

IS SCHOOL AUTONOMY EFFECTIVE FOR SUSTAINABLE ACADEMIC ACHIEVEMENT? PISA EXAM SAMPLE

A AUTONOMIA DA ESCOLA É EFICAZ PARA O DESEMPENHO ACADÊMICO SUSTENTÁVEL? AMOSTRA DO EXAME PISA

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ABSTRACT

This study compares whether there is a significant difference between the PISA averages of countries with strong school autonomy and countries with weak school autonomy. The study is a mixed research method study. The study group was selected from OECD countries with strong and weak school autonomy using a counter-sampling technique. The five OECD countries with the strongest school autonomy are Finland, Netherlands, Czech Republic, UK and Estonia. The five OECD countries with the weakest school autonomy are France, Spain, Greece, Turkey and Mexico. In all PISA exams between 2006 and 2022, there is a significant difference ($p < .05$) between countries with strong school autonomy and countries with weak school autonomy in the mean scores of math, science and reading. In countries with strong school autonomy, the levels of school self-determination and parental involvement in lifelong learning activities are higher than the OECD average. Countries with weak school autonomy, this rates are below the OECD average. In countries with strong school autonomy, teacher-administration collaboration, teamwork in school, student monitoring, and teacher participation in professional development activities are mandated by school management or required by law.

Keywords: Autonomous management, Sustainable academic success in schools, Comparative analysis of OECD countries, Evaluation of PISA results.

RESUMO

Este estudo compara se há uma diferença significativa entre as médias do PISA de países com forte autonomia escolar e países com fraca autonomia escolar. O estudo é um estudo de método de pesquisa misto. O grupo de estudo foi selecionado entre os países da OCDE com autonomia escolar forte e fraca usando uma técnica de contra-amostragem. Os cinco países da OCDE com maior autonomia escolar são Finlândia, Holanda, República Tcheca, Reino Unido e Estônia. Os cinco países da OCDE com a autonomia escolar mais fraca são França, Espanha, Grécia, Turquia e México. Em todos os exames do PISA entre 2006 e 2022, há uma diferença significativa ($p < 0,05$) entre países com forte autonomia escolar e países com fraca autonomia escolar nas pontuações médias de matemática, ciências e leitura. Em países com forte autonomia escolar, os níveis de autodeterminação da escola e de envolvimento dos pais em atividades de aprendizagem ao longo da vida são mais altos do que a média da OCDE. Nos países com pouca autonomia escolar, essas taxas estão abaixo da média da OCDE. Em países com forte autonomia escolar, a colaboração professor-administração, o trabalho em equipe na escola, o monitoramento dos alunos e a participação dos professores em atividades de desenvolvimento profissional são obrigatórios para a administração da escola ou exigidos por lei.

Palavras-chave: Gestão autônoma, Sucesso acadêmico sustentável nas escolas, Análise comparativa dos países da OCDE, Avaliação dos resultados do PISA.

Introduction

In countries with strong central government policies, apart from economic, social, political and administrative problems there are also significant problems in education. These problems can be more easily solved by strengthening democracy, human rights and decentralization. Along with the importance of democratization and decentralization, the importance of the autonomization process in education has started to increase. Because teachers have difficulty in accepting externally set goals (Aytaç, 2013). Therefore, if educators are reduced to the status of objects, they cannot be expected to make sacrifices for the sake of the school's goals. The realization of the goals of the school depends primarily on the adoption of the goals by the stakeholders and the sharing of these goals. (Şişman, 2022). In countries with strong central government policies, the dependence of schools on the center has a negative impact on school development. With school autonomy, schools will cease to be a mere link in a system that has to implement decisions taken by the ministry. With school autonomy, schools are given the opportunity to develop a vision of education in line with the characteristics of their environment (Neeleman, 2019). In contrast to centralized education, school autonomy is seen as a decentralization

movement that allows everyone in the school to participate in decisions. (Mulford et al., 2008).

Theoretical Framework

School autonomy is the basis of a management reform based on autonomy. School autonomy is the devolution of central powers to local education units or school boards. It is shown as an application for the decentralization of schools (Keddie, 2015). School autonomy is implemented through the direct empowerment of the regional education coordinator or school administrations. The implementation of school autonomy has two main pillars: Institutional autonomy and participation in decision-making. The school uses its decision-making power effectively in combination with autonomous management. In this system, the school has full authority over program formulation, budgeting and staff selection. (Özden, 2000). School autonomy is considered to be the decentralization of education, with schools having decision-making authority to improve education and training (David, 1989). In school autonomy, the school is the main decision-making unit decisions are made in the school board. The school's adaptation to change depends on stakeholders working in harmony as a team. In the autonomous management system, the school has full authority over program, budget and personnel management (Özdemir, 2022). School autonomy is a reform that reorganizes decision-making authority and is based on an autonomous school approach. School autonomy has three distinct characteristics (Aytaç, 2013): 1- Central decision-making authority in the areas of budget, personnel and programs has largely been transferred to the school. 2- Decision-making authority is shared between the school principal and teachers. 3- The school's stakeholders have the authority to set the rules for the school within the framework of laws and regulations. The elements that constitute school autonomy are specific (Cotton, 1992): Administrator, teachers, students, parents and the school board.

The functioning of school autonomy depends on some strategic practices (Odden & Wohlstetter, 1995): *Decentralization*; In school autonomy, the governing

board needs to be in charge to increase teachers' participation in decision-making. School boards and committees are decision-making bodies. *Board of Directors*; This board is made up of the principal, teachers and the head of the PTA and has a voice in school management. *Sub-Committees*: The school board supports the establishment of more than one sub-committee. In these sub-committees formed by teachers, decisions are taken regarding the implementation of the curriculum. *Professional Development Program*; Increasing the quality of education and meeting the expectations of families depends on the implementation of professional development programs. *Sharing Knowledge*; School autonomy emphasizes the dissemination of knowledge to all stakeholders. Thus, school members are informed about the decisions taken about the school. *Leadership*; School administrator is a person who plays a shared leadership role by transferring authority to school members. Because, in school autonomy, the principal is the actor who leads reforms for the school, supports teachers in innovations and facilitates change. *Vision*; There should be a school vision that guides the school's decisions about education and training, aims to increase student achievement and is adopted by school members. *Rewarding Success*; To ensure the realization of school goals, teachers need to be rewarded. School autonomy is one of the education reforms that are gaining importance. This approach aims to make the school autonomous in terms of budget, curriculum and personnel management and to enable teachers to play a more active role in the school (Wohlstetter, 1995).

Problem Status

Common problems in centrally managed education systems include school failure, unsustainable professional development for teachers, insufficient collaboration with civil society organizations, and school budgeting. School autonomy reform can create a democratic school structure and produce more effective and faster solutions to problems (Squires & Kranyik, 1995). The most important goal of the school autonomy reform is to make academic success sustainable. There are different studies in the literature on academic achievement

at school. These studies have generally focused on individual, social, cultural, economic and family-related reasons that affect academic achievement (Özdemir, 2020). Research on comparing academic achievement in terms of school autonomy is limited to school districts in some countries. It was found that academic achievement was higher in schools with autonomous administration in these regions than in schools in other educational regions (Saarivirta & Kumpulainen, 2016; Gertler, et.all, 2007; Odden & Wohlstetter, 1995; Burns & Howes, 1988; Cheng, 1996). However, studies have generally focused on the working and failing aspects of school autonomy and attitudes and opinions about school autonomy (Gamage, Sipple & Partridge, 1996; Briggs & Wohlstetter, 2003; Woessmann, et.all, 2009; Keddie, 2015; Neeleman, 2019). In addition to existing research, there is a need for comparative studies assessing international academic achievement in terms of school autonomy. In this context, the PISA exam is one of the most recognized international exams for comparing the academic levels of schools.

Therefore, this study compares the PISA scores of countries that adopted the school autonomy reform with the PISA scores of countries that adopted the centralized management policy. In this context, the international academic achievement of countries in terms of school autonomy was investigated and the data were evaluated according to the following criteria:

- Is there a significant difference between countries with strong school autonomy and countries with weak school autonomy in terms of PISA math, science and reading scores?
- What is the outlook for countries with strong and weak school autonomy in terms of school autonomy and parental involvement in lifelong learning activities?
- What is the outlook of countries with strong and weak school autonomy in terms of teacher-school management cooperation, teachers' teamwork, student monitoring practices and teachers' participation in professional development activities?

Method

This study is a mixed research design study with equal status and equal time parallel mixed design. Parallel mixed designs are preferred because quantitative and qualitative data are obtained and analyzed simultaneously (Hesse-Biber & Leavy, 2008).

Study Group

The study group was selected from the countries ranked by OECD (2018) according to school autonomy according to the contrast sampling technique, which is a purposive sampling technique. With this sampling technique, the five countries with the strongest school autonomy and the five countries with the weakest school autonomy were included in the sample group. The reason why not all countries in the study population were included in the sample is that many countries joined PISA afterwards. The countries in the study population and the countries selected for the study group are shown in Table 1.

Table 1 – Countries in the Study Population and Countries Selected For The Study Group

Countries in the Study Universe	<p>Countries with Strong School Autonomy: Netherlands, Finland, Czech Republic, England (UK), Latvia, Flemish Comm. (Belgium), Iceland, Estonia, Australia, New Zealand, Slovenia, Scotland (UK), Chile, Austria, Ireland, Slovak Republic, Lithuania, Sweden</p> <p>Countries with Weak School Autonomy: Italy, Hungary, Denmark, French Comm. (Belgium), Russian Federation, Japan, Israel, Germany, Luxembourg, Mexico, United States, Canada, Korea, Portugal, Norway, France, Spain, Switzerland, Greece, Turkey</p>
Countries Selected for the Study Group	<p>Five Countries with the Strongest School Autonomy: Finland, Netherlands, Czech Republic, Estonia, United Kingdom, United Kingdom</p> <p>Five Countries with the Weakest School Autonomy: France, Spain, Greece, Turkey, Mexico</p>

Reference: OECD (2018).

The countries in the study group were determined as the 5 countries with the strongest and 5 countries with the weakest school autonomy in the study population published by OECD (2018).

Data Collection Tool

PISA test scores were downloaded from PISA (2006, 2009, 2012, 2015, 2018, 2022) result reports. School autonomy and parental involvement in education rates are downloaded from OECD (2018) data table. Teacher-school management cooperation, teacher teamwork, student monitoring and teacher participation in professional development activities were downloaded from the OECD (2022) data table.

Data Analysis

Both quantitative and qualitative analyses were conducted simultaneously on the study data.

Quantitative Analysis

The data evaluated by quantitative analysis in the study are as follows: 1- PISA test results. 2- Countries' level of school autonomy. 3- Participation rates of families in lifelong learning activities. PISA scores were analyzed in SPSS 25 package program. It was determined that the exam scores were normally distributed (Shapiro-Wilk: .128 > .05; Skewness: -1.37; Kurtosis: 0.07). The arithmetic averages of the 2006, 2009, 2012, 2015, 2018 and 2022 PISA math, science and reading scores of Finland, Netherlands, Czech Republic, United Kingdom and Estonia and the arithmetic averages of the PISA scores of France, Spain, Greece, Turkey and Mexico were compared with the t-test. School autonomy and participation of families in lifelong learning activities are shown with percentage analysis. The PISA (2006-2022) results of the countries in the study group are presented in Table 2.

Table 2 – PISA Exam Scores of Countries

COUNTRY	2006 PISA			2009 PISA			2012 PISA			2015 PISA			2018 PISA			2022 PISA			
	M	S	R	M	S	R	M	S	R	M	S	R	M	S	R	M	S	R	
Countries with the Strongest School Autonomy	Finland	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	5	4
	Netherlands	4	5	4	4	4	3	1	3	2	1	3	2	0	2	2	8	1	9
	Czech Republic	8	4	7	1	5	6	9	1	4	1	1	6	7	2	0	4	1	0
	United Kingdom	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4
	Estonia	3	2	0	2	2	0	2	2	1	1	1	0	0	1	0	8	9	8
	France	1	5	7	6	2	8	3	2	1	2	9	3	9	3	5	3	8	9
	Spain	5	5	4	4	5	4	4	5	4	4	4	4	4	4	5	4	4	4
	Greece	1	1	8	9	0	7	9	0	9	9	9	8	9	9	2	8	9	8
	Mexico	0	3	3	3	0	8	9	8	3	2	3	7	9	7	0	7	8	9
	Other Countries	4	5	4	4	5	4	4	5	4	4	5	4	4	5	4	4	5	4
Countries with the Weakest School Autonomy	France	9	1	9	9	1	9	9	1	9	9	0	9	0	0	0	8	0	9
	Spain	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Turkey	1	3	0	1	2	0	2	4	1	2	3	1	2	3	1	2	1	2
	Greece	5	1	1	2	8	1	1	1	6	0	4	9	3	0	3	0	6	1
	Mexico	4	4	4	4	4	4	4	4	5	4	4	4	4	4	4	4	4	4
	Other Countries	9	9	8	9	9	9	9	9	9	0	9	9	9	9	9	7	8	7
	Spain	6	5	8	7	8	6	5	9	5	3	5	9	5	3	3	4	7	4
	Turkey	4	4	4	4	4	4	4	4	4	4	4	4	4	4	-	4	4	4
	Greece	8	8	6	8	8	8	8	8	8	8	8	8	8	8	8	7	8	7
	Mexico	0	8	1	3	8	1	4	6	8	6	3	6	1	3	3	5	4	4

Reference: (PISA 2006, 2009,2012,2015,2018,2022).

The PISA math, science and reading scores of the countries with the strongest school autonomy and the countries with the weakest school autonomy between 2006 and 2022 are shown above. Spain's 2018 PISA reading score was not included in the analysis as it was not included in the database.

Qualitative Analysis

Qualitative data on school autonomy were collected through document review and analyzed thematically. Thematic analysis is the summarization and interpretation of the data obtained under predetermined headings (Balci, 2013; Şimşek & Yıldırım, 2020; Aypay, 2021). The thematically compared characteristics of the countries in the study group in terms of school autonomy are as follows: 1- Teacher-school management cooperation 2- Teamwork of teachers 3- Student monitoring application 4- Teachers' participation in professional development activities.

Results and Discussion

In this section, school autonomy and parental involvement in lifelong learning activities are illustrated in figure 1. The results regarding teacher-school management cooperation, teamwork among teachers, student monitoring practices and teachers' participation in professional development activities are shown in Table 4. SPSS analysis outputs related to PISA exam results are shown in Table 3.

Table 3 – Comparison of PISA Averages of Countries with Strong and Weak School Autonomy

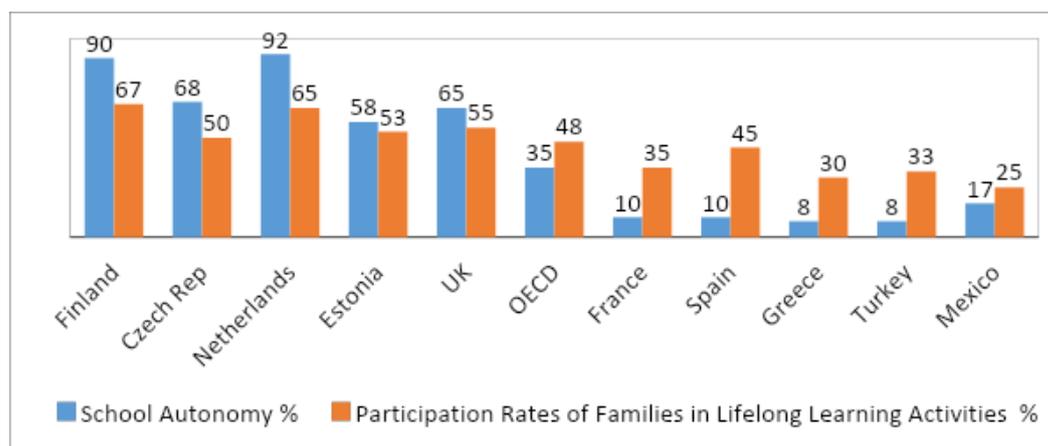
	Countries	\bar{x}	SS	F	T	p
PISA Math Averages of Countries with Strong School Autonomy	Finland, Czech Republic, Netherlands, Estonia, United Kingdom	508.63	12.18	3.60	3.42	.009*
PISA Math Averages of Countries with Weak School Autonomy	France, Spain, Greece, Turkey Mexico	454.83	32.98			
PISA Science Averages of Countries with Strong School Autonomy	Finland, Czech Republic, Netherlands, Estonia, United Kingdom	517.30	13.93	2.13	.183	.008*
PISA Science Averages of Countries with Weak School Autonomy	France, Spain, Greece, Turkey Mexico	461.76	32.25			
PISA Read Averages of Countries with Strong School Autonomy	Finland, Czech Republic, Netherlands, Estonia, United Kingdom	504.03	13.44	5.41	3.30	.010*
PISA Read Averages of Countries with Weak School Autonomy	France, Spain, Greece, Turkey Mexico	446.33	36.71			

*p< .05

According to the results of the independent samples t-test, there is a significant difference (p<.05) between the average PISA scores of countries with

strong school autonomy in 2006-2022 and the average PISA scores (mathematics, science and reading) of countries with weak school autonomy. Countries with strong school autonomy have higher achievement in the PISA math, science and reading categories than countries with weak school autonomy. In different studies in the literature, it has been determined that schools in Northern Europe (Sweden, Norway) and the USA in educational regions with strong school autonomy are more successful than other schools. (Saarivitra & Kumpulainen, 2016; Caldwell, 2005; Odden & Wohlstetter, 1995). Full implementation of the school autonomy policy can create a school-centered ecosystem that supports academic achievement.

Figure 1 – Countries' School Autonomy and Participation in Lifelong Learning Activities



Reference: OECD (2018).

Countries with strong school autonomy are Finland, the Czech Republic, the Netherlands, Estonia and the UK. In these countries, schools have more decision-making power in personnel management, resource management and instructional planning (OECD, 2018). The countries with the weakest school autonomy are France, Spain, Greece, Turkey and Mexico. In these countries, decision-making power in terms of personnel management, resource management and planning of teaching rests mainly with the ministry of education. In countries with strong school autonomy, parental involvement in lifelong learning activities is higher than the OECD average. In countries with weak school autonomy, family involvement in lifelong learning activities is lower than the OECD average. In countries with strong

school autonomy, the emphasis on adult education is an indirect support to school success. In their research, Burns and Koster (1988) found that in Finland, which supports school-centered reforms, the ministry of education has significantly devolved its powers to local education districts or school boards.

Table 4 – Comparison of Countries' School Autonomy Qualities

	F i n l a n d	Neth erla nds	Czec h Rep.	U K	Esto nia	Fran ce	S p a i n	Gr ee ce	T u r k e y	Mexico
Teacher-School Management Cooperation										
Compulsory at School		✓	✓							
Legal Mandatory	✓				✓	✓	✓	✓		
Volunteer				✓						
Not Required									✓	✓
Teamwork at School										
Compulsory at School		✓	✓	✓						
Legal Mandatory	✓				✓		✓	✓		
Volunteer						✓			✓	✓
Not Required										
Student Monitoring Application										
Compulsory at School		✓	✓							
Legal Mandatory	✓			✓	✓		✓	✓		
Volunteer						✓			✓	✓
Not Required										
Participation of Teachers in Professional Development Activities										
Compulsory at School		✓	✓	✓						
Legal Mandatory	✓				✓			✓		✓
Volunteer						✓	✓		✓	
Not Required										

Reference: OECD (2018).

In Finland and Estonia, two countries with strong school autonomy, teacher-school management cooperation is legally mandated, while in the Netherlands and the Czech Republic it is mandated by the school. This process is voluntary in the UK. In France, Spain and Greece, countries with weak school autonomy, teacher-school management collaboration is legally mandatory, while in Turkey and Mexico it is optional.

In the Netherlands, the Czech Republic and the UK, countries with strong school autonomy, teacher teamwork is mandated by the school management, while in Finland and Estonia it is legally required. In contrast, teamwork is voluntary in France, Turkey and Mexico, countries with weak school autonomy, and legally mandatory in Spain and Greece.

In the Netherlands and the Czech Republic, where school autonomy is strong, student monitoring is mandated by the school administration, while in Finland and Estonia it is legally required. In contrast, in Spain and Greece, countries with weak school autonomy, student monitoring is legally mandatory, while in France, Turkey and Mexico it is voluntary.

In the Netherlands, the Czech Republic and the UK, which are countries with strong school autonomy, teachers' participation in professional development activities is mandated by the school administration. In Finland and Estonia, this is legally mandatory. In contrast, in France, Spain and Turkey, countries with weak school autonomy, teachers' participation in professional development activities is voluntary, while in Greece and Mexico it is legally mandatory. Özdemir (2020) found in his study that in educational systems where the central administration is strong in decision-making, it is difficult to direct teachers and families to lifelong learning activities and arbitrary obstacles are encountered.

The elements that make up school autonomy are mandatory in countries with strong autonomy, but optional in countries with weak autonomy. In line with this situation, according to Eurostat (2024), in other OECD countries with strong school autonomy, student performance monitoring is usually mandatory by the school. The involvement of teachers and parents in school learning processes is high.

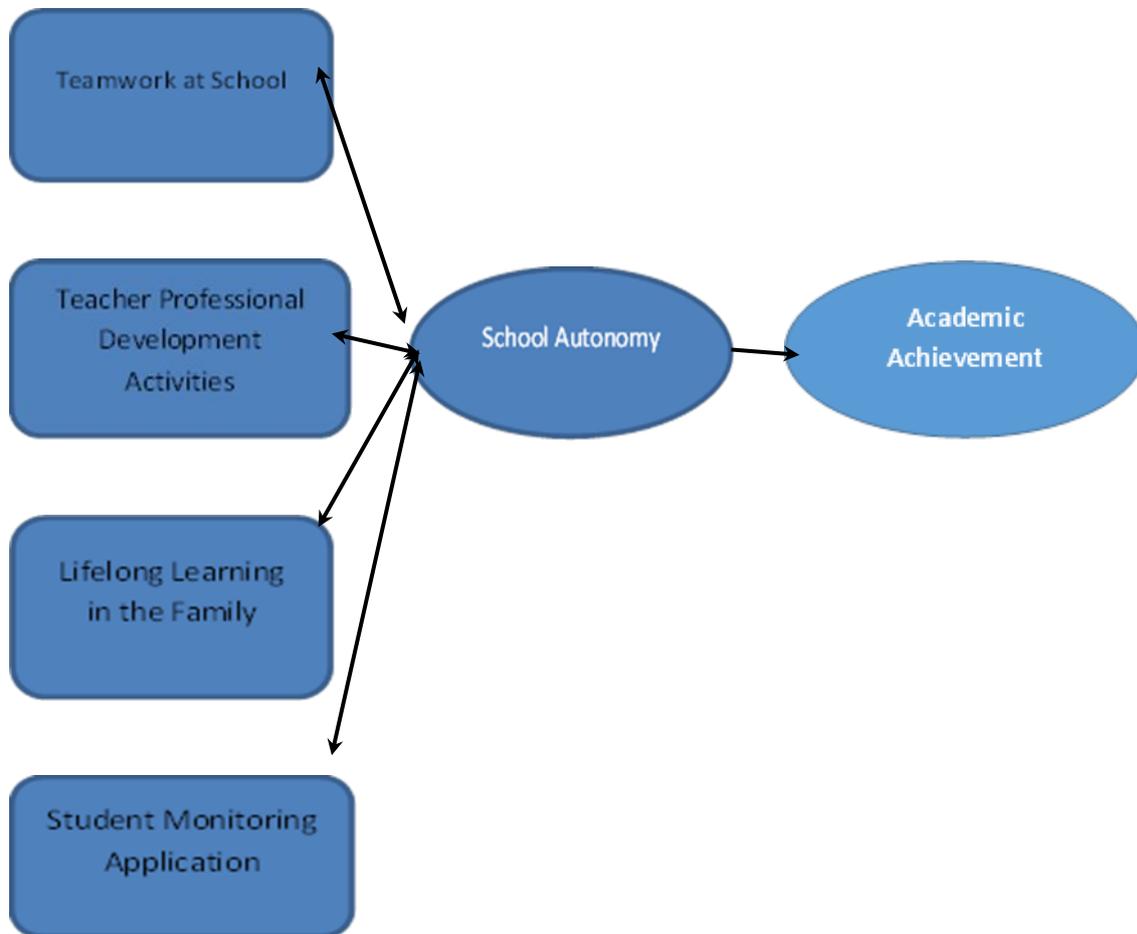
Conclusion

In this study tested whether there is a significant difference between the PISA math, science and reading scores of OECD countries with strong and weak school autonomy. It was determined that there was a significant difference ($p < .05$) between the average scores of countries with strong school autonomy (Finland, Netherlands, Czech Republic, UK and Estonia) and countries with weak school autonomy (France, Spain, Greece, Turkey, Mexico) in PISA (mathematics, science and reading). Countries with strong school autonomy outperformed countries with weak school autonomy in all PISA tests.

The current situation of the countries in the study group was compared according to school autonomy and families' participation in lifelong learning activities. In countries with strong school autonomy, schools have more decision-making authority in personnel management, resource management and instructional management. In countries with weak school autonomy, the decision-making authority for personnel management, resource management and instructional planning rests mainly with the ministry of education. In countries with strong school autonomy, parental involvement in lifelong learning activities is higher than in countries with weak school autonomy. Adult participation in lifelong learning activities creates an environment in the family that supports student success.

The rates of teamwork, student monitoring and teacher participation in professional development activities were compared in the countries in the study group. In countries with strong school autonomy, teachers' participation in teamwork and professional development activities is mandated by school management or legally required. In countries with weak school autonomy, these are optional. In countries with strong school autonomy, teachers' professional development is monitored by the school management. When the quantitative and qualitative data in this study are evaluated together, the outlook of schools' academic achievement in terms of school autonomy can be expressed as a model as follows:

Figure 2 – School Autonomy Impact Model



It can be stated that school autonomy and its components have a linear effect on sustainable academic achievement. The academic success of schools can be increased if the school has autonomous management, decision-making authority and if stakeholders work in harmony. Improving the academic conditions of schools in countries with weak school autonomy can only be possible through the full implementation of school autonomy policies. With the expansion of school autonomy, the functioning of the school will be the responsibility of the school teachers' council, not the administrator. Schools will have self-governing democratic management without imposing an economic burden on the public sector. The school administrator, the head of the PTA and all teachers will be permanent members of

the school board. The school board will have the authority to decide on the school budget. The school will be the decision-making authority in the implementation of supportive education to improve students' academic achievement. The school board will have full authority to make disciplinary decisions. Teachers will first submit their annual professional development activity performance reports to the school management. Schools will be empowered to establish protocols with civil society organizations to organize lifelong learning activities. Schools' academic performance and educational activities will be monitored and evaluated by the provincial education coordinator. The provincial education coordination office will be the supplier in solving problems that exceed the capacity of the school.

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