| Research Article / Araştırma Makalesi|

Poverty and Academic Achievement in the Light of Teachers' Experiences and Perceptions: A Phenomenological Study

Öğretmenlerin Deneyim ve Algıları Işığında Yoksulluk ve Akademik Başarı: Fenomenolojik Bir Araştırma

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Abstract

Purpose: The principal objective of this study is to elucidate the experiences and perceptions of teachers regarding poverty and academic achievement, and to ascertain the extent to which these experiences and perceptions are reflected in their professional practices. The research will analyze how teachers perceive the impact of poverty on students' academic achievement, how teachers' perceptions of poverty and academic achievement affect their teaching strategies and classroom practices, and which strategies teachers should develop to increase the academic achievement of poor students. Furthermore, the link between poverty and education will be evaluated through the eyes of teachers.

Design/Methodology/Approach: This study was conducted with a qualitative, descriptive phenomenological research design and interpretive paradigm. The aim of this approach is to explore lived experiences, events or situations as they are, and to examine how these experiences are perceived and made sense of by individuals. The study sample comprises teachers employed in the Karatay, Meram and Selçuklu districts of Konya province. Ten teachers employed at Anatolian, Science and Social Sciences High Schools, which are distinguished by their academic excellence, were selected through the criterion sampling method, which is a sub-sample of the more commonly used purposeful sampling technique in qualitative research. A focus group interview was utilized as the primary data collection instrument in the study. The data analysis of the research was conducted using a descriptive phenomenological method with the NVIVO 14 software package.

Findings: The research demonstrated that poverty has a detrimental impact on students' access to learning resources, the quality of practical education, motivational and emotional effects, academic performance and development. Conversely, it was determined that the implementation of strategies such as access to resources, academic support, motivation, and psychological assistance could prove effective in enhancing the academic performance of underprivileged students.

Highlight: In regard to the interrelationship between poverty and education, the availability of resources, learning assistance, motivation, self-assurance, and psychological and social support have been demonstrated to enhance academic performance. Poverty has a profound impact on students' access to education, learning processes and academic achievement. The attainment of success in education is contingent upon both the individual efforts of the student and the socioeconomic conditions in which they live.

Öz

Çalışmanın amacı: Bu çalışmanın temel amacı, öğretmenlerin yoksulluk ve akademik başarıya dair deneyimlerini, algılarını ve bu deneyim, algıların mesleki uygulamalarına nasıl yansıdığını ortaya çıkarmaktır. Araştırma kapsamında "öğretmenlerin yoksulluğun öğrencilerin akademik başarıları üzerindeki etkisini nasıl algıladıkları, öğretmenlerin yoksulluk ve akademik başarı algılarının öğretim stratejilerini ve sınıf içi uygulamaları nasıl etkilediği, öğretmenlerin, yoksul öğrencilerin akademik başarılarını artırmak için hangi stratejileri geliştirmeleri gerektiği" soruları ile yoksulluk ve eğitim arasındaki bağlantı öğretmenlerin gözünden değerlendirilmiş olacaktır.

Materyal ve Yöntem: Bu araştırma yaşanmış deneyimleri, olayları veya durumları olduğu gibi keşfetmeyi hedefleyen ve bu deneyimlerin bireyler tarafından nasıl algılandığını ve anlamlandırıldığını inceleyen nitel, betimsel fenomenolojik araştırma deseni ile yorumlayıcı paradigma ile yürütülmüştür. Araştırmanın örneklemini Konya ili Karatay, Meram ve Selçuklu ilçelerinde görev yapan öğretmenler oluşturmaktadır. Öğretmenler nitel araştırmada sıklıkla kullanılan amaçlı örneklemenin alt örneklemi olan kriter örnekleme alma yöntemiyle akademik başarı yönünden iyi olan "Anadolu, Fen ve Sosyal Bilimler Liselerinde" görev yapan on öğretmen seçilmiştir. Araştırmada veri toplama aracı olarak odak grup görüşmesi yapılmıştır. Araştırmanın veri analizinde NVIVO 14 paket programı ile betimleyici fenomenolojik yöntem kullanılarak analizler yapılmıştır.

Bulgular: Araştırma yoksulluğun, öğrencilerin öğrenme kaynaklarına erişimini, uygulamalı eğitim eksikliğini, motivasyon ve duygusal etkilerinin olduğunu, akademik performans ve gelişimini olumsuz etkilediğini göstermiştir. Öte yandan yoksul öğrencilerin akademik başarılarının artırılması için erişim ve kaynaklar, akademik destek, motivasyon, psikolojik destek gibi stratejilerinin kullanılması gerektiği bulgusuna ulaşılmıştır.

Önemli Vurgular: Yoksulluk ve eğitim bağlantısı açısından kaynaklara erişim, öğrenme desteği, motivasyon ve özgüven psikolojik ve sosyal destek akademik başarıyı artırmaktadır. Yoksulluk, öğrencilerin eğitime erişimlerini, öğrenme süreçlerini ve akademik başarılarını derinden etkilemektedir. Eğitimde başarıya ulaşmak, öğrencilerin yalnızca bireysel çabalarına değil, aynı zamanda içinde bulundukları sosyoekonomik koşullara bağlıdır.

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INTRODUCTION

Education is an efficacious instrument that enhances individuals' involvement in social and economic activities (O'Brien et al., 2024; Ravi, 2022). However, achieving success in education (Allen, 2024) depends not only on students' individual efforts (Akça et al., 2017) but also on the socioeconomic conditions in which they live (İnanç, 2023). The socioeconomic conditions in which students reside (İnanç, 2023) also exert a significant influence on their educational trajectory. In this context, poverty represents a significant factor that profoundly impacts students' access to education, learning processes and academic achievement (Clark & Kjellstrand, 2024). Notwithstanding the endeavors to guarantee equal opportunities in education (Kaplan & Owings, 2021), poverty persists as a multifaceted impediment that constrains students' cognitive and emotional growth (Wages, 2015). It is therefore evident that a more profound comprehension of the intricate interconnection between poverty and academic performance is imperative (Klapp et al., 2024). Teachers are the most significant stakeholders in this context, as they are directly exposed to and affected by the consequences of this relationship (Singal, 2014). Teachers engaged with students from economically disadvantaged backgrounds witness the difficulties these students face in their educational life (Terzi et al., 2023), observe their academic achievement (Kim, 2024) and develop various strategies to overcome these difficulties (Gaete & Gomez, 2019). In the literature on the subject, the education-poverty nexus (McNicholl & McNamara, 2019), the connection and effects of poverty with different variables (Hartley et al., 2024; Spada et al., 2024), education (O'Brien et al., 2024) and academic achievement (Clark & Kjellstrand, 2024) have been studied individually, but teachers' perceptions of poverty and academic achievement and the effects of these perceptions on students have not been sufficiently examined in terms of developing educational policies and practices. This situation also creates a gap in this field. In this context, focusing on teachers' experiences and perceptions on this issue (Gaete & Gomez, 2019) can provide valuable information to support efforts to ensure equal opportunities in education (Akça et al., 2017). The impact of poverty on education is not merely confined to the lack of material resources (Tierney, 2015; Zhang, 2024), but also plays a pivotal role in influencing students' motivation to learn (Newaz, 2023), their psychosocial status and perceptions of the future (Gaete & Gomez, 2019; Kaplan & Owings, 2021). Poor students often face disadvantages in their learning processes (Wages, 2015), such as emotional support (Çelik, 2023), a suitable study environment, academic achievement (Yu et al., 2018) and access to educational materials (Li et al., 2024). The role of teachers in supporting the learning processes of these students is critical in mitigating the effects of these challenges (Singal, 2014). Therefore, investigating teachers' perceptions of the link between poverty and academic achievement and how these perceptions are reflected in their teaching processes is important for world education systems (Wakuma, 2024).

In this study, a qualitative, phenomenological approach will be adopted to facilitate a comprehensive examination of teachers' perceptions of poverty and its relationship with academic achievement. Phenomenological research is a method that focuses on understanding individuals' experiences in depth (DeHart, 2023; Larsen, 2023). In this context, it provides an appropriate framework for examining teachers' personal experiences and perceptions of poverty and the effects of these experiences on their professional practices. This method will facilitate an assessment of the impact of poverty on education, encompassing both external factors (Hartley et al., 2024; Ngepah et al., 2023) and individual perceptions and experiences (Gardiner & Hajek, 2024). Teachers' experiences are of vital importance in efforts to provide equal opportunities in education and combat socioeconomic disadvantages (McNicholl & McNamara, 2019). In particular, the role of teachers in providing guidance, support and motivation to students from disadvantaged backgrounds in the learning process is of significant importance. However, the challenges faced by teachers in this process and their methods of coping with these challenges are frequently overlooked in the formulation of educational policies (Kanat et al., 2024). This study aims to address this gap by examining teachers' individual perceptions. The principal objective of this study is to elucidate the perceptions of poverty and academic achievement held by teachers and to examine the manner in which these perceptions are manifested in their professional practices. Within the scope of the research, 'how teachers perceive the impact of poverty on students' academic achievement, how teachers' perceptions of poverty and academic achievement affect teaching strategies and classroom practices, which strategies teachers should develop to increase the academic achievement of poor students' will be analyzed from the perspective of teachers. In line with the aim of understanding the link between poverty and academic achievement (Spada et al., 2024: Michael & Kyriakides, 2023) in the light of teachers' experiences and perceptions, the findings of this study will both contribute to the development of policies towards equal opportunities in education and provide practical recommendations to support teachers' professional development. Focusing on teachers' voices and experiences will provide guidance to policy makers, education administrators and education stakeholders on the link between poverty and academic achievement as a critical step towards developing more inclusive and effective strategies to combat poverty in education.

METHOD

Research Design

The principal objective of this study is to elucidate the experiences and perceptions of teachers regarding poverty and academic achievement, and to ascertain the extent to which these experiences and perceptions are reflected in their professional practices. The study was conducted in accordance with a descriptive phenomenological research design, which is one of the qualitative research methods (Creswell & Guetterman, 2019). Phenomenological research is a research method that aims to gain an in-depth understanding of people's experiences, perceptions and meanings (DeHart, 2023). This type of research aims to explore lived

experiences, events or situations as they are and examines how these experiences are perceived and made sense of by individuals (Larsen, 2023). In addition, this research was conducted with the interpretive paradigm. The interpretive paradigm focuses specifically on examining how people perceive the world, how they make sense of their experiences, and how they shape interactions in the social context (Gunbayi & Sorm, 2020).

Sampling

The sample for this study comprises teachers currently employed in the Karatay, Meram and Selçuklu districts of Konya province. The teachers were selected from those employed at Anatolian, Science and Social Sciences High Schools, which are distinguished by their academic achievement. This was achieved through the criterion sampling method, which is a sub-sample of the more frequently used qualitative research technique of purposeful sampling. Table 1 presents the demographic information of the teachers who participated in the study.

Table 1. Demographic information of the participants

Participants	Gender	Title	Duty Station	Branch
Participant A	Male	Expert Teacher	Karatay	Turkish Language and Literature
Participant B	Female	Head Teacher	Meram	Mathematics
Participant C	Male	Expert Teacher	Selçuklu	Guidance
Participant D	Male	Head Teacher	Meram	Chemistry
Participant E	Female	Expert Teacher	Karatay	Physics
Participant F	Female	Expert Teacher	Meram	Biology
Participant G	Female	Expert Teacher	Karatay	Geography
Participant H	Male	Teacher	Selçuklu	Music
Participant I	Female	Head Teacher	Selçuklu	History
Participant J	Male	Head Teacher	Selçuklu	Physical Education and Sport

Upon analysis of Table 1, it becomes evident that a total of ten teachers participated in the research. Teachers are affiliated with the following academic departments: Turkish Language and Literature, Mathematics, Guidance, Chemistry, Physics, Biology, Geography, Music, History, Physical Education and Sports. The majority of the teachers who participated in the study were specialists and head teachers.

Data Collection Tool

In the study, a focus group interview was selected as the data collection instrument. The focus group interview is a research tool that enables the researcher to gain an understanding of the thoughts and perspectives of a larger group of participants through the use of group interaction (Denzin & Lincoln, 2018). The interview format enables the exploration of diverse perspectives on a given topic, facilitating the development of ideas through group interaction (Creswell, 2015; Flick, 2022). The study was moderated by the researchers. The focus group interview was conducted in a manner that fostered sincerity and comfort for the teachers, allowing them to express their views on the subject matter in an open and relaxed manner. With the consent of the participants, the interviews were audio-recorded.

Data Analysis

NVIVO 14 package program was used in the data analysis of the research. Gunbayi (2023) divides data analysis in qualitative research into four categories as "thematic analysis, descriptive analysis, content analysis and analytical generalization". In this study, analyses were made using these categories and Giorgi et al. (2017) descriptive phenomenological method. In order to minimize coding errors during the process of creating themes in the research, transcript codes were examined by five experts and subjected to Fleiss Kappa reliability analysis. As a result of the analysis, it was determined that the reliability coefficient between the coders was [K=.872, p=.001]. This result shows that the agreement between the coders is quite high (Gwet, 2021). For ethical reasons, participants were coded with the letters 'A, B, C, D, E, F, G, H, I, and J'.

FINDINGS

The themes, categories and codes related to how teachers perceive the impact of poverty on students' academic achievement are presented in Table 1, the themes, categories and codes related to how teachers' perceptions of poverty and academic achievement affect teaching strategies and classroom practices are presented in Table 2, the themes, categories and codes related to which strategies should be developed to increase the academic achievement of poor students are given in Table 3, and the themes, categories and codes related to how academic achievement will be affected when poverty is reduced in the light of teachers' experiences and perceptions are given in Table 4.

Table 2. Themes, categories and codes related to the effect of poverty on students' academic achievement

Themes	Category	Code	Participants
Lack of Access to Learning Resources	Lack of Material	Lack of books, test books, microscopes, maps, sports equipment	A, B, F, G, J
	Lack of Technology	Digital resources, computer, internet, geographical information systems	B, E, G
Lack of Applied Training	Laboratory Studies	Chemistry and physics experiments, lack of biology equipment	D, E, F
	On-site Learning	Not being able to participate in historical sites, nature trips, geography activities	I, F, G
	Art Education	Not being able to participate in instrument, music lessons and clubs	H
Motivation and Emotional Effects	Self-confidence and Social Environment	Lack of self-confidence, social isolation, feeling of being left behind	C, H, J
	Stress and Hopelessness	Stress due to financial difficulties, hopelessness, lack of motivation	C
Academic Performance and Development	Effects on Course Success	Lack of interest in reading, mathematics, science and history	A, B, D, F, I
	Cognitive and Physical De	Lack of nutrition, inability to participate in sports activities	A, B, C, D, E, F, G, H, I, J

When the themes, categories and codes related to the effects of poverty on students' academic achievement are analyzed in Table 2, the theme of "Lack of Access to Learning Resources" from the categories of lack of materials and lack of technology; the theme of "Lack of Applied Education" from the categories of laboratory studies, on-site learning and art education; the theme of "Motivation and Emotional Effects" from the categories of self-confidence and social environment, stress and hopelessness; and the theme of "Academic Performance and Development" from the categories of effects on course success, cognitive and physical development. Teachers' opinions on the subject are given below.

[...poverty has a significant impact on students' development of language skills. Especially in order to acquire the habit of reading, students need access to a variety of books, magazines and literary works. However, poor students often do not have access to these resources. The lack of bookshelves in their homes or limited access to libraries has a direct negative impact on their vocabulary development and reading comprehension skills. In addition, their written expression skills are limited, as they need a large vocabulary and literary background to write effectively. This situation negatively affects not only their academic success but also their life skills in general, leading to a loss of self-confidence. A].

[...mathematics is an area where students develop abstract thinking and problem-solving skills. However, poor students often lack sufficient motivation during lessons. There are several reasons for this: Firstly, they do not have a quiet study space at home. Secondly, families do not have the financial means to invest in educational materials. For example, students who do not have access to resources such as test books, examples with solutions or subscriptions to online platforms have difficulty in making up for their deficiencies. In addition, not being able to attend private lessons or study centers is another factor that increases the achievement gap. When all these factors come together, poverty seriously lowers the level of success in mathematics. B].

[... not only the physical but also the emotional and psychological effects of poverty are profound. Students in financial difficulties often tend to isolate themselves from their social environment. Lack of self-confidence, feelings of inadequacy and hopelessness about the future seriously undermine their academic motivation. In addition, communication problems, which are common in families struggling with economic problems, cause students to seek support at school. Some students start to be absent because they cannot carry these emotional burdens. In the long run, this situation deeply affects both the academic and personal development of students. C].

[...chemistry is a subject that students can learn through experimentation and visualization. However, poor students do not have enough access to laboratory facilities at school or do not have the necessary materials to conduct even simple experiments at home. The materials used in chemistry classes can often be costly, putting poor students at a disadvantage. In addition, not being able to participate in science centers or science activities reduces their interest and motivation. Such shortcomings can have a negative impact on students' achievement in the course and may also lead to a decrease in their interest in science. D].

[...in order to learn physics, theoretical knowledge should be supported by practical applications. However, poor students have great difficulties in participating in laboratory studies or experiments. This deficiency causes physical concepts to remain abstract and students have difficulty in understanding these subjects. For example, the inability to obtain even the necessary equipment for a simple experiment deprives students of the opportunity to learn through experience. In addition, lack of access to technology prevents students from doing research on physics topics and utilizing interactive resources such as computers and the Internet. E].

[...biology aims to increase students' understanding of nature and their scientific curiosity. However, poverty is a major obstacle to this process. Students who cannot access basic laboratory materials such as microscopes and slides are deprived of the practical aspect of this course. In addition, participation in activities such as nature trips and science camps, which are frequently organized in the biology course, becomes almost impossible for poor students due to financial reasons. This situation directly affects students' learning process and reduces their interest in science. Poverty not only creates a lack of materials, but also suppresses students' self-confidence and sense of curiosity. F].

[...the use of visual materials in geography lessons and on-the-spot learning make the information more permanent. However, students growing up in poverty generally cannot access materials such as atlases and maps. Not being able to benefit from technological resources also makes this situation more complicated. For example, students who cannot use digital maps or geographical information systems remain away from modern learning methods. In addition, excursions to historical or natural sites in geography lessons are no more than a dream for these students due to economic reasons. G].

[...music is an important subject for students to develop creative thinking and emotional expression skills. However, poor students find it difficult to buy instruments and receive the necessary training to develop in this field. Often, they are unable to attend individual lessons or music clubs, which are essential for music education. This situation causes students to lose interest in music over time and not realize their potential. In addition, a student who cannot afford an instrument due to economic reasons may feel behind his/her friends and this damages his/her self-confidence. H].

[...in history lessons, supporting the information with visual materials and visiting historical places makes learning much more effective. However, poor students find it difficult to participate in trips organized to historical places. The lack of access to documentaries, films or special history books reduces students' interest in the subject. This not only leads to a lack of interest in history, but also affects students' general cultural knowledge. It is also observed that poverty limits students' imagination and analytical thinking skills. I].

[...students' participation in physical activity in physical education and sports classes is important for healthy development and team spirit. However, poor students have serious problems in accessing sports equipment. For example, a student's lack of sports shoes or uniform prevents him/her from actively participating in classes. In addition, poor students are often unable to develop their talents because they cannot participate in sports clubs or professional training. This situation negatively affects both physical development and self-confidence, and these students feel behind their friends J].

Table 3. Themes, categories and codes related to how poverty and academic achievement perception affect teaching strategies and classroom practices

Theme	Category	Code	Participant
Poverty and Education Linkage	Access to Resources	Classroom library, no-cost resources	A, B, C, D, E, F, G, H, I, J
		Digital and visual materials	A, B, C, D, E, F, G, H, I, J
	Learning Support	Inclusive strategies, one-to-one support	A, B, C, D, E, F, G, H, I, J
		Creative writing, working in small groups	A, E, G
	Motivation and Self-confidence	Achievement awards, positive feedback	A, B, C, D, E, F, G, H, I, J
		Opportunities to showcase talent	H, J
	Psychological and Social Support	Psychological interview, positive environment	A, B, C, D, E, F, G, H, I, J
	Academic Success	Additional work, simplification	A, B, C, D, E, F, G, H, I, J
		Simulations and virtual tours	A, B, C, D, E, F, G, H, I, J

When the themes, categories and codes related to how the perception of poverty and academic achievement affect teaching strategies and classroom practices are analyzed in Table 3, the theme of 'Poverty and Education Linkage' was reached from the categories of access to resources, learning support, motivation and self-confidence, psychological and social support, and academic achievement. The opinions of the teachers on the subject are given below.

[...since poverty negatively affects students' language development and academic achievement, I tried to use more inclusive and supportive strategies in my lessons. For example, instead of expecting my students to buy books, I created a class library and offered books at different levels. I also tried to make it easier for students to understand literary texts by using visual materials and digital resources in my lessons. Since I realized that students living in poverty had difficulty in expressing themselves, I gave more space to creative writing activities and tried to increase their self-confidence through such activities. Creating a positive environment in the classroom is very important to reduce the anxiety of these students and make them feel more valuable. A].

[...for students experiencing poverty in mathematics lessons, I simplified the course materials and preferred to work with inexpensive resources. For example, I took care to keep the examples on the board accessible to everyone and to simplify complex concepts. I also spent more time on in-class reinforcement activities because I knew that students did not have access to outside tutoring or additional resources. Taking into account the loss of motivation brought about by poverty, I often encouraged them to achieve small successes and encouraged them through rewards. B].

[...when I was working with students living in poverty, I was guiding them by taking their psychological conditions and social concerns into consideration. First of all, I was trying to understand their needs by conducting one-to-one interviews with these students. Together with my fellow teachers, we were developing strategies to prevent the exclusion of these students in the classroom environment. In order to increase academic achievement, I organized motivational activities and advised students to set attainable goals. I also guided families by researching opportunities such as scholarships and support programs. In order to reduce the obstacles created by poverty, I paid attention to activities that highlighted students' strengths and increased their self-confidence. C].

[...laboratory studies have an important place in chemistry course, but poor students may experience disadvantages due to lack of materials. To compensate for this situation, I conducted laboratory experiments in groups and ensured that resources were shared by the class. I also emphasized experiments that could be carried out with inexpensive and simple materials. I tried to make use of technological resources such as videos, simulations and digital tools to make theoretical knowledge more comprehensible to students. Knowing the negative impact of poverty on motivation, I constantly gave positive feedback to encourage these students and increase their participation in lessons. D].

[...in physics lessons, experiments and visual materials are of great importance for students to understand abstract concepts. However, poverty can prevent students from actively participating in these processes. For this reason, I made experimental materials available for common use in the classroom and preferred experiments with low-cost materials that could be found at home. For students who did not have access to technological resources, I took care to practice more in the classroom. In order to increase the interest of students in poverty in physics lessons, I made the subjects more concrete by using examples from daily life. I also provided one-to-one support by doing additional studies to ensure that these students did not fall behind. E].

[...in biology lessons, it is very important for students to learn through observation and experimentation. However, poor students may be deprived of activities such as laboratory and excursions. For this reason, I tried to visualize the topics by using digital microscope images, animations and videos in the classroom. I also organized in-class simulations for students who could not participate in nature trips due to budgetary constraints. F].

[...maps, atlases and visual materials are of great importance in geography lessons. However, since poor students do not have access to these resources, I was careful to use digital maps and free materials in the classroom. I tried to ensure that all students learn equally by simulating excursion and observation activities in the classroom. I also organized small group activities to encourage the active participation of these students in the learning process. In order to reduce the impact of poverty on motivation, I tried to make geography lessons more fun and interactive, and I personalized the topics by giving examples from their own environment to students. G].

[...the ability to play an instrument has an important place in music lessons. However, poor students may experience disadvantages in this area because they cannot provide their own instruments. For this reason, I ensured the shared use of school instruments in the classroom and took care to distribute such resources equally. I also organized additional lessons for poor students to develop their musical skills and tried to interest them in activities that did not require any cost, such as body percussion. H].

[...visualizing and dramatizing historical events in history lessons facilitates the learning process. However, students living in poverty often do not have access to such materials. For this reason, I used interactive methods in the classroom and tried to support everyone's learning by preparing visual presentations and videos. For students who could not participate in excursions or visits to historical sites, I organized virtual tours or simulations in the classroom. I].

[...in physical education classes, poor students may have difficulties in accessing sports equipment. I also planned games and exercises based on individual efforts to develop students' physical abilities. To prevent poverty from demotivating students, I encouraged every student, regardless of their achievements, and tried to instill the spirit of working together through team games. I allowed students to express themselves, taking into account that sport provides not only physical but also emotional balance. J].

Table 4. Themes, categories and codes related to strategies to be developed to increase the academic achievement of poor students

Theme	Category	Code	Participant
Access and Resources	Training Materials	Classroom library, digital resources	A, B, D, E, F, I, G
	Cost-Free Solutions	Free materials, shared use	B, D, E, F, H, J
Academic Support	Facilitating Learning	Group work, one-to-one support	A, B, D, E, F, G
	Visualisation	Simulations, visual content	D, E, F, G, I
Motivation	Increasing Self-Confidence and Interest	Positive feedback, rewarding	B, I, H, J
Psychological Support	Social Engagement	One-to-one interviews, group work	C, A, J

When the themes, categories and codes related to the strategies that should be developed to increase the academic achievement of poor students are analyzed in Table 4, the theme of 'Access and Resources' from the categories of educational materials and cost-free solutions; the theme of 'Academic Support' from the categories of facilitating and facilitating learning; the

theme of 'Motivation' from the category of increasing self-confidence and interest; and the theme of 'Psychological Support' from the category of social participation. The opinions of the teachers on the subject are given below.

[...it is of great importance to provide access to more resources in the classroom to increase the academic achievement of poor students. Therefore, I created a classroom library for my students and provided information about books that can be borrowed from local libraries. I also suggested cost-free activities such as creative writing exercises and journaling to improve their written expression skills. In literature classes, I organized word games to increase students' vocabulary and encouraged them to analyze texts from their own perspectives. It is often difficult for poor students to express themselves, so I emphasized individual work such as writing poems and stories. I tried to create an equal learning environment by sharing digital content in the classroom for students without access to technology. A].

[...to improve the achievement of poor students in mathematics classes, I promoted free and accessible resources. I downloaded free tests and worksheets from various online platforms and shared them in the classroom. I helped students reinforce the topics they had difficulty understanding by working one-on-one. I also organized group work to improve their problem-solving skills. These students are often reluctant to participate in class, so I tried to create an encouraging environment for them. I made the lessons more fun with gamified learning methods and gave them constant motivational feedback to improve their achievement. B].

[...an effective counselling process for poor students plays a critical role in increasing their academic success. Firstly, I was conducting regular one-to-one interviews to understand the needs of the students and direct them to the right resources. In these interviews, I was trying to motivate the students and help them set goals for the future. I was informing them to benefit from scholarships, free courses and social assistance. In the classroom environment, I organized socialization activities for students to express themselves. I aimed to increase the self-esteem of students who had self-confidence problems due to poverty by giving them responsibility in activities that would highlight their success. C].

[...to increase the success of poor students in chemistry lessons, I emphasized experiments that could be done with simple and low-cost materials. Instead of assignments requiring experiments at home, I reinforced the subjects with group work in the classroom. I also compensated for the lack of a laboratory to some extent by using engaging videos and simulations related to science. For students who did not have access to technological tools, I made the information more concrete through interactive methods in the classroom. I tried to increase my students' interest in science by directing them to free science festivals and competitions. I often gave positive feedback and rewarded their small successes to make these students feel competent. D].

[...in physics lessons, I used examples from daily life and cost-free experiments to facilitate the understanding of abstract concepts. In order to show students that success in physics does not depend on financial resources, I suggested projects that could be done with materials available at home. In addition, for students who did not have access to technology, I showed videos in the classroom and tried to increase physical experiences. By organizing group work, I helped poor students to express themselves more easily in groups. To increase the motivation of students in poverty, I often helped them set goals and encouraged them to participate in physics competitions. E].

[...in biology lessons, I used visual materials and digital content more often in the classroom to ensure the active participation of poor students in the learning process. For students who did not have the opportunity to conduct experiments at home, I organized simple and low-cost experiments in the classroom. I also tried to make activities such as nature walks and observation activities free and accessible to increase students' interest in biology. In order to make biology topics more concrete, I shared the resources I obtained from online platforms in the classroom. I conducted one-to-one lessons and reinforcement activities to make up for the deficiencies of these students. I also encouraged students through activities such as group presentations to increase their self-confidence F].

[...in order to increase the success of poor students in geography lessons, I used free digital versions of materials such as maps and atlases. I also tried to compensate for their lack of access to technology by using online tools that simulate geographical events with my students in the classroom. Instead of field trips, I organized virtual tours in the classroom and reinforced the subjects with visual materials. To increase interest in geography, I personalized the subjects based on the characteristics of the region where the students lived. I organized additional study hours for poor students to make up for their deficiencies and took care to answer their questions one-to-one G].

[...in music lessons, to increase the success of poor students, I concentrated on activities such as practicing with free instruments and body percussion. I made the school's musical instruments available for common use in order to overcome my students' lack of instruments. I also reduced students' individual performance anxiety by organizing collective music activities. In order to connect them more to music, I organized small concerts and events where they could showcase their talents. I directed them to free activities and scholarship programs so that financial constraints would not reduce their interest in music. H].

[...in history lessons, I used documentaries, videos and online content in the classroom to enable students to benefit from visual resources. I prepared virtual tours and interactive presentations for students who could not participate in historical site visits. I shared the materials I created in the classroom for students who could not access history books due to financial reasons. I also organized dramatic reenactments and role-playing activities to make history lessons more interesting. In order to increase

the success of poor students in history lessons, I supported them in teams by doing small group work and made them more self-confident. I].

[...to increase the success of poor students in physical education classes, I emphasized low-cost activities and group games. For students who did not have access to sports equipment, I made the school's equipment available for shared use. I also organized individual activities for poor students to discover their talents in sports. I was working to direct them to sports clubs and inform them about scholarship opportunities. In order to increase self-confidence in lessons, I recognized successes, even if small, and allowed them to express themselves in teamwork. In this way, I was trying to contribute to students' emotional as well as physical development through sports. J].

Table 5. Themes, categories and codes related to how academic achievement will be affected when poverty is reduced

Theme	Category	Code	Participant
Access to Education Resources	Reading and Research	Access to books, magazines, newspapers	A, I
	Course Materials	Laboratory, map, atlas	D, F, G
	Technological Tools	Educational software, projection devices	B, E, G
Academic Success	Learning Environment	Work area, desk	B
	Experience and Observation	Nature trips, experiments	D, F, G
	Additional Support	Tutoring, support	B, H
Motivation and Interest	Critical Thinking	History and cultural events	I, G
	Success and Self-Confidence	Feedback, rewarding	A, C, J
Physical Support	Health and Nutrition	Nutrition, shelter	D, E, F
	Psychosocial Support	Counselling, stress reduction	C
Arts and Sport	Artistic Activities	Instrument, music activities	H
	Physical Activities	Sports equipment, teamwork	J

When the themes, categories and codes related to how academic achievement will be affected when poverty is reduced are analyzed in Table 5, the theme of 'Access to Educational Resources' was found from the categories of reading and research, course materials and technological tools; the theme of 'Academic Achievement' from the categories of learning environment, experience and observation, additional support; the theme of 'Motivation and Interest' from the categories of critical thinking, achievement and self-confidence; the theme of 'Physical Support' from the categories of health and nutrition, psychosocial support; and the theme of 'Art and Sports' from the categories of artistic activities and physical activities. The opinions of the teachers on the subject are given below.

[...poverty has a direct effect on students' cultural capital. Access to reading materials such as books, magazines and newspapers is limited, and this situation negatively affects students' vocabulary and language skills. If poverty is reduced, students will have the opportunity to read more books, access a variety of literature and participate in cultural activities. This would increase their critical thinking skills, expressive abilities and academic achievement. In addition, better nutrition and housing conditions increase students' mental and physical energy levels and have a positive impact on their learning process. A].

[...maths often deals with abstract concepts and requires a deep understanding with regular repetition. Poverty negatively affects achievement by limiting students' extracurricular study environments. For example, without a suitable desk or a quiet environment, it is difficult for them to focus on attention-intensive subjects such as maths. With reduced poverty, students can access not only course materials but also tutoring or support programs. This allows them to catch up on missing subjects and increase their self-confidence. Also, the use of technological tools (e.g. graphing calculators, educational software) becomes more widespread, which improves achievement in maths. B].

[...poverty seriously affects the psychosocial situation and motivation of students. Poverty can cause anxiety, stress and fear of the future. This makes it difficult to focus on studies and lowers overall academic achievement. If poverty is reduced, students' emotional health and self-confidence are improved. They will also have higher expectations towards their career goals and be able to participate in activities where they can improve their social skills. More positive and effective planning can be done with students in counselling processes, which contributes to both their academic and personal development. C].

[...experimentation and observation are of great importance for chemistry lessons. However, poor students often find it difficult to access laboratory equipment, experimental materials or specialized course materials. If poverty is reduced, schools can use laboratories more actively and students can improve their scientific thinking and problem-solving skills. Also, when students' nutritional status improves, their cognitive abilities increase, which allows them to perform better in subjects that require analytical thinking, such as chemistry. D].

[...experiments and technological tools are as important as theoretical knowledge in physics courses. However, poverty can limit students' access to physics laboratories and make abstract concepts difficult to understand. If poverty is reduced, more experiments with modern equipment can be conducted in schools and students can more easily integrate science into their lives.

In addition, better living conditions increase students' interest in physical phenomena in everyday life and increase their motivation to learn. E].

[...biology classes require observation and experience of natural life. Poverty restricts students' access to laboratory materials as well as their participation in nature trips or activities in biodiversity sites. If poverty is reduced, students would have greater access to such experiences. In addition, their level of nutrition and health, necessary to understand the functioning of biological systems, would increase, which would reflect positively on their cognitive capacities. F].

[...materials such as maps, atlases, projection devices have an important place in geography lessons. However, poor students may have difficulty in understanding the lessons because they cannot access these resources. Reducing poverty increases access to these materials and strengthens the visual and interactive aspects of the lesson. In addition, by offering activities such as nature trips or cultural tours, students can be shown more concretely how geography touches life. G].

[...music education often requires access to instruments and individual study. Poor students often do not have access to these instruments and therefore cannot benefit from music education. If poverty is reduced, students have access to musical instruments and private lessons, enabling them to develop their talents. At the same time, participation in music activities increases their motivation, which indirectly has a positive impact on their academic achievement. H].

[...chronological thinking and analytical reasoning skills are important in history lessons. However, due to poverty, students cannot access history books, documentaries or museums. If poverty is reduced, students can get concrete learning opportunities by visiting historical sites. This increases their interest in history and gives them a better understanding of the past. Also, participation in social and cultural activities makes history lessons more meaningful. I].

[...poverty negatively affects students' physical activity by limiting their access to sports equipment. Poor nutrition and low living standards also reduce physical performance. If poverty is reduced, students can participate more in sporting activities where they can improve both their physical and mental health. This also improves skills such as discipline, teamwork and leadership. Besides the physical benefits of sport, it is also known to contribute indirectly to students' academic motivation. J].

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In terms of the impact of poverty on students' academic achievement, teachers have indicated that poverty restricts students' access to learning resources, which in turn affects their academic achievement. A lack of resources, including materials and technology, prevents students from receiving an education with adequate resources. In particular, the lack of educational materials, including books, laboratory resources and digital resources, impedes students' ability to engage in more productive learning opportunities. Moreover, the absence of practical training represents an additional obstacle to students' ability to gain a comprehensive understanding of the subject matter. The absence of practical activities, such as laboratory work, on-site learning and art education, hinders students' capacity to consolidate and apply their theoretical knowledge. Furthermore, poverty is also associated with motivational and emotional effects. This finding is consistent with those of previous studies (Wages, 2015; McNicholl & McNamara, 2019; Wang et al., 2024; Zhang, 2024). The lack of self-confidence, social isolation and stress experienced by students due to financial difficulties create psychological barriers that directly affect their success (Spring, 2021; Ravi, 2022). Conversely, the inability of impoverished students to meet their basic needs can also have a detrimental impact on their physical development (Pal, 2024). This situation is reflected in their cognitive development as well as their academic achievement (Allen, 2024; Kim, 2024; Newaz, 2023; Wakuma, 2024). Regarding the effect of poverty and academic achievement perception on teaching strategies, educators strive to implement a range of teaching strategies with the aim of reducing the impact of poverty on students' educational experiences. The incorporation of varied classroom materials and the utilization of digital resources to facilitate access to resources can ensure that students have enhanced opportunities for equitable education (Kaplan & Owings, 2021; Spring, 2021; Ravi, 2022). Furthermore, learning support strategies facilitate access to additional assistance in areas where students may require improvement (Kim, 2024). In addition to inclusive teaching strategies, the implementation of alternative methods, such as one-to-one support and group work, can enhance the efficiency of students' learning processes (O'Brien et al., 2024). Teachers also seek to enhance students' self-confidence by offering rewards for success, positive feedback, and opportunities for students to demonstrate their abilities, thereby providing motivation (Ravi, 2022). Psychological and social support is crucial for addressing the emotional needs of underprivileged students and fostering greater motivation to attend school (Varlık, 2024). Such support has the potential to positively impact students' academic achievement. This situation is analogous to the findings of other studies, including those by Clark & Kjellstrand (2024), Klapp et al. (2024), and Michael & Kyriakides (2023).

Regarding the strategies that should be developed to increase the academic achievement of poor students, teachers suggested increasing access to educational materials and resources to reduce poverty. This is similar to (Gardiner & Hajek, 2024; Hartley et al., 2024; Ngepah et al., 2023). Cost-free solutions, free materials and shared use stand out as an important strategy for ensuring equality in education. The effect sizes of the studies in Kaya & Erdem (2021)'s study on academic achievement are similar to the findings of this research. Furthermore, pedagogical approaches that incorporate group work, one-to-one support, and visualisation have been demonstrated to enhance students' academic achievement (Michael & Kyriakides, 2023). The provision of psychological support and opportunities for social inclusion for students from disadvantaged backgrounds is also an important

strategy. With regard to the effect of poverty reduction on academic achievement, it can be observed that students are able to gain easier access to educational resources when poverty is reduced. The provision of additional resources, including reading and research materials, course materials, and technological tools, can facilitate enhanced educational outcomes for students (Gardiner & Hajek, 2024; Hartley et al., 2024). Furthermore, ensuring students have access to adequate health and nutrition support is crucial for their holistic development, which in turn directly impacts their academic success (Allen, 2024; Wakuma, 2024). The incorporation of art and sports activities into the curriculum can facilitate students' overall achievement by promoting their physical and psychological development.

As a result, combating poverty is a critical factor in improving students' academic achievement. The strategies suggested by teachers cover a wide range from access to resources to motivation and psychological support. Educational policies and practices should take these strategies into account to combat poverty and increase students' academic achievement. It shows that teachers perceive the effects of poverty on students' academic achievement in different dimensions and need to develop various strategies to combat poverty. Teachers stated that factors such as lack of materials, difficulties in accessing technology, lack of participation in practical education and artistic activities negatively affect students' learning processes. In addition, students' lack of motivation, low self-confidence and emotional states such as stress also hinder their academic success. To mitigate these negative effects, teachers recommend increasing access to educational materials and digital resources, inclusive teaching strategies and psychological support. It was emphasised that strategies such as group work, one-to-one support and achievement rewards should be developed to increase the academic achievement of poor students. On the other hand, it was stated that with poverty alleviation, if students have access to educational resources and a healthy learning environment, their academic achievement will increase. Combating poverty can positively affect academic achievement by providing students with a better learning environment both physically and psychologically. Based on these results, the following suggestions are made for researchers for further research.

Suggestions for Future Research

1. Poor students' lack of access to educational materials and technology has a significant impact on their academic achievement. Therefore, education policy makers should work on increasing access to digital resources and technological tools and develop strategies to eliminate digital inequalities in education.

2. It was noted that students from disadvantaged backgrounds require greater assistance to succeed in an educational setting. It would be beneficial for decision-makers to examine the effectiveness of inclusive education strategies and evaluate the impact of group work and one-to-one support on academic achievement. Furthermore, it is recommended that schools provide additional psychological and social support.

Suggestions for Researchers

During the research it was determined that there are research gaps in the long-term effects of poverty on education, evaluation of school-social support collaboration and monitoring of poverty alleviation policies. Therefore, the fulfilment of the following suggestions by the researchers will fill the gaps in the literature.

1. Research should be conducted that examines the long-term effects of poverty on students' educational lives. These studies should look not only at academic performance but also at how poverty affects students' future labor force potential.

2. Poverty appears to play an important role in social environmental factors that negatively affect education. Researchers should examine how schools can develop more comprehensive support systems in collaboration with local authorities, social services and families, and explore the role of out-of-school support in education.

3. The success of education policies and anti-poverty strategies can have a direct impact on the academic achievement of pupils. Researchers should provide data and analysis that contribute to the development of more effective policies by evaluating the impact of anti-poverty projects.

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We hereby declare that the study has not unethical issues and that research and publication ethics have been observed carefully.

Examples of author contribution statements

Adem Çilek: Writing – review & editing, Writing – original draft, Project administration, Investigation, Data curation, Conceptualization. Tarkan Düzgünçınar: Writing – review & editing, Writing – original draft, Conceptualization. Savaş Varlık: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Researchers' contribution rate

The study was conducted and reported with equal collaboration of the researchers.

Ethics Committee Approval Information

Since this research was conducted before 2020, ethics committee permission was not obtained.

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