students' academic achievement. Epstein and Sanders (2000) share this perspective and argue that we cannot stop at a narrow analysis of parental involvement, as there is a larger involvement of various other factors like local community, family structure, parents' educational attainment and socio-economic factors affecting the pupils' development and progress at school. This is evident in several socio-economical studies that have focused on these factors and determinants influencing children's academic achievement.

For instance, studies (Bauch, 2001; Epstein, 2010; Epstein, 2018; Hill & Tyson, 2009; Oranga et al., 2023) examined the role of local community in enhancing the children's academic achievement; role of parents' educational attainment was studied by (Antony-Newman, 2020; Chophel et al., 2021; Fan & Chen, 2001b; Fényes & Pusztaí, 2012; Lavenda, 2011; Ribeiro et al., 2021; Sui-Chu & Willms, 1996; Sui-chu Ho et al., 2021); the age of the student as a determinant was examined by (Niyitrai et al., 2019); the gender of the student was studied by (Autor et al., 2016, 2019; Edwards & Alldred, 2000; Smith & Reimer, 2024); the socioeconomic status of parents as a strong determinant was investigated by (Benner et al., 2016; Cetin & Taskin, 2016; Jabar et al., 2023; Lavenda, 2011; Li et al., 2020; Xiong et al., 2021); and, last but not the least, family structure and social capital as determinants were studied by (Engler et al., 2021; Epstein, 2010; Pető, 2022; Putnam, 2004; Rákó, 2022).

This phenomenon of parental involvement can be understood through social capital theory. According to Coleman's (1988) social capital theory, the regular, supportive parent-child relationship is a source that influences children's school achievement. Children with a wealth of cultural capital from their families tend to succeed in school as the educational system acknowledges and rewards these acquired skills and abilities. (Rákó, 2022). Putnam (2004) sees the realization of social capital between social networks in schools in the participation of parents in school decisions and the form of social and family capital resources available to children. Research shows two distinct areas of parental involvement in school life. One relates to participation in school life, and the other to the attention, support and communication at home that also impacts schoolwork. The former is reinforced by the research of Li and Fisher (2017), who focus on parents' engagement with the school and the formation of communities around the institution, and Park et al. (2017), who highlight the importance of parent volunteering.

Interestingly, the gender of the child also influences the form of parental involvement, especially at home. DiMaggio (1982) found that girls have higher rates of attendance at theatre and concerts and read more fiction than boys. Smith et al. (2024) came to the conclusion that girls with a positive attitude toward school read more than boys with a similar attitude. Edwards et al. (2000) found girls to be more accepting and supportive of parental involvement. Autor et al. (2016, 2019) found that boys with lower socio-economic status (SES) performed more poorly in school than girls. This may be because parents in lower SES families spend more time developing and talking to their female children than their male children.

### *Parent-School Participation and Socio-Economic Factors*

The relationship between parents and school can be a very close and rich system of relationships, with the child at the centre, particularly for academic achievements. The academic achievement is influenced by parental expectations of education and parenting (Epstein, 1991; Fan et al., 2001a). In a 1997 study and a revised study in 2005, Hoover-Dempsey and Sandler (2005) created a five-tier model of parents' choices about the extent of their children's involvement in school. First, they reviewed the personal motivation that influenced parents' decisions, including their sense of responsibility and their belief that they can contribute to their child's school success. At the second level, they drew attention to the need to look at home and school support in the spatial implementation of all this. They then went on to mention how they can help a child's schooling, such as parental modelling and support. At the fourth level, the factors that have a stimulating or moderating effect on educational outcomes through parental involvement were examined. Finally, the fifth level focused on the learning outcome itself, the success or failure of which depends on achieving the previously mentioned levels (Hoover-Dempsey & Sandler, 1997; Hoover-Dempsey et al., 2005; Lavenda, 2011).

Erdener (2016) surveyed school administrators and teachers in state-run primary and secondary schools and found that teachers' attitudes and willingness to collaborate are the most critical factors in parents' school participation. Cooperation and contact with parents can be effective if the concerned parents are considered partners by the school (Rétháti & Rákó, 2022). However, for institutions seeking to maintain a dynamic relationship with parents, involving them in programs or decisions is not an easy task (Pető, 2022). While it is often observed that the parent-child collaborative relationship promotes the child's development and academic achievement, at the same time, there is an attitude, particularly on the part of schools, to keep parents at a 'safe distance' from the school (Oostdam & Hooge, 2013), mainly owing to socio-economic factors like parents' educational attainment and their income levels.

There is a common belief among the educators that parents' educational attainment influences parental involvement, with lower educational attainment and lower income levels resulting in a lower level of parental involvement, that is, educational attainment and income levels are the factors that can either help or hinder teacher-parent collaboration (Bauch, 2001; Erdem & Kaya, 2020; Lavenda, 2011). In their analysis, Fényes et al. (2012) confirm previous literature suggesting that parents with higher educational attainment are more likely to have higher parental involvement than parents with lower levels of education. In their 2021 study, Ribeiro et al. (2021) confirmed that parental education significantly influences parental participation, revealing that individuals with higher educational attainment are more inclined to engage actively. Furthermore, families with higher income levels, there exists an enhanced rapport with educators, concurrently resulting in heightened satisfaction levels regarding the educational institution, as outlined by Antony-Newman (2020).

Li et al. (2020) also highlight the importance of socioeconomic status (SES) when discussing home-based parental involvement, as they found a strong correlation between the two. By setting up their mediating model, the authors point out that two factors may mediate between socioeconomic background and home-based parental involvement. One

is parental attitudes, and the other is parental expectations, particularly relevant for students of low socio-economic status. Their results show that home-based parental involvement strategies of families from different socio-economic backgrounds also differ. This is consistent with the findings of [Benner et al. \(2016\)](#) and [Tan et al. \(2020\)](#)., which also notice stronger correlations for low-achieving students from high SES backgrounds and for high-achieving students from low SES backgrounds than for high-achieving students from high SES backgrounds and low-achieving students from low SES backgrounds.

### *Role of Family and Community*

The link between academic achievement and family structure is highlighted by [Coleman \(1988\)](#). He argues that social capital within the family is a significant determinant of the contribution that parents can make to their children's progress at home and at school. Communication within the family and attention to the child are essential for transmitting social and cultural capital ([Coleman, 1988](#); [Pusztai & Engler, 2020](#); [Pusztai et al., 2023](#)). According to [Epstein \(2010\)](#), the role of the mother is a powerful determinant of willingness to participate. Still, the distance of the family from the school is a similar factor, as is the distance of the family from the school and the programmes organized by the school.

[Li et al. \(2020\)](#) identified four distinct types of variables that the family's social background may influence: (1). homework support, (2). strict parental discipline, (3). parent-child communication, and, finally, (4) parents' time with children. These factors reflect parental home-based involvement in the child's academic progress. While strict parenting is prevalent and has a negative effect primarily in families of lower socio-economic status, the other three factors mentioned above help to support children in families of higher socio-economic background. [Cetn et al. \(2016\)](#) also confirm that higher-status parents are more involved in school life ([Cetn et al., 2016](#); [Jabar et al., 2023](#))

Educational research on the relationship between families and schools, values and cooperation has mainly focused on family structure and, size, and parents' educational attainment ([Driessen et al., 2005](#); [Földes, 2005](#); [Pusztai et al., 2020](#)). However, there are differences between families in the extent of support at school and home. [Desforges and Abouchaar \(2003\)](#) conclude from previous studies that, in most cases, family support tends to affect children's school progress positively. However, [Benner et al. \(2016\)](#) argue that family support at home, including assistance with homework and school projects, does not necessarily have a positive effect on promoting children's academic achievement and may differ for high-achieving and low-achieving students depending on socioeconomic status, and problems with the child may also result in greater parental involvement detected from elementary school levels ([Boonk et al., 2018](#); [Li & Fischer, 2017](#); [Naite, 2021](#)).

Regarding family support for children's academic achievement, [Nyitrai et al. \(2019\)](#) examined reading literacy and mathematics performance on the NABC. They investigated the impact on children's development through family support, homework monitoring, and discussions with parents about school events and reading experiences. They concluded that family background variables play an important role in the development of the children's academic achievement levels.

[Epstein \(2010\)](#), in addition to the parent-child relationship and the role of school in the academic achievement of the child, examines the role of the community, arguing that

within the family-school-community partnership network, a family-friendly school with community intervention should be created that strengthens the relationship between the different actors and provides mutual support. She identifies six areas that link family, school and community and can impact student success. Firstly, the parenting style plays a role in providing a safe environment for effective learning. Second, it emphasizes the two-way communication between parents and schools as a critical factor in transferring necessary information. Next, she then highlights the voluntary work of parents in contributing to the continuous renewal of the school environment. Further, the child's academic achievement needs to be supported and assisted by the parents in their own home, both directly and indirectly. Fifth, [Epstein \(2010\)](#) mentions the empowerment of parents to participate in school decision-making. Lastly, she also attaches great importance to cooperation with a community with different ideologies and formative powers ([Epstein, 2018](#); [Oranga et al., 2023](#)), which will most likely strengthen school programmes.

Throughout our analysis, our primary objective was to explore the relationship between the activities in the database and parental involvement, examining how these connections are reflected in the data. Subsequently, the following hypotheses were formulated to examine the premises of this study.

1. **H1** *It is assumed that the degree of parental involvement varies by age.*
2. **H2** *It is assumed that parental involvement varies by gender.*
3. **H3** *It is assumed that the level of parental involvement varies by social background.*
4. **H4** *It is assumed that there is a positive correlation between the degree of parental involvement and academic achievement.*

## Method

### *Research Design*

The study used a quantitative research design to examine parental involvement and contribution in children's academic achievement. The study observed how school-parent relations are evolving in this Central European country, and what variables indicate the extent of parental involvement in various aspects of a child's life. For this purpose, student's NABC standard math and reading comprehension scores were utilized to determine the student's academic achievement. This makes this research unique as it utilized census data covering two grades of an entire education system. These responses were based on students' self-rating, and therefore the data is highly reliable.

### *Sampling and Data Collection*

The empirical data for this study was collected mainly from the Hungarian National Assessment of Basic Competencies (NABC) student database, which measured the competency test results of 6<sup>th</sup> and 10<sup>th</sup> grades in Hungary for each academic year. The competency test first occurred in November 2001, and comprised reading comprehension and mathematics sections. A unique identifier was introduced in 2008 to track individual progress of each student. Additionally, a background questionnaire was also administered to track their socio-cultural and socio-economic (SES) background, serving as explanatory variables of the current research. The data was also collected for other variables like the

family background, number of books in the home; parents' educational attainment; parents' labour market status; family's financial situation; material assets owned by the family; learning aids; family activities; cultural activities and similar variables that can be linked with parental involvement.

### *Research Instruments and Procedures*

The NABC uses three ability models as a basis, which are probabilistic models: the Rasch model, the two-parameter model, and the three-parameter model. These models have in common students' abilities and the difficulty level of the test questions on a scale, thus if only students with more advanced abilities can solve the more difficult questions, thus ensuring score differences between students. In these models, students are placed in a skill level based on their complete test. This is determined in two steps: the first is to determine the task's difficulty, and the second is to classify the tasks into each difficulty level. The student's ability score is then determined based on the number of correctly completed tasks, on the principle that "the weakest student at a given level (e.g. level 2) is expected to score 50 per cent on a test composed of tasks of the same difficulty and equally distributed in terms of difficulty at that level (e.g. level 2). Thus, the ability level of a student is the highest level at which at least half of the tasks at this level would be solved by the student's ability" (Balázs et al., 2014). The score obtained allows us to compare the performance of two students as well as providing an opportunity to relate the ability score of a student to a given group (be it institutional or regional grouping) (Balázs et al., 2014).

### *Data Analysis*

The data reduction analysis methods were used to isolate the different types of involvement and investigate the relationship between gender, age, socio-cultural background of the pupil and the family. The score of these variables were look at the strength of the influence of involvement on school performance. The math and reading comprehension scores of students in grades 6<sup>th</sup> and 10<sup>th</sup> were divided into three equal parts: below average, average and above average; with each category having a nearly even number of students.

In each category, there were approximately 80,000 to 100,000, with the number dropping gradually in senior grades. The database marked a drop from grade 6 to grade 10, because in Hungary the compulsory school age (16 years) is reached by grade 10, so more students drop out due to grade repetition. However, analysis was restricted to those who had answered all parental involvement questions. The data for all students in each grade were analyzed through cross-tabulation analysis and Principal Component Analysis (PCA) methods on SPSS 22. This helped in examining patterns of all queries and find the reliability of results. Further analyses were performed using the comparison means method and correlation analysis.

## **Results**

The primary objective of this study was to examine how different activities related to parental involvement in the database were related. Based on these, two groups were formed of principal components for each grade and called comprehensive parenting and casual parenting (See Table 1).

**Table 1**

*Principal Component Analysis of the Types of School Involvement of Parents of 6th and 10th-Grade Students.*

Activities	6th graders		10th graders	
	Comprehensive parenting	Casual parenting	Comprehensive parenting	Casual parenting
Family holiday	0.405	0.569	0,447	0,551
Housework	0.391	-0.624	0,479	-0,517
Reading experience	0.688	-0.303	0,680	-0,238
Conversation	0.700	0.042	0,727	0,056
Homework	0.622	-0.160	0,617	-0,279
Parents' meeting	0.499	0.586	0,473	0,622
Municipalities	51.523%		52.002%	
KMO	0.681		0.713	

Next, the relationship between two principal components and other characteristics were examined to see how different variables were related to different groups of variables. The data in [Table 2](#) and [Table 3](#) show the prevalence of each indicator with the age of students, and thus hypothesis 1 (H1) was accepted.

**Table 2**

*Comprehensive Parenting, Distribution of Respondents (%).*

Frequency	Housework		Reading experience		Conversation		Homework	
	Year 6	Year 10	Year 6	Year 10	Year 6	Year 10	Year 6	Year 10
Never	5.3%	6.3%	27.1%	47.8%	2.6%	5.3%	12.3%	42.6%
Once or twice a month	20.3%	21.3%	28.0%	27.6%	5.4%	12.1%	23.6%	34.2%
Once or twice a week	44.9%	45.6%	26.9%	16.3%	12.8%	23.7%	35.1%	16.4%
<b>Every day</b>	<b>29.5%</b>	<b>26.8%</b>	<b>18.0%</b>	<b>8.3%</b>	<b>79.3%</b>	<b>58.9%</b>	<b>29.0%</b>	<b>6.8%</b>

**Table 3**

*Casual Parenting, Distribution of Respondents (%).*

Frequency	Family holiday		Parents' Teacher meeting	
	Year 6	Year 10	Year 6	Year 10
Never once/almost never	7.6%	6.8%	2.9%	5.8%
Once or twice/several times	12.8%	16.4%	10.6%	16.6%
Mostly	16.8%	22.6%	16.2%	20.1%
Every summer/almost always	62.7%	54.2%	70.3%	57.5%

[Table 4](#), [Table 5](#), and [Table 6](#) show how each type of parental involvement is related to the gender of the child (H2), the socio-economic background of the family (H3), the student's achievement and type of maintenance. Significant differences were found between types of parental involvement and the gender of the student ([Table 4](#)).



**Table 4**

*Types of School Involvement of parents of 6th and 10th Grade Students by Gender.*

Gender of the student		Year 6		Year 10	
		Comprehensive parenting	Casual parenting	Comprehensive parenting	Casual parenting
Female	Average	.0003	-.009	.056***	-.006
	N	28102	28102	24127	24127
Male	Average	-.0003	.009*	-.056	.006
	N	28352	28352	24324	24324
Total	Average	.000	.000	.000	.000
	N	56454	56454	48451	48451

**Note:** \* Significant at  $p < .05$  Level \*\* Significant at  $p < .01$  Level; \*\*\* Significant at  $p < .001$  Level.

The Family Background Index measures the socio-economic background of the family. In the analysis, we found a significant difference ( $p < 0.001$ ) between the types of parental involvement and the student's family background index, as revealed in [Table 5](#).

**Table 5**

*Correlation Between the Types of School Involvement of Parents of 6th and 10th-Grade Students and the Family Background Index.*

Pearson Correlation	Year 6		Year 10	
	Comprehensive parenting	Casual parenting	Comprehensive parenting	Casual parenting
Family background index	0.315	0.402	0.270	0.345
Significance	0.000	0.000	0.000	0.000

Significant differences were found for both types of involvement and for both grades of student achievement ( $p = 0.000$ ) as revealed in [Table 6](#).

**Table 6**

*Correlation Between the Types of School Involvement of Parents of 6th and 10th-Grade Students and Student Achievement.*

	Year 6		Year 10	
	Comprehensive parenting	Casual parenting	Comprehensive parenting	Casual parenting
Standard math score	0.086	0.302	0.083	0.321
Significance	0.000	0.000	0.000	0.000
N		104.100		
Standard reading comprehension score	0.105	0.311	0.111	0.303
Significance	0.000	0.000	0.000	0.000
N		104.100		
Average academic result at the end of the previous year	0.229	0.360	0.173	0.249
Significance	0.000	0.000	0.000	0.000
N		89.367		

## Discussion

In analyzing the data, the aim of this study was to first typify how parents of 6<sup>th</sup> and 10<sup>th</sup> grade students were involved in their children's lives and then to examine how these types of parental involvement influenced students' academic achievement. Data reduction was carried out, and as a result, two main types of parental involvement were identified, one being the daily, comprehensive, full-scale involvement of the parent: Comprehensive Parenting, and second was casual parenting, which involved parents' much less frequent activities and less involvement in the child's school life. These findings were based on several questions that were the part of the questionnaire such as for reading experience, students were asked how often reading happened in the family or whether the family talked about what happened at school or whether parents, grandparents, and older siblings helped in studying and doing homework. They were also asked whether they went on a family holiday, particularly during the last four years. Lastly, they were asked how often their parents attended the PTA meetings in recent years.

To test the first hypothesis, [Table 1](#) shows that the casual parenting variable group is dominated by family holidays and attendance at parent-teacher conferences, while the cooccurrence of the other variables is very low. While the main components of comprehensive parenting, student involvement in homework, reading experiences, discussion of what happened at school, and parental help with homework are much more highly weighted, the variables of parent-teacher conferences and family holidays are less highly weighted. However, there are no significant, pronounced differences in the factor weights for 6<sup>th</sup> and 10<sup>th</sup> graders. In our analysis, we further sought to answer the question of which parents are more likely to engage in casual parenting and which parents are more likely to engage in comprehensive parenting. In their research, [Fényes et al. \(2012\)](#) found that parents with higher educational attainment tend to provide more intensive learning support. For these families, in addition to cultural capital, the financial situation is presumably more favourable, which may be due to higher educational attainment, and for higher cultural capital, parental involvement may be more easily achieved through discussing reading experiences and parental help with homework.

Testing the second hypothesis in [Table 2](#), we can see that the categories of comprehensive parenting included student involvement in homework, discussing reading experiences and school events with parents, and parenting help with homework. Discussing what happened in school is the most common and is more common for sixth-grade students than for tenth-grade students. Student involvement in homework is the second most common, which varied less from sixth to tenth grade. Discussing reading experiences and parental help with homework are the two least frequent types of parental involvement, and the frequency of these also decreases as the student progresses from sixth to tenth grade. Two variables were included in the casual parenting category: attending parent-teacher conferences and family vacations. Both categories showed high frequencies, with both being more frequent for sixth-grade students and the frequency of both categories decreasing from sixth to tenth grade ([Table 3](#)). When summarizing the results of the two tables, it can be concluded that the parenting activities in both the casual parenting and comprehensive parenting categories decrease steadily with age, the only exception being school discussion, which, unlike the other factors, did not show a significant change from sixth to tenth grade. We mostly confirmed our hypothesis.

We examined our second hypothesis about the gender differences. Parents of sixth-grade boys had a significantly ( $p=0.037$ ) higher mean involvement in outside home-based activities, while there was no difference in comprehensive parenting type ( $p=0.939$ ). The results changed for tenth-grade students, with parents of girls having a significantly ( $p=0.000$ ) higher mean involvement in comprehensive parenting type activities than parents of tenth-grade boys, while there was no difference in casual parenting type activities ( $p=0.161$ ). Overall, the parents of sixth-grade boys were more likely to be involved in casual parenting activities, and the parents of tenth-grade girls were more likely to be involved in comprehensive parenting activities (Table 4). Following their research, Edwards et al. (2000) found that girls were more adaptable to parental involvement. Fényes (2010) found that girls from more disadvantaged backgrounds perform better in school, which may be because parents with lower socioeconomic status are more involved in their female child's school activities.. We also identified these differences.

To test the third hypothesis, it was revealed that since 2006, the NABC had used the Family Background Index (CSHI) variable, which included four questions: number of books in the home, parents' education, whether the family owns at least one computer, whether the student owns books. The results of the correlation analysis showed that the more typical the involvement types of comprehensive parenting and casual parenting, the higher the family background index score of the students in both grades (Table 5). In this connection Li et al. (2020) emphasize the increased importance of socioeconomic status when examining home-based parenting involvement. Home-based parental involvement of families from other socioeconomic backgrounds is different, with Li et al. (2020) finding homework support and parent-child communication, talking and reading experience discussion.

Li et al. (2020) found a strong correlation between involvement and parents' socioeconomic status (SES) background in their study of home-based parent involvement. Their research shows that families from different SES backgrounds have different engagement strategies. Similar to our method, they examined homework support and parent's time with the child, parent-child communication, and we used the Discussion of Reading Experiences indicator to examine how these factors affect the child's school progress. The results of our research, as well as those of Li et al. (2020), are consistent in that a more favorable SES background positively influences home-based parental involvement, which has a positive impact on student academic achievement, particularly in urban environment (Domina, 2005; Jeynes, 2007). Conversely, Park et al. (2017), Benner et al. (2016) and Xiong et al. (2021) describe that more favorable socioeconomic status of families can be either a facilitating or inhibiting factor for teacher-parent collaboration and better student academic outcomes. We have confirmed a strong relationship between SES and parental involvement.

Finally, to test our fourth hypothesis, we analyzed the correlation between parental involvement and student achievement. To measure achievement, we used three achievement indicators: standard math and reading scores, the average academic achievement at the end of the previous year. In all cases, correlation analysis showed that the more parents were involved in comprehensive and casual parenting, the better the students' standard math and reading scores as well as their average academic achievement, - at the end of the previous year, as seen in Table 6. The explanatory value of casual

parenting is stronger - and by tenth grade, academic achievement also increases. The achievement indicator we use included the results of two objectives, external measures and another indicator of end-of-year student achievement.

The strength of the correlation with academic achievement differs for the two variables we examined. Comprehensive parenting had a stronger positive correlation with academic averages. Casual parenting showed a relationship with all three outcome indicators. [Benner et al. \(2016\)](#) and [Boonk et al. \(2018\)](#) found that parental involvement at home, which means helping with homework and school projects, does not necessarily positively affect their children's academic achievement. In the present study, we found the opposite result to this finding; in our case, those with higher scores in the family background index were more typical in both types of involvement and had a positive impact on student's academic achievement. [Hoover-Dempsey et al. \(2005\)](#), reviewing their earlier findings, discovered that parent modelling and support were the dominant methods of parental involvement in their child's school life while exploring the factors that stimulated or moderated parental involvement had an impact on academic achievement.

### Conclusion

The main aim of our study was to explore patterns of parental involvement and to examine the extent to which gender, age, family socio-economic status and parents educational attainment influenced the extent of parental involvement. The novelty of our analysis is that our data, rather than being sample-based and not online questionnaires that can rarely accurately represent the whole population, are the result of a complete query of the database we used, and therefore the reliability of the results is high. We found that the degree of parental involvement decreases significantly with age but that the influence of parental involvement, especially in the case of casual parenting, is equally associated with older age. For this reason, it may be necessary for teachers teaching in public schools to know that, although there is less interaction between parents and teachers and between students and their parents at this age, its importance does not diminish. With this knowledge, they can strive, for example, to hold parent-teacher meetings when most parents can attend, as this can enhance their sense of competence.

It is also essential to see that school performance as measured by school grades is much more strongly associated with the influence of involvement than objectively measured competence development. Our critical finding, which has also been demonstrated in several other studies, is that the involvement of higher-status parents is more robust, and therefore schools and policymakers should pay particular attention to supporting the involvement of low-SES families and should also focus on this in teacher training.

### Acknowledgments

The research on which this paper is based has been implemented by the MTA-DE-Parent-Teacher Cooperation Research Group and with the support provided by the (i) Research Programme for Public Education Development of the Hungarian Academy of Sciences; (ii) The János Bolyai Research Scholarship of the Hungarian Academy of Sciences and (iii) ÚNKP-23-5 new National Excellence Program of the Ministry for Culture and Innovation from the Source of National Research, Development and Innovation Found.

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