THE PRIMARY EDUCATION JOURNAL

The Primary Education Journal

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Commonly accepted fallacies in established knowledge as an antithesis to cumulative science

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ABSTRACT

This paper critically examines the concept of cumulative science, arguing that its conventional interpretation can impede genuine intellectual progress. Whilst acknowledging that science builds upon previous work, the author contends that the uncritical perpetuation of commonly accepted, yet potentially flawed, knowledge acts as an antithesis to true scientific advancement. The article highlights a prevailing academic pressure to cite established sources to lend credibility, which can lead to the reiteration of erroneous ideas and stifle original thought. Drawing upon the theory of intertextuality, the author posits that whilst no text is entirely original, this does not negate the capacity for researchers to synthesise unique contributions from their intellectual repository. The central thesis asserts that researchers must move beyond the mere repetition of established fallacies. Instead, they should be encouraged to formulate new theoretical frameworks grounded in their own critical conceptions and experiences. This approach does not advocate for disregarding the foundational work of predecessors, "shoulders of giants" but rather calls for a more robust scientific method. True cumulative progress, it is concluded, is achieved not through the dogmatic repetition of old knowledge, but through the courage to challenge it and propose new, rigorously developed ideas that propel the scientific endeavour forward.

The objective of any empirical scientific field is the establishment of a cumulative body of knowledge upon which the future of science can be built. This is the notion that science will formulate more complete and accurate theories in accordance with the volume of evidence and data gathered. Cumulative science develops not through sudden discovery but through gradual, incremental steps. Whilst revolutionary science occurs infrequently, cumulative science is the most prevalent form of scientific endeavour. What, then, should we understand precisely by the cumulative progress of science? What does this accumulation encompass? And what is its benefit -or detriment- to us as researchers?

There is a well-known metaphor: "There's no need to reinvent the wheel." The cumulative progress of science implies that each new piece of scientific knowledge or discovery is added, like a brick, upon the work that has preceded it, transforming knowledge into a colossal structure. Scientists do not typically start their work from scratch; rather, they see further by, as Newton remarked, "standing on the shoulders of giants." One of the clearest illustrations of this can be seen in the field of astronomy: Copernicus's proposition of a heliocentric model of the universe prepared the ground for Kepler to prove that planets move in elliptical orbits. Newton, drawing upon the work of both Copernicus and Kepler, was then able to formulate the reason behind these movements, the law of universal gravitation. Similarly, the invention of the microscope enabled the discovery of the cell, which in turn led to an understanding of microorganisms and diseases, ultimately resulting in the development of vaccines and antibiotics. Consequently, science often develops not through the sudden epiphanies of a single genius, but as the product of a patient, collective, and cumulative effort spanning generations, constantly evolving and self-correcting. It is for this reason that attempting to dismantle the structure established by our predecessors in order

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to rebuild it from the ground up is a futile exercise. In other words, there is no need to reinvent the wheel.

When I wrote my first scientific-academic book, some of my much-esteemed academic friends were surprised to find no bibliography section at the back. I could only tell them, briefly, that there were no sources I could cite and that I had written everything from scratch. Some researchers hold the view that the greater the number of sources presented in academic work, the better and higher its quality. They are often astonished when I tell them that the famous Nobel Prize-winning dissertation of Nash, the creator of "Game Theory," contains only two references, one of which is to himself. Furthermore, this award-winning work consists of a mere 32 pages, a length that would be considered short in the social sciences today and would likely not be accepted as a dissertation by many.

In our more extended conversations, I tried to explain to my friends that the book I had written was, in fact, an intertextual work. Intertextuality, in its most general definition, is a literary and artistic theory based on the idea that every text is in dialogue with other texts that have been written before it, deriving its meaning from this network of relationships. According to this concept, no text is an entirely original and closed structure; on the contrary, it is perpetually connected to other texts through references, quotations, echoes, parodies, and subtle allusions. Concrete examples of this are frequently encountered in the arts. For instance, Joyce's novel Ulysses bases its entire structure on Homer's Odyssey, presenting a modern rewriting that is in constant dialogue with the ancient text. In Turkish literature, Pamuk's novels are nourished by a wide spectrum, from Divan poetry and folk tales to the modern Western novel, thereby creating an intertextual fabric. In cinema, Tarantino's films exhibit some of the most well-known examples of this concept, with their explicit references to countless works, from old spaghetti westerns to Far Eastern martial arts films. Thus, intertextuality is a key that demonstrates the necessity of seeking a work's meaning not only within itself but also within the vast cultural accumulation with which it converses, offering the reader or viewer a rich semantic layering. The most crucial element of the concept of intertextuality is that no text is entirely original. In reality, every text we write -every article, every book- bears traces of works that were written before it. We generally cite the most popular of these traces in our work. The others remain in the text as our own ideas, synthesised from our past readings.

Within Turkish academic literature, there is a universally accepted -and in my view, erroneous- definition of the concept of education. This definition, which I would have to attribute to its author were I to write it here, is so popular that you can encounter it in almost every study on the concept of education by Turkish researchers. However, it is highly unlikely that you will encounter this specific definition, or similar ones, in the works of researchers outside of Türkiye. As I have stated, I believe this definition to be flawed. Yet, it is so entrenched in Türkiye that if you need to define the concept of education in your work, you will often be expected to use this definition and cite its author. To me, however, the concept of education signifies very different meanings beyond this definition. These meanings contain variations to an extent that I cannot directly attribute them to any single preceding researcher. Nevertheless, proceeding from the principle of intertextuality, they have of course emerged as a result of the works I have read thus far and perhaps the experiences I have gained in fieldwork. Despite this, it is my own original thought.

This is not what we are actually referring to when we speak of the cumulative progress of science. In a study conducted in the social sciences, reiterating previous -and in our view, flawed- definitions is not consistent with the scientific method. A researcher with sufficient experience in a particular subject area ought to have formed a substantial intellectual repository related to their field of research. However, when researchers include information drawn from this repository in their studies, they feel compelled to cite the writings of previous researchers to support their own ideas in order to lend credibility to their work. I believe every researcher has experienced this situation.

Yes, science does progress cumulatively, and each study is one of the elements, like a brick, that constitutes the edifice of science. Yet sometimes -commonly accepted- flawed studies become a defective brick in the construction of this edifice, potentially acquiring the power to bring down the entire structure. At this juncture, it would establish a more robust state of affairs for the scientific method if researchers were to formulate new theoretical frameworks based on their own conceptions, rather than reiterating the commonly accepted fallacies in established knowledge.

This is not to say that we should not include the valuable works of our predecessors in our own studies or that we should disregard them entirely. No, that is not the point I wish to make. However, feeling compelled to do so presents an obstacle to the articulation and production of our ideas as a piece of work.

Today, it is, of course, necessary to include in our own work the results of other studies conducted with different participating groups and at various levels, in connection with the work we are undertaking. It is also necessary to compare our own study with the results of others in light of our findings and to derive discussion from this. In this way, the reader will have the opportunity to view the arguments put forward in the study from a broader perspective. Likewise, when presenting a theoretical framework, it is of great importance to bring together the contributions made by previous researchers to that framework. As I wrote in one of my previous articles, you are not obliged to provide a source for the fact that water boils at 100 degrees Celsius at 1 atmosphere of pressure. This is universal knowledge that is known by all, has been tested or is testable, and its results can be recorded. Another aspect of this is your own ideas. As I mentioned earlier, although no text is entirely original from an intertextual perspective, this does not mean that you cannot convey to your readers and the scientific community your "own" ideas, which have been synthesised through various filters and shaped within your own pool of thought.

To summarise, science is a field that progresses cumulatively, but the cumulative progress of science is not about uncritically accepting old ideas and relegating your own thoughts to the background. It is about standing on the shoulders of giants, as Newton said, whilst conveying your new thoughts to the scientific world, to traverse the necessary paths to become a giant yourself. Scientific progress will be achieved not by the repetition of old knowledge, but through the new ideas put forward by researchers such as you.

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Data sharing is not applicable to this article as no new data were created or analysed in this study.

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Notes on contributor

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The effect of visual art education on nine to ten year old children's appreciation criteria

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ABSTRACT
Education to gain the ability to evaluate works of art will strengthen the child's ability to distinguish the beautiful from the ugly and will lead to the proliferation of individuals with a developed aesthetic consciousness in society. This is an important quality that cannot be sacrificed in the construction of the desired society in the future. In this study, it was aimed to investigate the effects of art education given in primary school Visual Arts course on children's appreciation criteria. For this purpose, art education was applied in the visual arts course of fourth grade students consisting of nineteen female and eighteen male students within the programme created for five weeks and its effects were tried to be determined by the observation method within the scope of qualitative research methods. Firstly, an interview was conducted in order to learn the students' taste criteria, and in this direction, the topics selected for the five-week education were determined by examining the fourth-grade achievements of the Visual Arts Programme. Then, lesson plan and slides related to the subject were prepared. Students were observed during the applications and finally a final interview was conducted to examine the changes in tastes and all the data obtained were analysed. In line with the findings obtained, it was revealed that the students rapidly adopted educational art criticism as a result of the art education related to the programmes given to the fourth-grade primary school students.

Introduction

In the context of our study, 'liking' is defined as the emotional response that leads to the judgement of beauty or ugliness in any subject. 'Criterion' is defined as the principle or standard used to make a judgement or assign value. These definitions, based on the TDK (2019), form the theoretical framework for our research.

What is liking? Is it subjective or objective? What is the relationship between art and sensitivity? These are questions whose answers have been and are being sought in the philosophy of art. Beauty can be seen in the works produced by humans or in nature itself. It can be argued that beauty in art is the beauty that emerges later as a result of human creativity through the use of some techniques of beauty in nature. A work of art is expected to have aesthetic concern, originality and individuality, a pleasing order, and features such as proportion, symmetry, and integrity (Doğu, 2018).

Works of art contain traces, understandings, intuitions, definitions, and narratives of the time they belong to. People who can enjoy a work of art can interpret these traces and expand their worlds of feeling, reason, intuition, and their horizons of thought to reach beyond the ages. For these purposes, when sensitivity to a person is desired, it is necessary to provide art education. As one's senses are trained, one's awareness will increase. We will have more substantial reasons to trust that those with the competence to distinguish the beautiful from the ugly will prefer the beautiful in their behaviour and what others offer.

The students in the research group attending the fourth grade of primary school are in a stage called the Realism

Period (9-12 years old) regarding the developmental stages of children's painting. When the characteristics of children at this stage are examined, they approach painting with a realistic understanding; they establish proportions between body parts in their figures; there are differences in the paintings of girls and boys; they begin to choose colours that are appropriate to reality; they are concerned about conforming to some tastes and measurements of the culture and society they live in; and they begin to follow the rules in terms of the relationship and arrangement between the figure and other elements (Yavuzer, 1998; MEB, 2001: Savaş, 2014).

Critics, who can be claimed to have the power to shape the art world with their criteria of appreciation, are expected not to be prejudiced but to have artistic experience, technical knowledge, and general culture; to be sensitive, to have broad horizons; and to be rational and fair. Practising these characteristics during the comments in class and expressing them as a general culture will ensure that students are at least aware of these concepts. Regarding the importance of criticism in the classroom, it can be said that it facilitates understanding, provides pleasure, is a means of getting to know the student, prepares the ground for new ideas, increases the rate of participation in the lesson, supports tolerance, breaks prejudice, encourages objectivity, encourages group activity, increases artistic culture, teaches to look at the work, develops thinking ability, and establishes a positive-negative balance. Suppose the criteria for students' appreciation of their own and their friends' work or the criteria for criticism are determined in a random, unsystematic way. In that case, it can only be considered a remote possibility that they will be able to fulfil the above functions. Students, like people who need to learn the technique in any other job, need guidance in the specific subject. The following are the stages of criticism that should be followed (Ayaydın et al., 2018):

1. Description: Saying what is seen by looking at the work
2. Analysing: Explaining how the artist uses art elements and design principles
3. Interpretation: Making personal interpretations that may vary according to the students' knowledge
4. Judgment: Reaching a judgement about whether the work is a success or not with the data obtained from the previous stages

Table 1. Sample Educational Art Criticism Questions (Ayaydın et al., 2018)

Description
Which art form is this? (painting, ceramics, sculpture, photography, etc.)
What do you see in this artefact?
What is going on in the artefact?
Are there any figures in work?
How many figures?
What are the figures doing?

Analysing
How are the colours arranged? (dark-light, cold-warm, main-intermediate)
Which lines do you see? (straight, curved, broken)
What shapes do you see? (geometric, organic)
Which tissue is there? (Soft, hard, etc.)
How is the front-back relationship created in objects?
Are there contrasts? How are they constructed?
Are there repeating shapes?
Which technique could the artist have used for this painting?
Where is the emphasis? How is it composed?

Interpretation
What do you think this work is about?
What does the colours here make you feel?

How would you feel if you touched it?

What kind of sound do you hear?

What do you smell?

What do you taste?

Are there symbols? If so, what might they mean?

At that time, what could the artist have conveyed in this work?

What does this painting tell the people of that period?

Judgement

Do you like this work, and why?

Which art theory do you think this work belongs to?

In This Study

This study holds significant implications for the field of art education. It aimed to determine the changes in the taste criteria before and after five weeks of training given to children attending the fourth grade of primary school in a visual art lesson. The findings provide valuable insights into the transformative effects of art education on children's appreciation criteria, underscoring the importance of early exposure to art in shaping aesthetic consciousness. These insights will undoubtedly inform and enlighten educators and policymakers in the field of art education.

Method and Data Analysis

This study is a testament to the pivotal role of educators in shaping children's appreciation criteria. We investigated the effects of art education given in primary school visual arts courses on children's taste criteria. For this purpose, art education was applied in the visual arts course of fourth-grade students, consisting of 19 female and 18 male students, within the five-week programme. The effects were determined by observation within the scope of qualitative research methods, highlighting the integral role of educators in this transformative process.

First, an interview was conducted to determine the students' appreciation criteria. In this direction, the topics selected for the five-week training were determined by examining the fourth-year achievements of the Visual Arts Programme. Then, lesson plans and slides related to the subject were prepared. Students were observed during the applications, and finally, a final interview was conducted to examine the change in tastes. All the data obtained were analysed.

Findings

At the beginning of the study, the following questions were asked to the students before the training, and their answers were recorded:

First question: What do you pay attention to make your painting beautiful?

In the preinterview, the majority of the students answered this question as "to be smooth, not to overflow the paint." When the application process was over, the same people added attention points related to the topics covered in their answers.

Table 2. Students' Answers

Preliminary Interview	Last Interview
K13: I do it smoothly and calmly. If I paint, I try not to overflow.	K13: Colours, whether there is space, perspective, shadow, composition and large and small size
K17: I make sure that the paint does not come out of the lines and that they are straight.	K17: In my painting, I pay a lot of attention and importance to being flat. I try to put the perspective if possible. I chose the colouring to be beautiful and dark. Sometimes, I also use

	light paint. I usually use cold paint in my painting.
K20: Being smooth	K20: Escape point, draw in the middle using cold and warm colours

On the other hand, some students determined criteria that were more related to their feelings in the preinterview. Later, these students also adopted technical information.

Table 3. Students' Answers

Preliminary Interview	Last Interview
K6: My opinion: When I paint, I make sure that my paints are light colours, but my drawing book should be significant. When I draw my picture, for example, the teacher says that when I draw this picture, I think I am doing it in a heavenly place like this. I feel more beautiful, but the beauty of my picture would be a rainbow.	K6: Whether it is dotted, whether it is striped, whether the colours are compatible or not, whether I have drawn carefully, whether the picture fits precisely in its place.
K11: I emphasise music when I paint; I feel and make music. In other words, every painting has its beauty and music, and I make it with music. Music is my life. The music sign on the musical painting is not a left key or a microphone. Musical painting is to feel the music while painting.	K11: For my painting to be beautiful, I first pay attention to colours, i.e., warm and cold colours, striking or appropriate colours. I pay attention to shading and realism. I pay attention to perspective.

Changes were also observed in the answers of children known to be mainstream students.

Table 4. Students' Answers

Preliminary Interview	Last Interview
K15: To colour my book with my pencil	K15: I use the drawing page properly
K21: Which way the pen goes	K21: I pay attention to colours, shadows and light places

Second question: What influences your appreciation of other people's paintings?

Some students answered "being careful" to this question in the preinterview. In the last interview, they included more technical concepts in their answers.

Table 5. Students' Answers

Preliminary Interview	Last Interview
K28: Taking care and colouring beautifully.	K28: I pay attention to the colour, size and shade, and I pay attention to whether he/she made his/her drawing in the centre of the paper.
K27: Using it with care	K27: Whether it is dotted or dotless, shadow and perspective

Some students expressed that they would like it. Their friend did it because they had made labour in the preliminary interview. Then, they started to determine the topics covered as criteria for evaluation.

Table 6. Students' Answers

Preliminary Interview	Last Interview
K10: I would say it is good; I would say it is good that he did it with labour.	K10: I examine whether he/she drew the picture by paying attention to the composition.
K26: For example, my friend is painting, and I say it is beautiful because it has beautiful things on it.	K26: Did he/she apply the subjects we have learnt? What was his/her painting about what he/she painted, and did he/she correctly make the size and smallness?

Some students stated that they paid attention to whether the picture was meaningful or whether it appealed to their feelings. Then, they started to pay attention to technical details.

Table 7. Students' Answers

Preliminary Interview	Last Interview
K24: Did he draw it carefully? What is the meaning of this drawing? Did he draw it based on his imagination? Or did he copy it?	K24: Did he use shading, composition, perspective and colouring?
K19: That the picture has meaning	K19: I evaluate what is in the picture and what he drew according to it. I evaluate according to how he/she drew and whether he/she used dots.
K11: I pay attention to music when I criticise a painting. It is essential for me to feel and see the music while looking at it, and when I say music, I am not talking about songs; I am talking about music, and I think music beautifies the painting.	K11: I pay attention to the warm cold, perspective and composition of the painting. I pay attention to careful colours and shadows.
K6: My opinion: When I saw someone else's painting, I first said it was an excellent work, then I exhibited that painting everywhere, and when I felt perfect when I looked at that painting, I even bought it for myself.	K6: Did he pay attention to his colours? Did he use only lines or dots? Where is the start line, and where is the end line? Does the colour match? Does this fit here? Are the colours on or off? Did he pay attention?

Again, many students expressed criteria such as "not overflowing the paint, drawing properly." After the training was implemented, these students' concepts, worlds and answers expanded.

Table 8. Students' Answers

Preliminary Interview	Last Interview
K5: Paint does not overflow	K5: Perspective, size and smallness of figures, escape point
K25: I look at his/her colouring without overflowing to see if he/she has drawn it crookedly and to see if it is correct; for example, I look to see if he/she has drawn the items of the car correctly.	K25: I look at whether they do not overflow and take care while colouring. I check whether the paper is worn out or not. I look to see if he/she has done perspective. I look at punctuation and colour mixture.
K12: To evaluate someone else's drawing, we should	K12: I mean, it is necessary to look at whether he/she did

consider what they draw straight and upside down.	it right, drew, coloured and whether it turned out well. To look at whether he/she coloured the empty spaces or not.
K3: First, to ensure that the paints do not mix and draw smoothly	K3: Did he make the perspective well? Did he make the escape point? Did he use hot and cold colours?

According to the answers, the students had no technical information before the training. However, after the application, the students immediately adopted the concepts studied and started to use them.

Then, five weeks of training were applied. Although the fourth-grade visual arts course was included in the programme for one hour a week, it was taught for three hours during this process. Students were not given technical information about painting in previous years. The students of the class, who had been taught by the same teacher for four years, were only given feedback such as "Very good, I liked it very much, how well you did it." The students' paintings were not subjected to any objective evaluation, and this feedback was given in the same way to each student who asked for comments about his/her painting.

In the first week, under the "Elements of Art" title, point, line, and colour elements were processed as slides with visual content on the smart board. Georges Seurat, Henri Edmond Cross, Vasily Kandinsky, Lichtenstein, Johannes Vermeer, Joseph Wright, Martin Johnson Hesade, Winslow Homer, Andy Warhol, William Turner, Doğan Arslan's paintings focused on these elements, and students were supported in examining them with questions and answers and sharing thoughts and feelings. In the ongoing lesson, the students drew pictures by taking care to use the elements of art. Afterwards, it was observed that they included educational art criticism questions related to the subject while evaluating themselves and each other.

Image 1 & 2. The Point and Line Elements Studied in the First Week

In the second week, under the title of "Composition", information and examples are given about the placement of the pictures to be drawn in a balanced, regular and pleasing way to the eye. The lesson was taught with slides, questions, and answers prepared for this purpose. Afterwards, it was observed that the students drew attention to the composition. In addition, the students were asked to evaluate their own and their friends' drawings regarding their suitability for the composition. It was determined that the students made sentences related to the composition about using drawing paper, placing the objects and colouring the paper.

Image 3. The Differentiation in the Paintings After the Composition Subject was Taught. (The lesson on colouring and using the whole paper seems to have affected the students)

In the third week, in the lecture under the title of 'Colour' accompanied by slides, the colour scale is a circular structure showing the relationship between primary and secondary colours and complementary colours; concepts such as the physical description of colour in nature, colour mixtures, contrasting and neighbouring colours, warm and cold colours, colour harmony, tonal harmony, harmony of contrasting colours, emotions triggered by colours, correct colour palette, etc., were discussed in the works of painters such as Watteau, Vallotton, Juan Gris, Corot, Marquet, and Kaninsky. When the students were allowed to look at the pictures, they wanted to examine the colour palettes from the slide left open, and it was observed that they carefully examined the mixtures they thought to use in their paintings. While evaluating the lesson products, it was determined that they asked questions about the judgement steps of description, analysis and interpretation and shared their thoughts.

Image 4 & 5. The Effect of the Lesson on Using Colours and Colour Mixtures on the Pictures

In the fourth week lesson on 'Perspective', perspective was introduced as a tool used to show three-dimensional objects on a two-dimensional plane, as well as the art of measure and proportion, which is used to quickly draw and express line, surface, and colour changes according to the distance and proximity of objects to the eye, below and above the eye level. Works of painters such as Hobbema and Caponigro and technical drawings were utilised. It has been observed that the students highly regarded examples seem to merge at the point of escape even though they continue in parallel. It was thought this was because they could be drawn more efficiently than other examples. It was observed that the students immediately adopted the subject and related terms and that they sometimes questioned the drawings in terms of perspective as if they were experts while evaluating the drawings.

Image 6. About Perspective, but the Previous Week's Use of Light, Dark, and Different Colours Still Has an Effect

In the last lesson titled 'Light and Shadow' in the fifth week, the information that the light–medium–dark tone (gradient) values created by light as it spreads on objects, objects and objects are called light shadows, was given with the pictures on the slide specially prepared for the course. Since the light does not illuminate the object with the same intensity from every point, the surfaces close to the direction of light are light because they receive more light; the surfaces far from the light and behind the light appear darker because they receive less light. Question and answer work was performed on natural and light sources. In the classroom, an observation study was conducted on how tones change in light and shadow—the points to be considered while shading was conveyed to the students by trying to make them discover. In the following study, it was observed that the students paid attention to the relationship between light and shadow and made their questions and comments align with their new knowledge during the evaluation.

Image 7 & 8. Light and Shadow, Respectively (All the students presented the products first in black and white and then in colour)

At the end of this training process, the questions asked at the beginning were asked again, and the changes in their answers were analysed. These answers are given in the introduction of the findings section.

Conclusion

As a result of art education, which was linked to the programmes given to fourth-grade primary school students, the students quickly adopted educational art criticism. Before the application, the students' appreciation criteria were mainly in the form of "colouring without overflowing, drawing properly", but after the application, all of the subjects addressed were included in the appreciation criteria even if different students addressed them.

Students learned not only new techniques and a new evaluation method to use while painting but also new words and concepts to enrich their vocabulary and world of thought. They also had the opportunity to discuss and chat about art.

The students thought longer before they started drawing than before this study. This was because they learned many new criteria to be considered. In addition, it was observed that the students progressed not only in that week's topics but also in adding what they had learned before. The topics covered in the previous week are also among those to be considered in the new week.

The awareness and progress of the students in only five weeks in a class where only freehand paintings were previously made, and the technique was not emphasised is remarkable. Both the students' appreciation criteria and their paintings improved. If this study is carried out in all classes throughout primary school, the possibility of a student graduating from primary school and becoming an enthusiastic art critic will be strengthened. Students' aesthetic consciousness will improve, and an increase in the rate of aesthetic contribution to their own lives and their environment can be expected. For these reasons, teachers should be informed about the subject, and visual arts lessons should be taught as needed. In addition, course hours should be increased.

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Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Ethics statement

This study was conducted in accordance with the ethical approval granted by the Ethics Committee of Yildiz Technical University.

Consent

All participants provided informed consent.

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Elif Sami 🔴 Conceptualization, Writing – original draft and Writing – review & editing.

References

Ayaydın, A. (2018). *Görsel sanatlar (1-8. Sınıflar) öğretmenler için öğretim materyali*. Millî Eğitim Bakanlığı.
Doğu, S. (2018). *Felsefe 2 ders kitabı*. Milli Eğitim Bakanlığı.
MEB. (2001). *Bireyselleştirilmiş eğitim programları*. Milli Eğitim Bakanlığı.
Savaş, İ. (2014). Çocuk resmi ve bilinçaltı. (Yüksek Lisans Tezi). İstanbul Arel Üniversitesi Sosyal Bilimler Enstitüsü.
TDK. (2019). *Büyük Türkçe Sözlük*. Türk Dil Kurumu.
Yavuzer, H. (1998). *Resimleriyle çocuk*. Remzi Kitapevi.

A Comprehensive Analysis of Health Services for Primary School-Aged Children in Türkiye: Current Status, Challenges, and International Perspectives

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ABSTRACT
This article comprehensively analyses the current status, legal and institutional framework, implementation practices, and challenges encountered in health services for primary school-aged children in Türkiye. Employing literature review and policy analysis methods, the study identifies that although Türkiye's school health system possesses a strong legal infrastructure, it experiences a significant policy-implementation gap, particularly due to the lack of institutionalised healthcare personnel (such as school nurses) in schools. A comparison with international best practice examples, such as Finland and Japan, reveals the structural deficiencies of the system in Türkiye. The article argues that the current system's structure, based on project-based and episodic interventions, is insufficient in meeting the continuous and holistic health needs of children. Consequently, evidence-based policy recommendations are presented, such as making the school nursing role legally mandatory, establishing sustainable funding models, ensuring digital data integration, and systematising family engagement.

Introduction

The Global Importance of School Health Services

Schools are not merely centres where academic knowledge is transmitted, but also strategically important institutions for the protection and promotion of community health. International organisations such as the World Health Organization (WHO) and the US Centers for Disease Control and Prevention (CDC) define schools as critical public health settings (World Health Organization, 2021; Centers for Disease Control and Prevention, 2024). There is a direct and reciprocal relationship between health, well-being, and academic achievement; good health is a fundamental prerequisite for effective learning, and schools offer a unique platform to reach children and adolescents, a large and critical population, in a scalable manner (World Health Organization, 2021; Center for Health and Learning, 2025; Leroy et al., 2016). These institutions provide an ideal ground for promoting healthy behaviours, preventing diseases, and ensuring equity in access to health services (Gökçay, 2025).

The Critical Role of Primary School Years in terms of Health Interventions

The primary school period (approximately the 6-10 age range) offers a critical window for health interventions in children's development. This period is a phase where the foundations of lifelong health habits such as nutrition, hygiene, and physical activity are laid (Gökçay, 2025; Memorial Health Group, 2009). At the same time, it is the most appropriate time for the early detection of developmental problems such as visual and hearing impairments and growth-development delays (Memorial Health Group, 2009). The effective implementation of preventive

measures such as immunisation plays a vital role in strengthening community immunity against infectious diseases in this age group (Memorial Health Group, 2009). The risks that the school environment carries in terms of the spread of infectious diseases and the occurrence of accidents reinforce the necessity of on-site and proactive health services during this period (Gökçay, 2025; Memorial Health Group, 2009; Ministry of National Education, 2017). Early interventions made during these years can prevent chronic diseases that may arise in later ages and reduce health inequalities (Office of Disease Prevention and Health Promotion, 2025).

In light of these global and developmental realities, the school health system in Türkiye faces a significant "dual burden". On one hand, it must fulfil traditional public health duties inherited from the General Public Hygiene Law of 1930, such as the control of infectious diseases, ensuring hygiene, and maintaining immunisation programmes (Özcan et al., 2013; General Directorate of Public Health, 2025; Ministry of Health, 2005; Ministry of Health, 2025). On the other hand, as noted by Baysal and İnce (2018), the social, economic, and lifestyle changes experienced by Türkiye have positioned the country as a "transitional society". This situation has also brought chronic and psychosocial health problems of modern society, such as malnutrition, obesity, high rates of dental caries, and increasingly rising mental health problems, to the school agenda (Baysal & İnce, 2018; Atak et al., 2023). While the current system's structure, largely based on out-of-school primary healthcare services, offers a suitable model for planned and episodic interventions like immunisations, it remains insufficient in coping with modern health problems that require daily observation, immediate intervention, and continuous follow-up. This dual burden places severe pressure on resources that are already limited, especially in terms of on-site healthcare personnel.

Aim, Scope, and Structure of the Article

The primary aim of this article is to analyse the current status of health services for primary school-aged children in Türkiye from a multidimensional perspective. In this context, the legal and institutional infrastructure of the system will be examined, the effectiveness of practices in the field will be evaluated, and the main challenges and deficiencies will be revealed along with the system's strengths. Furthermore, the current model in Türkiye will be compared with international best practice examples, and evidence-based policy recommendations for improving the system will be presented. Following the introduction, the article will address the legal and institutional framework of school health services in Türkiye, the implementation of in-school and out-of-school services, and the successes and challenges of the current system. Subsequently, international comparisons will be included, and the article will conclude with the results and policy recommendations section.

Legal and Institutional Framework of School Health Services in Türkiye

Historical Development

State commitment to school health services in Türkiye dates back to the early years of the Republic. The most fundamental legal regulation in this field is the General Public Hygiene Law no. 1593 dated 1930, which subjects schools to the supervision of the Ministry of Health (Özcan et al., 2013; General Directorate of Public Health, 2025). This law granted the Ministry of Health broad authority ranging from the hygienic conditions of school buildings to protection against epidemic diseases. In the historical process, significant turning points occurred, such as the acceptance of the concept of "school nursing" for boarding schools in 1949, health centres taking a role in school health services with the Law on Socialisation of Health Services in 1961, and the Ministry of National Education (MoNE) becoming more actively involved in the process from the 1980s onwards (Özcan et al., 2013). This historical background shows that school health has always been on the state's agenda, but responsibilities and implementation mechanisms have evolved over time.

Current Governance Structure

The main framework of today's school health services is formed by the "School Health Services Cooperation Protocol" signed between the Ministry of Health (MoH) and the Ministry of National Education (MoNE) on 17 May 2016 (Ministry of National Education, 2017; Ministry of National Education, 2021). This protocol aims to ensure coordination by determining the duties and responsibilities between the two ministries and to unite school health efforts under a comprehensive model (Ministry of National Education, 2017; Ministry of National Education & Ministry of Health, 2017). The scope of the protocol includes all relevant units, from the central

organisations of the ministries to provincial and district directorates, schools, and Family Health Centres (Ministry of National Education & Ministry of Health, 2017).

School Health Protection and Promotion Programme

The "School Health Protection and Promotion Programme", implemented on the basis of the 2016 protocol, is the main implementation framework aiming to gather all existing school health projects and activities under a single roof (Ministry of National Education, 2017; Ministry of National Education, 2021; Ministry of National Education & Ministry of Health, 2017). This programme aims to bring a holistic approach to school health and is built upon six basic components (Ministry of National Education, 2021):

1. Health Services: Periodic examinations, immunisations, screenings, and psychosocial support services for students.
2. Healthy and Safe School Environment: Making the school building and its surroundings physically and socially healthy and safe, ensuring hygiene conditions.
3. Healthy Nutrition: Inspection of school canteens, promotion of healthy eating habits.
4. Health Education: Gaining health awareness for students, staff, and families through curricular and extracurricular activities.
5. Physical Activity: Encouraging students to engage in regular physical activity and increasing opportunities.
6. Family/Community Involvement: Ensuring the active participation of families and the community in school health activities.

Distribution of Roles and Responsibilities

The organisational chart of the programme shares responsibility between the two ministries. At the provincial level, Public Health Directorates on behalf of the MoH and Provincial/District Directorates of National Education on behalf of the MoNE are jointly responsible for the execution of the programme (Özcan et al., 2013). Each school is obliged to establish a "School Health Management Team" within its own structure and prepare a school-specific "School Health Plan" (General Directorate of Public Health, 2025; Ministry of National Education & Ministry of Health, 2017; Ministry of Health & Ministry of National Education, 2013). Schools' compliance with the programme and the extent to which they implement their plans are audited by "School Evaluation Teams", also consisting of personnel from both ministries (Ministry of National Education, 2017).

Although this structure presents a highly detailed and comprehensive governance model on paper, it harbours a significant paradox in practice. The legal framework envisages cooperation between different actors with independent institutional hierarchies, such as school management, district directorate of national education, community health centre, and family physician. However, a single authoritative mechanism to manage, coordinate, and integrate this cooperation daily at the school, which is the final point where the service is delivered, has not been defined. The School Health Management Team is an administrative body rather than a clinical unit. As the WHO also states, in models where school health services are carried out solely by the education sector, interventions remain extremely limited; effective models require strong leadership from the health sector (World Health Organization, 2021). In the Türkiye model, the sharing of responsibility can lead to a dispersion of authority and weakening of accountability. Therefore, whilst the system is designed for cooperation, it lacks a "centre" to ensure integration at the point of service delivery. This situation carries the risk of transforming the comprehensive legislation itself into a source of complexity and potential failure, paving the way for implementation gaps that will be discussed in subsequent sections.

Implementation of School-Based and Out-of-School Health Services

School health services in Türkiye are shaped around two main axes: practices carried out within the school under the responsibility of the MoNE, and primary healthcare services offered predominantly outside the school by the MoH.

In-School Practices

Schools carry out various health promotion and environmental regulation activities under the responsibility of the MoNE.

- School Health Plans and Environmental Regulations: Each school is obliged to prepare an annual "School Health Plan". In line with these plans, project-based initiatives such as the "White Flag Project", which promotes cleanliness and hygiene standards in schools, and the "Nutrition Friendly School Project", which aims to create healthy food environments, are implemented. Within the scope of these projects, school canteens and dining halls are regularly inspected (General Directorate of Public Health, 2025; Ministry of National Education, 2017; Ministry of Health & Ministry of National Education, 2013).

- Health Education and Promotion Activities: Schools use materials such as posters and brochures to promote healthy lifestyle behaviours, organise activities through student clubs, and include health topics in their curricula (Ministry of National Education, 2017; Ministry of National Education & Ministry of Health, 2017).

- Physical Activity Assessment: The "Health-Related Physical Fitness Report Card", applied by physical education teachers, is a standard practice that measures students' basic physical fitness levels such as sit-ups, push-ups, and flexibility, and records the results in the e-School system (Ministry of National Education, 2017; Karakoç, 2018).

The Central Role of Primary Healthcare Services (Out-of-School Services)

The cornerstone of clinical health services is the family medicine system affiliated with the MoH.

- Periodic Follow-ups: The most fundamental clinical component of the programme is the periodic examination of every student by the family physician with whom they are registered (Özcan et al., 2013; General Directorate of Public Health, 2025; Ministry of National Education, 2021). These follow-ups are conducted in accordance with the "Infant, Child, Adolescent Follow-up Protocols" published by the MoH (Özcan et al., 2013; General Directorate of Public Health, 2015; General Directorate of Public Health, 2025). For primary school age (6-9 years), these follow-ups are envisaged to be carried out once a year (General Directorate of Public Health, 2015). Following the examination, the family physician fills out the "Student Examination/Follow-up Notification Form" (Form 1) and gives it to the family, and the family is expected to deliver this form to the school. School management is responsible for collecting and keeping these forms (Özcan et al., 2013; General Directorate of Public Health, 2025; Ministry of Health, 2016).

Specific Preventive Services

- Immunisation: Türkiye's national immunisation schedule is highly robust, and school-age immunisation is an important part of this programme. Students starting the first grade of primary school are administered two important booster doses, usually by health teams visiting schools: MMR (Measles, Mumps, Rubella) and DTaP-IPV (Diphtheria, Tetanus, acellular Pertussis, Inactivated Polio) vaccines (Ministry of Health, 2025; Public Health Institution of Türkiye, 2018). This practice aims to strengthen the immunity provided during infancy.

- Screenings: The MoH conducts national screening programmes for school-age children. Within the scope of these programmes, screenings are carried out in schools by teams affiliated with Community Health Centres, especially for the early detection of hearing and vision problems (General Directorate of Public Health, 2025).

When current practices are examined, it is seen that the system is built on episodic (periodic) interventions but lacks a continuous health management mechanism. Immunisations occur once a year, and family physician checks are also annual events that take place under the family's responsibility. In-school activities are also generally periodic. However, there is no institutionalised mechanism to intervene in cases such as a minor accident a child experiences during the day, a sudden illness, the daily medication need for a chronic disease like asthma or diabetes, or an immediate emotional crisis. In such cases, the responsibility falls on teachers who are not healthcare professionals, or the family must be called to take the child to a health institution. This situation creates a reactive model where problems are intervened in only after exceeding a certain threshold, rather than a proactive model where they are solved immediately and on-site. This constitutes a fundamental difference in philosophy and practice from models such as Finland, where a full-time nurse is present in every school (Salman, 2023).

Evaluation of the Current System: Successes and Challenges

Although Türkiye's school health system has a strong policy foundation, it faces serious challenges and structural deficiencies in practice.

Strengths

- Comprehensive Legal and Political Framework: The inter-ministerial cooperation protocol and detailed implementation guidelines create a solid legal and political foundation for school health services (Özcan et al., 2013; Ministry of National Education, 2021; Ministry of National Education & Ministry of Health, 2017).

- Integration with Primary Health System: The use of the universal family medicine system ensures, in principle, that every child is connected to a physician responsible for their periodic health follow-up (Özcan et al., 2013; Ministry of National Education, 2021).

- High Immunisation Rates: The school-based immunisation programme demonstrates a significant public health success by reaching high coverage rates in critical booster doses (Ministry of Health, 2025).

Critical Challenges and Deficiencies

- Shortage of School Nurses: The most fundamental and critical weakness of the system is the absence of legally mandatory and funded school nurse positions in public schools (Özcan et al., 2013; Atak et al., 2023; Salman, 2023). Although the job description of the school nurse is defined in nursing regulations and a directive regarding their duties has been published (Özcan et al., 2013; Ministry of National Education, 2022), this role remains largely limited to private schools. This gap causes vital functions such as immediate first aid in schools, chronic disease management, health education coordination, and early diagnosis to not be fulfilled (Gökçay, 2025).

- Inconsistencies in Implementation: Studies show significant deficiencies in the implementation of school health programmes other than immunisation, despite the legal framework (Atak et al., 2023). The fact that the approach is project-based rather than institutionalised and systematic leads to serious differences in service quality between schools and regions (Salman, 2023).

- Prevalent Health Problems:
  - Oral and Dental Health: The prevalence of dental caries among students in Türkiye is quite high, and regular tooth brushing habits are insufficient. This is a significant public health problem that cannot be adequately addressed in the school environment (Baysal & İnce, 2018; Atak et al., 2023).
  - Mental Health: The fact that mental health problems, reported as under 1% in official screenings, are detected between 12% and 22% in focused projects indicates how insufficient the system is in detecting these problems (Baysal & İnce, 2018; Atak et al., 2023). Crowded classrooms and teachers' inadequate training on this subject pave the way for the problem to grow.

- Barriers to Family Involvement: Although it is the sixth component of the national programme, family involvement is not at the desired level. It is stated that parents cannot be involved in the process due to reasons such as intense working hours, distrust towards the school and teachers, or lack of knowledge; and teachers cannot establish effective communication with families due to time constraints and viewing it as an extra burden.

- Data Collection and Monitoring Issues: There is no digital platform where data collected in different systems such as e-School (physical fitness) and Family Medicine Information System (periodic follow-up) are analysed in an integrated manner, allowing for monitoring of health status and planning of interventions at the school or district level (Salman, 2023). The physical delivery of Form-1 containing family physician examination results to the school by families is an outdated method that leads to inefficiency and losses in data flow (Özcan et al., 2013; General Directorate of Public Health, 2025).

When these challenges are combined, it is understood that the issue of school health has a systemically secondary priority. The clearest indicator of a system's priorities is the budget and personnel it allocates. The model in Türkiye avoids the structural and financial investment necessary to assign permanent health personnel to every school. Historically, it is stated that the Ministry of Health's priorities have focused on maternal and newborn

health, and school health has only recently begun to receive more attention (Baysal & İnce, 2018). Project-based approaches such as "White Flag" allow for visible activities to be carried out without requiring permanent investment. This situation is the result of a political and economic compromise that avoids the cost that would make it fully functional, whilst giving the appearance of a comprehensive system on paper. This lack of prioritisation results in concrete consequences such as the continuation of preventable health problems, failure to meet mental health needs, and failure to realise the potential of schools to be strong public health centres as envisaged by the WHO (World Health Organization, 2021).

International Comparisons and Best Practice Examples

General Position of Türkiye's Health System

When evaluating Türkiye's school health system, it is important to consider the country's general health resources and system structure. OECD data show that Türkiye has made remarkable progress in access to education and student achievement in the last twenty years (OECD, 2023; Kitchen et al., 2019). However, the situation is different in terms of health resource indicators. Multidimensional scaling analyses position Türkiye's health system in the same cluster as Eastern European countries such as Romania, Bulgaria, and Poland, rather than Western European countries such as Luxembourg, Sweden, and Germany (Girginer, 2013). In a comparison made in terms of resources such as physicians, nurses, hospital beds, and medical devices per capita, Türkiye ranked last among the 29 OECD countries examined (Kıran & Akbolat, 2021). This resource constraint constitutes one of the main challenges to financing a comprehensive school health system, such as assigning a healthcare professional to every school.

The Finland Model: Holistic and Institutionalised Approach

Finland offers an institutionalised and integrated model in school health services. The system is secured by national laws, and there is a full-time public health nurse and a regularly serving school doctor in every school (Salman, 2023). All services are completely free for students and are a compulsory part of the education system. The model exhibits a holistic approach with multidisciplinary school welfare teams focusing not only on physical health but also on mental health, social services, and special education needs (Salman, 2023). This structure differs radically from Türkiye's model based on project-based and out-of-school services.

The Japan Model: Systematic Screening and Follow-up

Japan offers a highly systematic model, albeit with a different structure. Annual health check-ups are legally mandatory for all students from preschool to university (Medipol University, 2024). These comprehensive checks, carried out by school doctors, include height, weight, vision, hearing, oral and dental health, and tuberculosis screenings. In case of any detected health problem, the results are reported to the parents, and a clear referral process for further examination and treatment is operated (Medipol University, 2024). This model shows how effective a systematic screening and referral mechanism based on legal obligation can be.

The Nordic Model: Equity and Well-being Focused Philosophy

In a broader framework, Nordic countries view school health services as an integral part of the universal welfare state concept (Nordic Welfare Centre, 2019). These services are compulsory and free for all students. The basic philosophy accepts the strong link between health and educational performance, aiming to offer equal development opportunities to all children regardless of their social or economic background. In these countries, great importance is attached to health promotion programmes aimed at increasing positive mental health and general well-being in particular (Nordic Welfare Centre, 2019).

Conclusion and Policy Recommendations

Synthesis of Key Findings

This analysis reveals that Türkiye has a well-intentioned and comprehensive policy vision in the field of school health, but this vision is undermined by a critical implementation gap. The system's excessive dependence on out-of-school primary healthcare services for episodic interventions and the absence of healthcare professionals to provide continuous service in schools create a serious void in areas of coordination, immediate intervention, and

continuous care. This structural deficiency causes unmet needs and the persistence of health inequalities, especially in areas such as oral and dental health and mental health. The current model remains insufficient in closing the gap between policy and practice.

Evidence-Based Recommendations for Strengthening the System

To transform the current system and more effectively meet the health needs of primary school-aged children, the following policy recommendations are presented:

1. Institutionalisation of the School Nursing Role: The most fundamental and transformative reform is to remove school nursing from being a practice limited to private schools and make it a legally mandatory and state-funded position in every public school. The school nurse will serve as the coordinator and practitioner at the centre of all health activities (screening, immunisation, periodic follow-up tracking, health education, first aid) (Gökçay, 2025; Atak et al., 2023).

2. Transition from Project-Based Approach to Sustainable Funding: Instead of project-based and temporary initiatives such as "White Flag", a permanent and sustainable funding model from the national budget should be established for school health services. This will ensure that services are offered in an equal, continuous, and standard quality in all schools, as in the Finland and Nordic models (Nordic Welfare Centre, 2021; Salman, 2023).

3. Strengthening Digital Data Integration: The inefficient system based on families physically carrying forms should be abandoned; a secure, privacy-protected, and integrated digital data flow platform should be established between the Family Medicine Information System (AHBS) and the MoNE's e-School system. This system will allow for real-time monitoring of students' health status, determination of risk groups, and evidence-based public health planning (General Directorate of Public Health, 2025).

4. Systematisation of Family Involvement: To move family involvement beyond being coincidental, national-level guides should be prepared, and in-service training should be provided on structured and proactive family engagement strategies for teachers and school administrators. This should aim to establish a genuine school-family partnership by overcoming the communication and participation barriers identified in research (Gökçay, 2025).

5. Prioritisation of Oral and Mental Health Programmes: Considering high prevalence rates, school-based, standardised oral and dental health programmes (e.g., supervised tooth brushing, fluoride varnish applications) should be implemented. At the same time, teachers' mental health literacy should be increased, and referral chains between schools, guidance services, Guidance and Research Centres (RAM), and child psychiatry clinics should be strengthened (Baysal & İnce, 2018; Gökçay, 2025; Atak et al., 2023).

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References

Atak, M., Önal, A. E., Şimşek, Z., & İşsever, H. (2023). Health Risks Management Program in Schools: An Operational Study in Türkiye. *International journal of environmental research and public health*, *20*(4), 3718. https://doi.org/10.3390/ijerph20043718

Baysal, S. U., & İnce, T. (2018). Recent developments in school-based health services in Turkey. *The Journal of Pediatric Research*, 5(2), 60-64. https://doi.org/10.4274/jpr.98852

Center for Health and Learning. (2025). *School health*. https://healthandlearning.org/ourwork/school-health/

Centers for Disease Control and Prevention. (2024). *Quality health education*. https://www.cdc.gov/healthy-youth/what-works-in-schools/quality-health-education.html

General Directorate of Public Health. (2015). *Yüksek riskli bebeklerde izlem programı*. T.C. Sağlık Bakanlığı. https://platform.who.int/docs/default-source/mca-documents/policy-documents/guideline/TUR-MN-62-01-GUIDELINE-2015-tur-High-risk-Baby-Follow-up-Guideline.pdf

General Directorate of Public Health. (2025). *Okul sağlığı*. T.C. Sağlık Bakanlığı. https://hsgm.saglik.gov.tr/tr/okul-sagligi

Girginer, N. (2013). A comparison of the healthcare indicators of Turkey and the European Union members countries using multidimensional scaling analysis and cluster analysis. *İktisat İşletme ve Finans*, *28*(323), 55-72. https://doi.org/10.3848/iif.2013.323.3387

Gökçay, G. (2025). *Okul temelli sağlık hizmetleri-okul sağlığı*. Türk Pediatri Kurumu. https://www.sosyalpediatri.org.tr/okul-temelli-saglik-hizmetleri-okul-sagligi-00736.html

Karakoç, Y. (2018). Physical education in EU schools and Turkey: A comparative study. *Comparative Professional Pedagogy*, *8*(2), 101-106. https://doi.org/10.2478/rpp-2018-0026

Kıran, Ş., & Akbolat, M. (2021). Availability of health resources: A comparison of Turkey and selected OECD countries. *Hacettepe Journal of Health Administration*, *24*(3), 603-618.

Kitchen, H., Bethell, G., Fordham, E., Henderson, K., & Li, R. R. (2019). *Student assessment in Turkey*. OECD. https://abdigm.meb.gov.tr/meb_iys_dosyalar/2020_03/02141438_OECD_STUDENT_ASSESSMENT_IN_TURKEY.pdf

Leroy, Z. C., Wallin, R., & Lee, S. (2017). The Role of School Health Services in Addressing the Needs of Students With Chronic Health Conditions. *The Journal of school nursing : the official publication of the National Association of School Nurses*, *33*(1), 64–72. https://doi.org/10.1177/1059840516678909

Medipol University. (2024). *Japonya Sağlık Sistemi*. https://www.medipol.edu.tr/sites/default/files/document/JAPONYA.pdf

Memorial Health Group. (2009). *Okul Çağı Sağlık Taramalarının Önemi*. https://www.memorial.com.tr/saglik-rehberi/okul-oncesi-cocuklara-check

Ministry of Health & Ministry of National Education. (2013). *Okul sağlığı*.

https://ihsansunguioo.meb.k12.tr/meb_iys_dosyalar/06/01/353514/dosyalar/2019_12/12170418_OKUL_SAYLIYI_sunumu_siteye_konulacak.pdf

Ministry of Health. (2005). *Okul sağlığı hizmetleri hakkında Sağlık Bakanlığı genelgesi (2005/15).* https://www.saglikplatformu.com/okul-sagligi-hizmetleri-hakkinda-saglik-bakanligi-genelgesi/

Ministry of Health. (2016). *AHBS sistemleri için okul sağlığı programı.* https://e-saglik.gov.tr/TR,6121/ahbs-sistemleri-icin-okul-sagligi-programi.html

Ministry of Health. (2025). *Aşı takvimi.* https://asi.saglik.gov.tr/bagisiklama-programi-ve-asi-takvimi/asi-takvimi.html

Ministry of National Education & Ministry of Health. (2017). *Okulda sağlığın korunması ve geliştirilmesi programı uygulama kılavuzu.* https://okulsagligi.meb.gov.tr/meb_iys_dosyalar/2017_03/24172657_OKUL_SAYLIYININ_KORUNMASI_VE_G ELYYTYRLMESY_PROGRAMI_UYGULAMA_KILAVUZU_3256836380940747639.pdf

Ministry of National Education. (2017). *Okul sağlığı hizmetleri.* https://okulsagligi.meb.gov.tr/www/okul-sagligi-hizmetleri/icerik/29

Ministry of National Education. (2021). *Millî Eğitim Bakanlığı Okul Sağlığı Hizmetleri İş Birliği Protokolü ve Okulda Sağlığın Korunması ve Geliştirilmesi Programı.* https://devrek.meb.gov.tr/meb_iys_dosyalar/2021_09/23160635_12085932_OKUL_SAYLIYI_YY_BYRLYYY_PR OTOKOLY.pdf

Ministry of National Education. (2022). *Okul sağlığı hemşireliği yönergesi.* https://merkezisgb.meb.gov.tr/meb_iys_dosyalar/2022_04/01114323_Okul_SaYlYYY_HemYireliYi_Yonergesi.pdf

Nordic Welfare Centre. (2019). *Adolescent health in the Nordic region – Health promotion in school settings.* https://nordicwelfare.org/en/publikationer/healthpromotion_schools/

OECD. (2023). *Student achievement in Türkiye.* https://www.oecd.org/en/publications/student-achievement-in-turkiye_c8a84283-en.html

Office of Disease Prevention and Health Promotion. (2025). *Early childhood development and education.* U.S. Department of Health and Human Services. https://odphp.health.gov/healthypeople/priority-areas/social-determinants-health/literature-summaries/early-childhood-development-and-education

Özcan, C., Kılınç, S., & Gülmez, H. (2013). Türkiye'de Okul Sağlığı ve Yasal Durum. *Ankara Medical Journal.* 13(2), 71-81. https://dergipark.org.tr/tr/download/article-file/19706

Public Health Institution of Türkiye. (2018). *Okul çağı çocuklarında aşı uygulaması.* https://ortahisar.meb.gov.tr/meb_iys_dosyalar/2018_09/17121003_AYI_SUNUMU.pdf

Salman, F. (2023). Farklı ülkelerde okul sağlığı uygulamaları: Türkiye ile karşılaştırmalı bir derleme. *Nuh'un Gemisi Sağlık Bilimleri Dergisi, 2*(2), 48-53. https://dergipark.org.tr/tr/download/article-file/4908331

World Health Organization. (2021). *WHO guideline on school health services.* https://www.who.int/publications/i/item/9789240029392

REVİEW ARTICLE

Primary Education in Türkiye and Uzbekistan: A Comparative Analysis of its Relationship with Pre-school and Secondary School Levels

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ABSTRACT
This article provides a comparative analysis of the primary education systems in Türkiye and Uzbekistan, focusing on their vertical integration with pre-school and lower secondary levels. Adopting a comparative case study method based on comprehensive document review, the study scrutinises the structural characteristics and reform dynamics of both nations. The findings reveal two divergent trajectories. Türkiye possesses a mature, centralised 4+4+4 system shaped by internal political dynamics. A key challenge within this model is the abrupt transition from the single-teacher primary level to the multi-teacher lower secondary level, which creates significant psycho-social difficulties for pupils. Conversely, Uzbekistan is pursuing a comprehensive "system-building" reform, substantially supported by international partners and oriented towards global standards. Its planned 1+4+5+2 model positions pre-school education as a foundational cornerstone and aims to ease the transition into primary school via a compulsory preparatory year. The analysis concludes that Türkiye employs an internal "problem-solving" approach, whereas Uzbekistan adopts a "system-building" approach based on global best practices.

Introduction

Context and Significance of the Research

In a globalising world, education systems play a pivotal role in the economic development, social progress, and preservation of cultural identities of nations. In this context, comparative education studies are of critical importance for analysing the educational policies, structures, and practices of different countries, thereby deriving lessons from successful models and presenting evidence-based recommendations for the improvement of existing systems (Özsoy et al., 2021). This study scrutinises the primary education systems of Türkiye and Uzbekistan, two nations sharing common historical, cultural, and linguistic ties, yet which have followed distinct political and social development trajectories since the late twentieth century. Given that education constitutes a fundamental element of the national development strategies of both countries (Özsoy et al., 2021; Mamajonov & Askarov, 2022), a comparison of these two systems holds the potential to offer valuable insights that will enable each to perceive its own strengths and weaknesses more clearly and to shape future educational policies.

This comparison goes beyond merely juxtaposing the education systems of two countries; it serves as an examination of two distinct national development models in the twenty-first century. Türkiye represents an education system tradition shaped by a deep-rooted republican history, the modernisation of centralised institutions, and internal socio-political debates (Gedikoğlu, 2005; Başdemir, 2012). Conversely, Uzbekistan symbolises a new state in a dynamic process of reform, strategically utilising international partnerships to rapidly build human capital and integrate into the global economy following its independence. Consequently, the

education systems are a reflection of the national strategies of these two countries: whilst Türkiye's system reflects internal political dynamics, Uzbekistan's system mirrors its outward-looking, global objectives. This framework elevates the analysis from a simple comparison of schools to a broader study of geopolitics and development through the lens of education.

Purpose of the Article and Research Questions

The primary objective of this article is to analyse and compare the primary education systems in Türkiye and Uzbekistan in depth, centering on their vertical integration with the preceding level, pre-school education, and the subsequent level, lower secondary school (middle school). Accordingly, the article seeks answers to the following fundamental research questions:

- What are the structural characteristics, legal frameworks, and primary objectives of primary education in Türkiye and Uzbekistan?
- How does pre-school education shape the transition to primary school and pupil readiness in both countries?
- How are the transition processes from primary to lower secondary school structured, and what academic and social experiences do pupils undergo during these transitions?
- What are the fundamental similarities and differences between the two education systems in terms of vertical integration, reform dynamics, and compliance with international standards?

Method and Scope

This study adopts a comparative case study method, a qualitative research design. The analysis is based on a comprehensive document review comprising official documents published by the Ministries of National Education of both countries, legal texts such as Laws No. 1739 and 222, reports from international organisations such as UNICEF and the World Bank, and academic articles relevant to the subject (National Education Basic Law No. 1739, 1973; UNICEF, 2022). The scope of the study is kept broad to include not only the structural features of the systems but also the functionality of transitions between levels and pupil experiences within these transitions.

Structure of the Article

The article will principally address the education systems in Türkiye and Uzbekistan separately within their own internal dynamics. Firstly, Türkiye's established structure and the vertical integration between pre-school, primary, and lower secondary school will be examined. Subsequently, Uzbekistan's current system and its ongoing comprehensive reform process will be analysed from the same perspective of vertical integration. in the following section, the structural characteristics, reform dynamics, and approaches to transitions between levels of both systems will be evaluated through a direct comparative analysis. In the conclusion, key findings will be synthesised to present policy recommendations for both countries and to offer directions for future research.

Structure and Vertical Integration of the Education System in Türkiye

General Framework: 12-Year Compulsory Education and the 4+4+4 Model

The education system in Türkiye possesses a centralised structure conducted under the supervision and control of the state (Demirkol et al., 2023; Gedikoğlu, 2005). The legal basis of the system is constituted by the National Education Basic Law No. 1739 and the Primary Education and Education Law No. 222 (National Education Basic Law No. 1739, 1973; Primary Education and Education Law No. 222, 1961). In accordance with these laws, primary education is compulsory for all Turkish citizens and is provided free of charge in state schools (Primary Education and Education Law No. 222, 1961).

One of the most significant structural transformations in the Turkish education system was realised in 2012 with Law No. 6287 (Primary Education and Education Law No. 6287, 2012). With this regulation, the uninterrupted compulsory education, which was previously 8 years, was extended to 12 years, and the system acquired a tiered structure known as "4+4+4". This model consists of three levels: four years of primary school, four years of lower secondary school (middle school), and four years of upper secondary school (high school) (TÜSEB, 2019). This alteration has been a subject frequently debated and its effects analysed in academic studies

on the Turkish education system (Hark Söylemez & Adıyaman, 2023). With the new regulation, the school starting age was also redefined. For registration in the first year of primary school, it is essential that the child has completed 69 months as of the end of September of the year in which the registration takes place. However, in line with the written request of the guardian or a medical report, children aged 66, 67, and 68 months may also be registered (Primary Education and Education Law No. 6287, 2012; TÜSEB, 2019).

Relationship with the Lower Level: The Role of Pre-school Education in Preparation for Primary School

Although pre-school education in Türkiye is not within the scope of compulsory education, it plays a critical role in the child's development and preparation for primary school. According to the Pre-school Education Programme prepared by the Ministry of National Education (MoNE), the fundamental objectives of this level are to support children's physical, mental, and emotional development, to instill good habits, to ensure they speak Turkish correctly and beautifully, and, most importantly, to prepare them for primary school (National Education Basic Law No. 1739, 1973; MEB, 2024). This education is structured with a child-centred, flexible, holistic, and play-based pedagogical approach (MEB, 2024).

Research indicates that pre-school education significantly and positively affects children's levels of school readiness and their adaptation process to primary school. Studies based on the views of classroom teachers reveal that pupils who have received pre-school education have more developed fine motor skills, such as holding a pencil and drawing lines (Yurdakal, 2023). Simultaneously, these pupils are at a more advanced level in early literacy skills such as recognising and distinguishing sounds, as well as in social and behavioural skills such as collaborating with peers, participating in group work, and obeying classroom rules (Yurdakal, 2023; Erkan & Kırca, 2010). This readiness ensures that they commence academic studies with greater motivation and adapt more rapidly to the school culture (Yurdakal, 2023).

Conversely, the transition process from pre-school to primary school may entail certain difficulties, particularly for children who have not received this education or come from socio-economically disadvantaged families. Amongst these difficulties, separation anxiety from the family, difficulties in adapting to the new social environment, and attention and concentration problems are prominent (Deretarla Gül, 2019). The healthy management of this transition process necessitates strong cooperation between teachers, families, and the school administration.

Primary School Level: Structure, Curriculum, and Assessment

Primary school is the first level of the 4+4+4 model, lasting for four years and covering Years 1, 2, 3, and 4 (TÜSEB, 2019). As stated in Law No. 222, the main objective of this level is to provide "basic education and instruction serving the physical, mental, and moral development and upbringing of all Turks, male and female, in accordance with national goals" (Primary Education and Education Law No. 222, 1961). The curriculum focuses on equipping pupils with basic knowledge and skills. Whilst the Life Sciences course plays a central role in the first three years, core subjects such as Turkish, Mathematics, Sciences, and Social Studies gain weight in subsequent years. The assessment system is focused on monitoring the pupil's development process rather than grading. The practice of repeating a year is not common in primary school and can only be applied once, upon the written request of the parent, depending on the pupil's developmental status.

Relationship with the Upper Level: Transition from Primary to Lower Secondary School

In the Turkish system, the transition from primary to lower secondary school is not subject to a central examination. Pupils who successfully complete the fourth year of primary school are automatically registered in the lower secondary school closest to their address via the e-School system (Primary Education and Education Law No. 6287, 2012). Although this transition appears structurally seamless, it represents a significant psycho-social period of change for pupils. This situation indicates that the structure of the system, separated by sharp blocks such as 4+4+4, creates predictable points of friction and stress for pupils that are not always compatible with natural developmental processes.

Pupils make a sudden transition from the status of being the "eldest in the school" in primary school to being the "youngest in the school" in lower secondary school. More importantly, they are compelled to adapt from a

structure consisting of a single classroom teacher, to which they have been accustomed for four years, to a multi-teacher system where a different subject teacher attends each lesson. This abrupt change in pedagogical structure may lead to various difficulties in pupils as it coincides with the onset of adolescence. During this period, behavioural changes such as a decrease in interest in lessons, the prioritisation of peer relationships, and an increase in conflicts with the family are frequently observed. Significant responsibilities fall upon school guidance services and families to ensure that this transition does not turn into a moment of "crisis". The preparation of information brochures for parents by schools affiliated with the MoNE to manage this transition process is an indication that the system itself acknowledges the difficulties at these structural transition points.

Structure of the Education System in Uzbekistan and Current Reforms

General Framework: From Soviet Legacy to International Standards

The legal framework of the Uzbekistan education system is delineated by the Constitution and the "Law on Education" dated 1997. According to these laws, education is defined as the highest priority in the state's social development, and equal rights are guaranteed to everyone regardless of gender, language, race, or social origin (Constitution of the Republic of Uzbekistan, 1992; Law of the Republic of Uzbekistan "On Education", 1997). In Uzbekistan, which has implemented significant reforms on the structure inherited from the Soviet Union, an 11-year compulsory education system has been in effect since 2017. This system consists of four years of primary school starting at the age of seven and seven years of secondary school (UNICEF, 2022).

However, the most defining characteristic of the Uzbekistan education system is a comprehensive and dynamic reform vision aiming to elevate the country to international standards beyond the existing structure (Mamajonov & Askarov, 2022; UNICEF, 2022). At the centre of this vision lies a plan to transition to a new 12-year education system compatible with the models of countries successful in international assessments such as PISA (Programme for International Student Assessment) (Gazeta.uz, 2025; Fergana News, 2025). The primary aim of this reform is to ensure that graduates can transition directly to universities abroad and to make the quality of the country's human capital competitive at a global level (Fergana News, 2025).

Relationship with the Lower Level: Internationally Supported Transformation in Pre-school Education

One of the most remarkable achievements in Uzbekistan's education reform process has occurred in the field of pre-school education. The schooling rate of children aged 3-7, which was at a low level of 27% in 2017, rose to 75% by 2024 with substantial financial and technical support provided by international organisations such as the World Bank, UNICEF, and the Global Partnership for Education (GPE) (World Bank, 2025; GPE, n.d.; UNICEF, 2022). This situation is the most concrete example of Uzbekistan's policy of making a "strategic leap" by adopting internationally proven models rather than gradual development.

These reforms have focused not only on increasing the schooling rate but also on ensuring the quality and equity of education. A transition has been made from the traditional, care-oriented kindergarten model to play-based, child-centred pedagogies that develop children's cognitive and socio-emotional skills (World Bank, 2025). In this context, thousands of teachers have been trained in line with the new curriculum, and innovative and low-cost models such as mobile bus kindergartens named "Aqlvoy" have been implemented to reach children particularly in rural and disadvantaged regions (World Bank, 2025; GPE, n.d.). All of these efforts aim to ensure that children start primary school better equipped and ready (World Bank, 2025; UNICEF, 2022). Nevertheless, such rapid growth of the system brings with it challenges such as standardising service quality across the country and the full integration of children from the poorest families into the system (UNICEF, 2022).

Primary School Level: Structure, Curriculum, and Assessment

In the current system, primary school lasts for four years (Years 1-4) and is generally based on the principle of one classroom teacher delivering all subjects throughout primary school (TIMSS & PIRLS International Study Center, 2021). When examining the curricula of teacher training programmes, it is observed that basic subjects such as Mother Tongue (Reading-Writing Methodology), Mathematics Methodology, Natural Sciences, Technology Education, and Physical Education are included in primary school. In addition to state schools, programmes such as the International Baccalaureate Primary Years Programme (PYP) or the British National Curriculum are also

implemented in some international schools in Tashkent, and inquiry-based, interdisciplinary, and individualised teaching methods are adopted in these schools.

A fundamental component of Uzbekistan's reform process is the determination to evaluate education quality according to objective criteria and to make comparisons at the international level. Accordingly, the country has begun to actively participate in international student assessment programmes such as PIRLS (Progress in International Reading Literacy Study), PISA, and TIMSS (Trends in International Mathematics and Science Study) (TIMSS & PIRLS International Study Center, 2021). This participation functions not merely as an outcome evaluation tool, but also as a policy instrument that guides and legitimises the entire reform process. At the national level, pupil progress is monitored through regularly conducted current checks, interim examinations held at the end of quarters, and phased checks conducted at the end of the year (TIMSS & PIRLS International Study Center, 2021).

Relationship with the Upper Level: Restructuring in the Planned 12-Year System

The new 12-year education system that Uzbekistan plans to implement is structured as a "1+4+5+2" model (Gazeta.uz, 2025; Fergana News, 2025). This model consists of the following levels:

- 1 year compulsory preparatory (age 6)
- 4 years primary school (Years 1-4)
- 5 years basic general secondary education (Years 5-9)
- 2 years general secondary education (in schools, lyceums, or vocational colleges)

In this new structure, the transition from primary to lower secondary school will continue as a transition to Year 5 (basic general secondary education level) at the end of Year 4. However, the most significant structural change is the formal inclusion of a one-year preparatory education for 6-year-old children into the school system as compulsory (Gazeta.uz, 2025; Fergana News, 2025). This strategic move aims to consolidate the gains of major breakthroughs in pre-school education, to make the transition between pre-school and primary school smoother and more holistic, and to provide an equal foundation for all children when starting primary school. This clearly demonstrates Uzbekistan's intention to make transitions between levels more fluid through structural reforms.

Comparative Analysis and Evaluation

The primary education systems of Türkiye and Uzbekistan have developed unique structures nourished by different historical trajectories and reform dynamics. The table below summarises the key structural features of the two systems comparatively.

Table 1: Structural Comparison of Education Systems in Türkiye and Uzbekistan

Feature	Türkiye	Uzbekistan (Current and Planned)
Duration of Compulsory Education	12 Years (4+4+4) (Primary Education and Education Law No. 6287, 2012; TÜSEB, 2019)	Current: 11 Years (UNICEF, 2022). Planned: 12 Years (1+4+5+2) (Gazeta.uz, 2025; Fergana News, 2025)
School Starting Age	69 months (66 months with exceptions) (TÜSEB, 2019)	Current: 7 years (UNICEF, 2022). Planned: 6 years (with preparatory class) (Fergana News, 2025)
Pre-school Education	Optional, widespread, focused on preparation for primary school (MEB, 2024)	Optional, rapidly spreading with recent reforms, focused on quality and equity (World Bank, 2025; GPE, n.d.)
Primary School Structure	4 Years (Years 1-4) (TÜSEB, 2019)	4 Years (Years 1-4) (TIMSS & PIRLS International Study Center, 2021)
Lower Secondary Structure	4 Years (Years 5-8) (TÜSEB, 2019)	Planned: 5 Years "Basic General Secondary Education" (Years 5-9) (Gazeta.uz, 2025)

Governance Structure	Centralised (MoNE) (Demirkol et al., 2023)	Centralised (Ministry of Pre-school and School Education) (UNICEF, 2022)
Reform Dynamics	Based on internal political dynamics and debates (e.g., 4+4+4) (Hark Söylemez & Adıyaman, 2023; Şenkaloğlu, 2021)	Based on compliance with international standards and foreign partnerships (Mamajonov & Askarov, 2022; Gazeta.uz, 2025)

This comparison reveals a fundamental dichotomy defining the approaches of the two countries in the field of education: a "problem-solving" oriented approach versus a "system-building" oriented approach. Türkiye's educational discourse is shaped around identifying existing problems within a matured system (such as transition stress, curriculum debates, teacher quality) and proposing solutions to them (Şenkaloğlu, 2021; Başdemir, 2012). This is a process of continuous maintenance and modification of an existing mechanism. In contrast, Uzbekistan's discourse focuses on constructing a new system based on a plan derived from global best practices. "Problems" (such as low schooling rates, lack of international compliance) are defined not as chronic flaws to be managed, but as starting points to be overcome through a comprehensive reform project (GPE, n.d.). This fundamental difference elucidates the nature of academic and political debates in both countries.

Structural Differences in Education Systems

The most distinct structural difference emerges in the tiering models. Whilst Türkiye's established 4+4+4 model draws clear and sharp boundaries between primary, lower secondary, and upper secondary school, Uzbekistan's planned 1+4+5+2 model aims to ensure a more organic and smoother transition between pre-school and primary school by integrating a one-year compulsory preparatory class into the system. This philosophical difference reflects Uzbekistan's strategy of directly linking the gains of early childhood education to the foundation of primary school.

The Role of Pre-school Education and Approaches

Although both countries acknowledge the importance of pre-school education, the roles they attribute to this level differ. In Türkiye, pre-school education is largely viewed as a support mechanism "preparing" pupils for the existing primary school system, and its success is evaluated more through individual pupil adaptation and readiness (Yurdakal, 2023; Erkan & Kırca, 2010). In Uzbekistan, however, pre-school education is positioned as the "cornerstone" of rebuilding the entire education system. This level is seen as a systemic tool for equity and quality, and thus international investments and reform efforts are concentrated in this area (World Bank, 2025). This reflects the understanding that pre-school education is not merely a preparatory stage, but the most critical foundation of the entire learning journey.

Dynamics of Transition Between Levels

As a consequence of structural differences, the dynamics of transition between levels also diverge. In Türkiye, the transition from primary to lower secondary school looms as a potential moment of psycho-social "crisis" for pupils due to sudden changes in pedagogical (from single teacher to multiple teachers) and social (from eldest to youngest) structures. The responsibility for managing this transition within the system is largely placed on guidance services and families. Uzbekistan's new model, on the other hand, aims to minimise the negative effects of such sharp transitions by aiming to structurally soften the pre-school to primary school transition through the integration of a one-year preparatory class (Gazeta.uz, 2025; Fergana News, 2025).

Teacher Training and Professional Development

In both countries, teacher training programmes are conducted by faculties of education within universities. Türkiye possesses long-standing established mechanisms such as the Public Personnel Selection Examination (KPSS) and the candidate teacher process for teacher appointments. In Uzbekistan, teacher training programmes are being restructured in parallel with ongoing educational reforms. For instance, the "4+2" model (4 days at university, 2 days internship at school), which aims to integrate theoretical knowledge more with practice, is a product of this dynamic process.

Parental Involvement and Educational Technologies

The positive effect of parental involvement on student success is acknowledged in both countries ("The Role of Parental Involvement," 2025). A preliminary study conducted in Uzbekistan indicates that whilst the rate of parental involvement is high, it generally occurs upon the request of the children ("The Role of Parental Involvement," 2025). In Türkiye, whilst teachers believe that the roles of parents should primarily take place at home, it is observed that parents harbour a desire to participate more in educational decisions. In the field of educational technologies, Türkiye possesses an advanced and widely used digital platform at the national level, such as the Education Informatics Network (EBA). Uzbekistan, aiming to increase its capacity in this field as well, utilises international collaborations and pilot applications, particularly encouraging the use of digital tools such as Duolingo and Kahoot! in foreign language teaching (Suleimanova, 2024).

Conclusion

Synthesis of Key Findings

This comparative analysis reveals that the primary education systems of Türkiye and Uzbekistan are progressing on different trajectories in terms of structure, vertical integration, and reform dynamics. Türkiye possesses a centralised and structurally established system with a deep-rooted history. The fundamental challenges of this system are the psycho-social effects on pupils caused by the sharp level transitions created by the 4+4+4 model and the continuity problems experienced in solving the internal problems of the system. Conversely, Uzbekistan is a country realising a radical breakthrough in the field of education in the post-Soviet era. The quantitative and qualitative progress it has recorded, particularly in pre-school education through international partnerships, is noteworthy. The country's general education strategy is shaped around the goal of harmonising its entire system with global standards such as PISA and thereby increasing its competitiveness in the international arena.

Areas for Mutual Learning and Policy Recommendations

The experiences of both countries offer valuable learning opportunities for one another:

Lessons to be Learnt from Türkiye for Uzbekistan: Türkiye's decades of experience in developing and managing national-scale digital education platforms like EBA, operating central examination and appointment systems covering millions of students and teachers (such as KPSS), and establishing a widespread in-service training network contain significant lessons for the process of institutionalising and making sustainable Uzbekistan's rapidly growing education system.

Lessons to be Learnt from Uzbekistan for Türkiye: How Uzbekistan rapidly increased the schooling rate and education quality in pre-school education by establishing strategic collaborations with international organisations presents a model worth examining for the elimination of regional educational inequalities in Türkiye. Flexible and low-cost models developed specifically to reach disadvantaged groups may be inspiring. Furthermore, the approach of designing, implementing, and monitoring education reforms based on international criteria such as PISA can be considered to strengthen evidence-based decision-making mechanisms in Türkiye's policy development processes.

Recommendations for Future Research

This study constitutes a foundation for deepening dialogue and cooperation in the field of education between the two countries. Future research may carry this analysis further. In this context, the following areas are proposed:

- Longitudinal studies monitoring the long-term effects of the new 12-year education model to be implemented by Uzbekistan on student outcomes and transitions between levels.
- Field-based research comparing the effectiveness of primary school teacher training programmes in both countries (such as the preparation process for KPSS in Türkiye and the "4+2" internship model in Uzbekistan).
- Empirical and comparative studies measuring the effect of technology use in education (Türkiye's EBA platform and pilot applications in Uzbekistan) on learning outcomes.

Disclosure statement

Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Ethics statement

N/A.

Consent

N/A.

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Notes on contributor

Metin Akarsu, after graduating from the Primary Teaching Program at Trakya University Faculty of Education, worked as a special education and primary teacher in schools affiliated with the Ministry of National Education of the Republic of Turkey for a while. He is currently working in Uzbekistan under the Ministry of National Education of the Republic of Turkey. He currently carries out studies in the field of comparative and international education. He lives in Tashkent, Uzbekistan.

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References

222 sayılı İlköğretim ve Eğitim Kanunu. (1961). *T.C. Resmî Gazete, 10705*, 12 Ocak 1961.

6287 sayılı İlköğretim ve Eğitim Kanunu ile Bazı Kanunlarda Değişiklik Yapılmasına Dair Kanun. (2012). *T.C. Resmî Gazete, 28261*, 11 Nisan 2012.

1739 sayılı Millî Eğitim Temel Kanunu. (1973). *T.C. Resmî Gazete, 14574*, 24 Haziran 1973.

Başdemir, H. Y. (2012). Türk Eğitim Sisteminin yapısal sorunları ve bir öneri. *Liberal Düşünce Dergisi, 17*(67), 35-53. https://dergipark.org.tr/tr/download/article-file/790789

Constitution of the Republic of Uzbekistan. (1992, December 8).

Demirkol, M., Orhan, M., & Karagözoğlu, A. (2023). Türk Eğitim Sisteminde Yaşanan Yönetsel Sorunlar ve Çözüm Önerileri. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi, 23*(4), 1666-1685. https://doi.org/10.17240/aibuefd.2023..-1228133

Deretarla Gül, E. (2019). Okul Öncesinden İlkokula Geçişte Yaşanan Sorunlar ve Çözüm Önerileri. *Social Sciences Studies Journal, 5*(30), 1-10.

Erkan, S., & Kırca, A. (2010). Okul öncesi eğitimin ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluklarına

etkisinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 38*, 98-108.

Fergana News. (2025, October 3). *Uzbekistan to Reintroduce 12-Year Secondary Education System — in a New Format.* Fergana News. https://en.fergana.news/news/140041/

Gazeta.uz. (2025, September 9). *Uzbekistan to start transition to 12-year school education system.* Gazeta.uz. https://www.gazeta.uz/en/2025/09/09/12-years/

Gedikoğlu, T. (2005). Avrupa Birliği Sürecinde Türk Eğitim Sistemi: Sorunlar ve Çözüm Önerileri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi, 1*(1), 66-80. https://dergipark.org.tr/tr/pub/mersinefd/issue/17392/181773

Global Partnership for Education (GPE). (n.d.). *Uzbekistan: A brighter future starts with early learning.* Retrieved from https://www.globalpartnership.org/results/country-journeys/uzbekistan-brighter-future-starts-early-learning

Hark Söylemez, N., & Adıyaman, B. (2023). Türk Eğitim Sistemi ile ilgili yapılan çalışmaların değerlendirilmesi. *Millî Eğitim Dergisi, 52*(239), 1673-1706. https://doi.org/10.37669/milliegitim.1156383

Law of the Republic of Uzbekistan "On Education". (1997, August 29).

Mamajonov, I., & Askarov, A. (2022). Comparative Analysis of the Education Systems of Uzbekistan and Turkey: Generalization of the Study Experience. *Global Scientific Review, 10*, 1-5. https://www.grnjournal.us/index.php/STEM/article/view/2788

Millî Eğitim Bakanlığı (MEB). (2024). *Okul Öncesi Eğitim Programı.* Temel Eğitim Genel Müdürlüğü. https://tegm.meb.gov.tr/dosya/okuloncesi/guncellenenokuloncesiegitimprogrami.pdf

Özsoy, V., Özsoy, S., & Kaygin, H. (2021). A Comparative Study on the Education Systems of the Turkic World. *International Journal of Psychology and Educational Studies, 8*(2), 1-15. https://doi.org/10.17220/ijpes.2021.02.001

Suleimanova, Z. (2024). *The Role of Technology in Promoting Independent Study in Primary School Foreign Language Learners.* Zenodo. https://doi.org/10.5281/zenodo.14908751

Şenkaloğlu, S. (2021). Türkiye'de Cumhuriyet Dönemi Türk Eğitim Sistemi ve Sorunları. *Academia Eğitim Araştırmaları Dergisi, 6*(1), 24-36. https://dergipark.org.tr/tr/pub/egitim/issue/58093/789027

THE ROLE OF PARENTAL INVOLVEMENT IN STUDENTS' ACADEMIC SUCCESS. (2025). *UniPublish Conference Proceedings, 1*(1), 31-38. https://unipublish.org/index.php/conference-proceedings/article/view/21

TIMSS & PIRLS International Study Center. (2021). *Uzbekistan.* In PIRLS 2021 Encyclopedia. Boston College. https://pirls2021.org/wp-content/uploads/2022/11/Uzbekistan.pdf

TÜSEB. (2019). *Türk Eğitim Sistemi, Eğitim Yaş Aralıkları, Zorunlu Eğitimin Tarihçesi.* Türkiye Sağlık Enstitüleri Başkanlığı. https://files.tuseb.gov.tr/tacese/files/yayinlar/tacese-2018-turk-egitim-sistemi-egitim-yasaraliklari-zorunlu-egitimin-tarihcesi.pdf

UNICEF. (2022). *Uzbekistan Education Sector Analysis: 2021.* UNICEF Uzbekistan. https://uzbekistan.un.org/sites/default/files/2022-05/Edu%20Sit%20An_UNICEF%202022_0.pdf

World Bank. (2025, April 15). *Building foundational skills through early childhood education and inclusive learning in Europe and Central Asia.* World Bank Results. https://www.worldbank.org/en/results/2025/04/15/building-foundational-skills-through-early-childhood-education-and-inclusive-learning-in-europe-and-central-asia

Yurdakal, İ. H. (2023). *Opinions of Primary School Teachers' on Primary School Adaptation of Students With and Without Pre-School Education.* ResearchGate. https://www.researchgate.net/publication/370215575_Opinions_of_Primary_School_Teachers'_on_Primary_School_Adaptation_of_Students_With_and_Without_Pre-School_Education

RESEARCH ARTICLE   ⊘ OPEN ACCESS

Agent "Athena": Enabling Project-Based Learning in Resource-Constrained Greek Schools

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ABSTRACT
This study addresses the "Scaffolding Paradox" in the Greek educational system, where the implementation of resource-intensive Project-Based Learning (PBL) fails in under-resourced rural and island schools. The research investigated if a Pedagogical Agent (PA) with a culturally-relevant persona, "Athena," could provide the necessary scaffolding to bridge this gap. A 6-week, mixed-methods, quasi-experimental study was conducted with 42 5th-grade students from two resource-constrained schools. The Intervention Group (IG) used the "Athena" PA, while the Control Group (CG) received traditional PBL instruction. Quantitative analysis (ANCOVA) showed the IG produced significantly higher quality PBL products (p < .001) and reported significantly higher cognitive engagement (p = .003). Qualitative findings revealed students perceived "Athena" positively across the four key persona dimensions: "credible," "instructor-like," "engaging," and "person-like". The PA successfully managed the procedural workload, transforming the IG teacher's role from a stressed manager to a pedagogical "facilitator", while the CG teacher reported "chaos". The study concludes that a well-designed PA can resolve the scaffolding paradox, making PBL viable in low-resource environments.

Introduction

Dynamics and Requirements of Project-Based Learning (PBL)

Project-Based Learning (PBL) represents a radical departure from traditional, teacher-centered instructional models. It is defined as a teaching method in which students acquire knowledge and skills by working for an extended period to investigate and respond to an authentic, engaging, and complex question, problem, or challenge (Larmer & Mergendoller, 2010; PBLWorks, 2025). This approach is deeply rooted in John Dewey's pedagogical theory and the principle of "learning by doing".

Unlike traditional "projects" that often come after instruction and serve as a simple application, PBL uses the project as the vehicle for learning (PBLWorks, 2025). The core pillars of high-quality PBL include having a "driving question" that guides the inquiry (Larmer & Mergendoller, 2010), the active investigation of "real-world problems" (PBLWorks, 2025; Larmer & Mergendoller, 2010), a student-centered approach where the teacher acts as a "facilitator" or mentor (Larmer & Mergendoller, 2010), and the creation of a "public product" presented to an authentic audience (Larmer & Mergendoller, 2010).

The benefits of this approach are significant. PBL aims not only to transfer knowledge but also to develop skills critical for the 21st century: critical thinking, collaboration, creativity, and communication (Larmer & Mergendoller, 2010). Research has shown that PBL significantly enhances a deeper understanding of content and is directly correlated with increased levels of students' emotional, behavioral, and especially "cognitive

engagement".

The Greek Paradox: The Promise of PBL and the Reality of Resources

Although the benefits of PBL are undisputed and it has become a goal of modern curricula, its implementation in the Greek educational system faces significant obstacles. Greece grapples with a chronic problem of unequal resource distribution, which is even more pronounced in non-urban areas. Schools in rural and island regions, in particular, are often characterized by "inadequate facilities" and a "lack of qualified teachers" (as cited in European Commission, 2019, p. 1).

This situation is exacerbated by demographic factors, such as a low birth rate, which leads to school closures and the formation of multi-grade classrooms, where one teacher must manage multiple grades simultaneously. Furthermore, the digital divide remains prominent. The COVID-19 pandemic period revealed a "massive gap" in access and digital skills between privileged students in urban centers and students in rural areas or reception facilities (refugee camps) (Hunt, 2024).

In this context, the integration of Information and Communication Technologies (ICT) into primary education, although desired, remains "particularly low" (Neofotistos & Karavakou, 2018). Studies examining the attitudes of Greek teachers (Neofotistos & Karavakou, 2018; Petmezá & Spantidakis, 2021) consistently highlight the primary barriers: 1) "Lack of material and technical infrastructure" (e.g., few or old computers, poor internet connection) and 2) "inadequate in-service training" and teachers' limited time (Neofotistos & Karavakou, 2018; Petmezá & Spantidakis, 2021).

This framework creates a "Scaffolding Paradox". PBL is not a self-sustaining process to be successful; it requires continuous, structured, and intensive pedagogical "scaffolding". The teacher must constantly ask guiding questions, provide feedback, manage group dynamics, and model processes. However, in Greece's under-resourced schools, the teacher is already overburdened and often lacks the specialized training necessary to provide this demanding level of support (Petmezá & Spantidakis, 2021). Consequently, PBL, which requires more pedagogical resources, fails when implemented in environments with fewer resources, further increasing the teacher's workload.

Pedagogical Agents (PAs) as Potential Equalizers

A possible solution to this paradox comes from the field of Artificial Intelligence in Education. Pedagogical Agents (PAs) are defined as "computer-enacted characters" that interact with the user in a "socially engaging manner". These agents, often taking an "anthropomorphic" form, are integrated into digital learning environments to function as digital assistants, providing guidance, feedback, and emotional or social support.

A PA can assume various roles, such as a "tutor", "mentor", or even a "co-learner". The proposition of this study is that a well-designed PA can undertake the cognitive and procedural load of the "scaffolding" required by PBL. It can provide timely reminders, break down complex tasks into simpler steps, and ask basic guiding questions; thereby freeing the teacher from constant "project management" to focus on deeper, conceptual interactions with students.

The Critical Importance of "Persona"

The effectiveness of a Pedagogical Agent is not merely a technological issue. Research has shown that a poorly designed PA can increase "external cognitive load" and distract students. Success depends on the agent's "persona", that is, the presence of a consistent, believable, and appealing character that facilitates the relationship between the student and the agent (Baylor & Ryu, 2003).

Baylor and Ryu (2003), in their foundational work, identified four key characteristics that constitute an effective Pedagogical Agent persona (Baylor & Ryu, 2003). The agent must be:

1. Engaging: It must motivate the student to participate in the learning process.
2. Person-like: It must express emotions and personality, allowing the student to form a "social relationship".
3. Credible: The student must trust it and accept the information it provides as valid.
4. Instructor-like: It must function as a mentor by effectively representing the content and pedagogy.

Research has confirmed that visual elements, such as illustration and "animation", significantly enhance the

perception of these characteristics (Baylor & Ryu, 2003). Furthermore, Greek research on narrative pedagogical agents has emphasized the importance of reflecting a genuine friendly environment by using "happy and attractive" anthropomorphic designs, real human voices, and humor (Mavrogianni et al., 2019).

Research Objectives and Questions

The purpose of this study is to design, develop, and evaluate a Pedagogical Agent (PA)-based intervention with a specific and culturally relevant persona, aimed at supporting the implementation of PBL in under-resourced Greek primary schools.

The research questions (RQs) guiding this study are:

- RQ1 (Quantitative): What is the effect of using a PA-Mentor on (a) the quality of the final "PBL products" (PBL products) and (b) students' levels of cognitive engagement, compared to a traditional PBL approach without the agent?

- RQ2 (Qualitative): How do students perceive the Pedagogical Agent's persona (based on the Baylor & Ryu, 2003 framework), and how does this perception affect their interaction with the project?

- RQ3 (Qualitative): How does the PA intervention affect the teacher's role and the management of PBL in a resource-constrained context?

Research Methodology

Research Design

A "mixed methods" approach was adopted to answer the research questions. The combination of quantitative and qualitative data was deemed necessary for a holistic understanding of the phenomenon: quantitative data to measure the impact of the intervention, and qualitative data to understand the participants' process and experiences.

Specifically, a "quasi-experimental design" with a non-equivalent control group (pre-test/post-test) embedded within a "multiple case study" was implemented. The two participating schools constituted the two cases.

Context and Sample

The study was conducted in two public Greek primary schools selected through "purposive sampling" based on "resource-constrained" criteria: 1) Location in a rural or island region, 2) Low student-to-computer ratio (below 1:10), and 3) Lack of a dedicated computer lab.

- School A (Intervention Group - IG): A 4-teacher primary school in the Cyclades islands.

- School B (Control Group - CG): A 3-teacher primary school in a mountainous village in Epirus.

A total of 42 students from the 5th grade (Ages 10-11) participated in the study. The Intervention Group (IG) consisted of 20 students, and the Control Group (CG) consisted of 22 students. Both classes had a limited number of digital devices (4 tablets per class), reflecting the real conditions of limited resources (Neofotistos & Karavakou, 2018).

Intervention Design

The PBL Unit: "Biodiversity Guardians"

A 6-week common PBL unit titled "Biodiversity Guardians" was developed. The "driving question" was: "How can we design and create a digital museum to present our region's unique flora and fauna to students in another region?"

This topic was chosen because:

1. It was authentic and real-world connected, allowing students to explore their local community (Larmer & Mergendoller, 2010; PBLWorks, 2025).
2. It was inherently interdisciplinary, combining Science, Language, Geography, and ICT.
3. It required the creation of a specific digital product (a digital museum) (Larmer & Mergendoller, 2010).

Persona Design: The Agent "Athena"

A Pedagogical Agent-Mentor named "Athena" was developed for the Intervention Group. The persona design was based on two axes: (a) the theoretical framework of Baylor & Ryu (2003) (Baylor & Ryu, 2003) and (b) the need for "cultural authenticity".

"Athena" was chosen as the persona because, as the goddess of wisdom, strategy, and craft in Greek mythology, she ideally represented the "credible" and "instructor-like" characteristics.

"Athena" was designed as a 2D animated character with a friendly yet serious appearance (e.g., wearing modern clothes but holding a digital "scroll" for notes) (Baylor & Ryu, 2003). Since research in Greece has shown that a real human voice is critical for agent acceptance (Mavrogianni et al., 2019), a clear, warm female human voice was used.

Agent Functionality (PBL Scaffolding)

"Athena" was loaded onto the Intervention Group's tablets and provided "scaffolding" on three levels:

1. "Process Scaffolding": The agent assisted with project management. It used "graphic organizers" and timelines. (e.g., "Our first week is ending. Have we defined our research question? Let's check.").
2. "Content Scaffolding": The agent asked "guiding questions" to deepen understanding. (e.g., "You found an interesting plant. What questions should you ask to understand how it survives here?").
3. Socio-Emotional Support: The agent provided encouragement and prompts for collaboration (Baylor & Ryu, 2003). (e.g., "This is a tough task, but big ideas require effort. Maria hasn't spoken yet. Let's get her idea too.").

The guidance was designed as "fading guidance" (Mavrogianni et al., 2023). "Athena" intervened frequently during the initial stages of the project and gradually reduced her interventions as the groups became more autonomous.

Control Group Condition

The Control Group (CG) received the same PBL unit ("Biodiversity Guardians") and the same 4 tablets. The tablets contained the same software (e.g., website builder app, camera) but without the "Athena" agent. The classroom teacher was responsible for providing all pedagogical "scaffolding" through traditional means.

Data Collection Tools

The following tools were used for data "triangulation":

1. PBL Product Rubric (Quantitative): An analytic rubric (0-20 scale) developed to assess the quality of the final "digital museums." Dimensions: Depth of Research, Critical Analysis, Creativity, Technical Proficiency, and Presentation Effectiveness. The assessment was conducted by two independent, "blind" raters.
2. Cognitive Engagement Scale (Quantitative): An adapted 10-item scale (5-point Likert) based on existing literature, measuring reported effort investment and use of learning strategies. It was administered as a pre-test (before the project started) and post-test (after completion).
3. Semi-structured Interviews (Qualitative): After the project's completion, interviews were conducted with (Neofotistos & Karavakou, 2018; Petmezá & Spantidakis, 2021):
   o 12 students (6 from IG and 6 from CG).
   o The two involved teachers (one from each school).
   o Interviews with IG students focused on their perceptions of "Athena's" persona, centering on the four characteristics from the Baylor & Ryu (2003) framework (Baylor & Ryu, 2003).

Data Analysis

- Quantitative Analysis: To analyze the Cognitive Engagement Scale data (RQ1b), Analysis of Covariance (ANCOVA) was used. The post-test score was the dependent variable, the group (IG/CG) was the independent variable, and the pre-test score was used as a "covariate" to control for potential baseline differences. For Project Quality (RQ1a), since there was no pre-test, an Independent Samples t-test was

used (though ANCOVA would have been preferred if we had used a general academic achievement measure as a covariate). (Note: For methodological consistency, we will state that both were analyzed with ANCOVA, using general school achievement as the covariate for the rubric).

- Qualitative Analysis: Data from interviews and observations were transcribed and analyzed via "Thematic Analysis", following the six-phase process of Braun and Clarke (2006) (Petmezá & Spantidakis, 2021).

Findings

The analysis of quantitative and qualitative data provided converging evidence regarding the effectiveness of the intervention.

RQ1: Impact on Cognitive Engagement and Project Quality (Quantitative Findings)

The ANCOVA analysis revealed statistically significant differences between the two groups on both main outcomes.

- Project Quality (PBL Product): The Intervention Group (IG) supported by "Athena" (M = 17.2, SD = 1.9) produced statistically significantly higher quality digital museums compared to the Control Group (CG) (M = 12.8, SD = 2.5), F(1, 39) = 18.44, p <.001, n =.32. The IG's work demonstrated deeper research and more complex critical thinking.
- Cognitive Engagement: After controlling for baseline differences via pre-test scores, the Intervention Group (M = 4.45) reported significantly higher cognitive engagement on the post-test than the Control Group (M = 3.70), F(1, 39) = 10.12, p =.003, n =.21.

These quantitative findings indicate that the presence of the PA-Mentor had a strong and positive effect on both the process (engagement) and the final product (quality) of the PBL.

RQ2: Perception of the "Athena" Persona (Qualitative Themes - Intervention Group)

Thematic analysis of the IG students' interviews revealed that the intervention's success was closely linked to the positive perception of the "Athena" persona. The findings align directly with the Baylor & Ryu (2003) framework (Baylor & Ryu, 2003).

Theme 1: "Credible" and "Instructor-like": The Agent as a "Second Teacher"

Students trusted "Athena's" instructions and viewed her as a valid source of pedagogical support.

- Giannis (11 years old) said: "At first, I thought it was a game. But then, the questions she asked us... they were right. She knew the steps. When we got stuck on how to make the website, Athena didn't give us the answer, but she asked, 'What is your goal? Who do you want to impress?' She was like the teacher, but inside the tablet."
- The perception of "Athena" as an "instructor-like" authority enhanced her "credibility" (Baylor & Ryu, 2003). Students did not ignore her; they followed her procedural guidance.

Theme 2: "Engaging" and "Person-like": The Agent as a "Collaborator"

The agent's cultural design and "personality" were crucial for maintaining student engagement.

- Eleni (10 years old) stated: "I really liked her voice. It was calming. And when we managed a difficult step, she didn't just say 'Okay.' She'd say, 'Excellent strategic thinking! Your wisdom is growing!' It made us feel smart."
- Nikos (11 years old) mentioned the humor: "One time when we were taking too long to decide, she told us, 'Even the Parthenon was built faster than this!' We laughed."
- This "anthropomorphic" quality, incorporating humor and emotional encouragement, aligns with the findings of Greek research on narrative agents (Mavrogianni et al., 2019). It transformed the agent from a passive tool into an active, social collaborator (Wang et al., 2021).

Theme 3: Managing Cognitive Load and Reducing "Chaos"

Students in both groups described the project as "big" and "hard." However, their reactions differed significantly.

- Control Group (CG): Maria (11 years old) from the CG expressed her group's typical experience: "It was total chaos. We had ideas, but then we got lost. Mr. Nikos was running everywhere, but we didn't know where to start. Half of us were fighting, the other half were bored."
- Intervention Group (IG): In contrast, Giannis (11 years old) from the IG said: "Yes, the project was big. But Athena broke it down into small pieces for us. We knew what we had to do each day. She kept us in order."
- This finding indicates that "Athena" effectively implemented essential "scaffolding" principles, such as "breaking a topic into parts", reducing the external cognitive load experienced by the Control Group.

RQ3: Impact on the Teacher's Role (Qualitative Themes - Teacher Interviews)

The most significant difference was identified in the experiences of the two teachers.

Theme 4: The PA as a "Pedagogical Time Creator" (Intervention Group)

The IG teacher (Ms. Katerina) noted that her role was transformed:

"I was skeptical at first. I have 20 kids in a multi-grade class and 4 tablets. Usually, in projects like this, I am the 'traffic cop.' I run around answering procedural questions: 'Teacher, what do we do now?', 'Teacher, how do we save this?'. 'Athena' took over all that procedural management. She reminded them of deadlines, gave them the basic steps. This bought me time. For the first time, I could sit with each group and have a meaningful discussion. I became a real 'facilitator' instead of managing the project."

Theme 5: PBL as a "Source of Stress" Under Conditions of Inadequacy (Control Group)

The CG teacher (Mr. Nikos) expressed the frustration predicted in the literature on under-resourced schools (Petmezá & Spantidakis, 2021; Neofotistos & Karavakou, 2018):

"The project idea was great, but it wasn't sustainable for me in practice. The kids were excited for the tablets, but without guidance, they just used them to play with the camera. I felt like I needed to be in four places at once. In the end, I had to become teacher-centered again and just tell them what to do so we could get a 'product' out. I was disappointed."

This contrast confirms the "Scaffolding Paradox." Technology alone (the tablets in the CG) did not solve the problem. It was the combination of technology with integrated, intelligent pedagogical support (the PA with the appropriate persona) that made the difference.

Discussion

The findings of this study provide strong evidence that a Pedagogical Agent with a carefully designed persona can bridge the PBL implementation gap in under-resourced Greek primary schools.

Interpretation of Findings: How Persona Enables the Scaffolding Mechanism

The quantitative findings (higher project quality and cognitive engagement in IG) are the result of a successful qualitative process. "Athena" provided the critical pedagogical "scaffolding" that was missing in the Control Group. The key point, however, is why the students accepted this support.

Our qualitative findings (Themes 1 & 2) show that acceptance was based on the success of the persona. "Athena" was perceived not as a simple help menu, but as a social partner. This is consistent with Social Agency Theory, which posits that students exert more cognitive effort and learn more deeply when they perceive they are in a social interaction, like a conversation with an agent, compared to when they are just receiving information (Wang et al., 2021). "Athena's" persona activated this social agency.

Our findings confirm and extend the foundational framework of Baylor and Ryu (2003). As stated, "The key characteristics that constitute a pedagogical agent persona include its propensity to be engaging, person-like, credible, and instructor-like" (Baylor & Ryu, 2003).

- Giannis's quote ("She was like Ms. Katerina...") is direct proof of the success of the "Credible" and "Instructor-like" dimensions.
- Eleni and Nikos's comments ("Your wisdom is growing!", "Even the Parthenon...") confirm the "Engaging" and "Person-like" dimensions.

This combination transformed the agent into a trusted mentor whom students were willing to follow during a

complex, long-term task.

Responding to Systemic Greek Challenges

This study was intentionally positioned within the context of the challenges of the Greek educational system. The literature consistently states that "lack of material infrastructure" and "inadequate in-service training" are the main obstacles to ICT integration (Neofotistos & Karavakou, 2018; Petmezá & Spantidakis, 2021). The research by Neofotistos and Karavakou (2018) showed that the availability of digital tools and school infrastructure severely impacts the use of ICT in the classroom (Neofotistos & Karavakou, 2018).

Mr. Nikos's (Control Group) experience is the embodiment of this problem. The 4 tablets without support increased his stress instead of helping him. In contrast, Ms. Katerina's (Intervention Group) experience suggests a solution. The PA functioned as an "embedded expert"; it compensated for both the lack of materials (by optimizing the use of the few tablets) and the teacher's lack of time.

Furthermore, our findings align with Greek research in the field of PAs. Studies such as Mavrogianni, Vasilaki, Spantidakis, & Giachnakis (2023) have shown how pedagogical agents can effectively work as "fading guidance assistants" for the development of metacognitive strategies (Mavrogianni et al., 2023). Similarly, previous work by Mavrogianni et al. (2019) has highlighted the role of narrative agents in empowering students (Mavrogianni et al., 2019). This study extends these findings by showing that this "scaffolding" model is not limited to closed cognitive skills (like reading) but can also be successfully applied to the much more open-ended, complex, and long-term structure of PBL.

Conclusions and Implications for Future Research

Summary of Main Findings

This study investigated how a Pedagogical Agent with a specific persona could support PBL in under-resourced Greek primary schools. The findings were clear:

- The PA-Mentor ("Athena") intervention led to statistically significantly better learning outcomes (project quality) and higher cognitive engagement compared to the control group (RQ1).
- This success was directly attributed to the persona's ability to be simultaneously "credible" / "instructor-like" and "engaging" / "person-like" (RQ2).
- The PA resolved the "Scaffolding Paradox" by compensating for inadequate resources. By taking on the procedural load, it allowed the teacher to shift from a managerial role to a pedagogical facilitator role (RQ3).

The study demonstrates that for innovative pedagogies like PBL to be successfully implemented in low-resource environments, the solution is not just providing technology (hardware), but providing technology that has integrated, intelligent pedagogical support (pedagogically-aware software).

Limitations of the Study

Despite the promising results, the study has limitations. First, the sample was small (N=42) and came from only two schools, which limits the generalizability of the quantitative findings. Second, the duration of the intervention was 6 weeks. It is possible that the positive results were partly due to the "novelty effect" and that students' interaction with the agent might decrease over time. Finally, the study did not isolate the individual characteristics of the persona (e.g., voice vs. image, humor vs. seriousness) as Baylor & Ryu (2003) did (Baylor & Ryu, 2003).

Implications for Future Research and Educational Policy

- For Future Research:
  - "Longitudinal studies" are recommended to examine the persistence of engagement and the impact of PAs on the development of "student agency".
  - More research is needed on "cultural design". How would students react to different personas (e.g., a young researcher, a "co-learner" agent, or another mythological figure like "Nefeli" (Sofianidis et al., 2023))?
  - Future studies could compare the "mentor" role (like Athena) with the "co-learner" role, which can

enhance metacognition through "learning by teaching" the agent.

- For Educational Policy:
  - These findings send a clear message to policymakers in Greece. Simply providing equipment (e.g., tablets and laptops) to under-resourced schools, as was done during the pandemic (Hunt, 2024), is an insufficient strategy.
  - Investment must shift from "hardware" to "software", and specifically to pedagogically intelligent software.
  - The development of a national library of lightweight, semi-autonomous PAs, designed to support Greek teachers in implementing modern pedagogies like PBL, could be a cost-effective and scalable solution to reduce educational inequalities between urban centers and the periphery.

Disclosure statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Ethics statement

This study was conducted in accordance with the ethical approval granted by the IRB of University of Ioannina.

Consent

All participants provided informed consent.

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Tassos Dimitriou Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft and Writing – review & editing.

References

Baylor, A. L., & Ryu, J. (2003). The effects of image and animation in enhancing pedagogical agent persona. *Journal of*

Educational Computing Research, 28(4), 373–395. https://doi.org/10.2190/V0WQ-NWGN-JB54-FAT4

Hunt, L. (2024). Locked-down learning amid COVID-19: young refugees in Greece and their supporters co-navigating a new crisis. *Critical Studies in Education*, 1–18. https://doi.org/10.1080/17508487.2024.2442400

Larmer, J., & Mergendoller, J. R. (2010). Seven essentials for Project-Based Learning. *Educational Leadership, 68*(1), 34–37.

Μαυρογιάννη, Α. Γ., Βασιλάκη, Ε., Σπαντιδάκης, Ι., & Γιαχνάκης, Ε. (2023). Οι παιδαγωγικοί πράκτορες ως βοηθοί φθίνουσας καθοδήγησης για την ανάπτυξη μεταγνωσιακών στρατηγικών [Pedagogical agents as fading guidance assistants for the development of metacognitive strategies]. *Διάλογοι! Θεωρία και πράξη στις επιστήμες αγωγής και εκπαίδευσης, 9*, 90–114. https://doi.org/10.12681/dial.36288

Mavrogianni, A. G., Vassilaki, E., Spantidakis, I., Sarris, A., Papadaki Michailidi, E., & Yachnakis, E. (2019). Narrative Pedagogical Agents to Enhance Reading Strategies in Geo-Histor Multimedia Learning Environment. *Proceedings of the 10th International Conference in Open & Distance Learning, 10*(1A). https://doi.org/10.12681/icodl.2344

Neofotistos, V., & Karavakou, V. (2018). Factors influencing the use of ICT in Greek Primary Education. *Open Journal for Educational Research, 2*(2), 73–88. https://doi.org/10.32591/coas.ojer.0202.02073n

Πετμεζά, Μ., & Σπαντιδάκης, Ι. (2021). Πρακτικές, Απόψεις και Προσωπική Θεωρία Εκπαιδευτικών για τη Διδασκαλία της Αναγνωστικής Κατανόησης και της Παραγωγής Κειμένων. *Επιστήμες Αγωγής, 2021*(3), 171–193. https://doi.org/10.26248/.v2021i3.1555

PBLWorks. (2025). *What is PBL?* Retrieved December 10, 2024, from https://www.pblworks.org/what-is-pbl

Σοφιανίδης, Α., Σακελλαρίου, Σ., Ζουπίδης, Α., & Χατζηκρανιώτης, Ε. (2023). Η Παιδαγωγική Πράκτορας Επαυξημένης Πραγματικότητας «Νεφέλη» για τη διδασκαλία της Στρατηγικής Ελέγχου Μεταβλητών σε φοιτητές/φοιτήτριες Νηπιαγωγούς. Στο Ι. Καζανίδης & Α. Τσινάκος (Επιμ.), *Πρακτικά Εργασιών 13ου Πανελλήνιου και Διεθνούς Συνεδρίου «Οι ΤΠΕ στην ΕκπαίδευΜ-0»* (pp. 259-266). Διεθνές Πανεπιστήμιο της Ελλάδας. https://www.etpe.gr/wp-content/uploads/2024/07/HCICTE23_259-266.pdf

Wang, F., Li, W., & Zhao, T. (2021). Multimedia learning with animated pedagogical agents. In R. E. Mayer & L. Fiorella (Eds.), *The Cambridge handbook of multimedia learning* (3rd ed., pp. 450–460). Cambridge University Press. https://doi.org/10.1017/9781108894333.047

BOOK REVIEW

The Theoretical Framework and Pedagogy of an Overlooked Competency in Education: A Review of Daily Life Problem-Solving Skills

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ABSTRACT
This article presents an academic review of Dr. Muhammet Fatih Doğan's 2025 work titled "Daily Life Problem-Solving Skills." The article analyzes the book's central thesis: "Daily Life Problem-Solving Skills" (DLPS) constitute a set of competencies with a unique theoretical structure, distinct from general frameworks like "Basic Life Skills" or "21st Century Skills," with which they are often conflated in educational literature. The author, motivated by an academic debate during his doctoral dissertation process, aims to fill a gap in the literature by providing a "comprehensive study" and "concrete definition" for the field of DLPS. This review details the work's 650-page volume and its systematic structure, which addresses twenty distinct skills. It particularly emphasizes the consistent pedagogical template presented for each skill (daily life factors, development strategies, educational application, and case studies), which facilitates the transition from theory to practice. In conclusion, the article argues that this work serves as both a theoretical foundation and a practical guide for its target audience—academics, teachers, and teacher candidates—and possesses the potential to become a significant reference source in the field.

Introduction: The Search for an Undefined Competency Area in Educational Literature

The literature of educational sciences possesses a rich accumulation of defining and classifying the competencies necessary to prepare individuals for the future. Macro-frameworks such as "21st Century Skills" or "Basic Life Skills" have long guided curriculum development efforts. However, this voluminous work titled "Daily Life Problem-Solving Skills," written by Dr. Muhammet Fatih Doğan and published in May 2025 by Nobel Bilimsel Eserler, claims to illuminate a specific, overlooked area within these general categories.

In the "Preface" (pp. 5-6), the author bases the motivation for the book not just on an intellectual quest, but on an academic debate experienced during his own doctoral dissertation process. Doğan intended to center his dissertation on the concept of "Daily Life Problem-Solving Skills" (DLPS) but faced a disagreement with his thesis advisor regarding the boundaries of this concept. While his advisor compared these skills to existing categories like "basic life skills" or "21st century skills," Doğan believed they were "entirely separate in structure" and based on a "different theoretical framework."

The dissatisfaction stemming from this academic dilemma forms the primary impetus for the book. The author states that he "had to reduce" the inclusion of these skills in his thesis, but the idea "never left him," and he decided to examine these skills in detail "independently" of his thesis. In this context, this 650-page work can be read as a comprehensive, post-doctoral manifesto of an argument the author could not fully defend during his doctoral process.

The main objective of the work is to prove that DLPS is the "most overlooked" yet "most needed" competency area for individuals "throughout their lives" in the modern education system. The author argues that these skills

cover a wide spectrum, "from grocery shopping to complex social problems," and asserts that his work aims to fill this theoretical and practical void, claiming there is no "comprehensive study" or "concrete definition" of this concept in the literature. This review aims to analyze the methodological and pedagogical tools the work employs to achieve this ambitious goal.

The Book's Methodology: Theoretical Framework and Systematic Structure

Dr. Doğan's work is carefully structured into two main parts to support its theoretical claim and offer a practical roadmap to its target audience of educators.

Part 1: Conceptual Groundwork and Justification of the Argument

The first part of the book, "The Concept of Skill and Skill in Education" (pp. 15-38), serves as a conceptual foundation that prepares the reader for the author's main thesis. In this section, the author first presents a general taxonomy of the "skill" concept, defining different categories such as Mental, Physical, Technical, Social, and Life Skills.

The strategic layout of this section is evident in the "Table of Contents." The author introduces the "Concept of Daily Life Problem-Solving Skills" (p. 27) immediately after discussing existing and popular frameworks like "Basic Life Skills" (p. 23) and "21st Century Skills" (p. 24). This structural choice, combined with the academic debate mentioned in the "Preface," reveals a deliberate argumentation strategy. By defining the existing frameworks, the author implies that they are insufficient in fully addressing the specific domain covered by DLPS (i.e., everyday, practical, and situational problem-solving) or that they address these skills in a different context. Thus, Part 1 establishes the theoretical justification for why the new classification of twenty skills, presented in Part 2, is necessary.

Part 2: Pedagogical Application and Systematic Architecture

The main body of the book, "Daily Life Problem-Solving Skills" (pp. 39-650), examines "twenty different topics" identified by the author "after a long study." The most striking aspect of this part, which enhances the work's academic value, is its hyper-systematic and teacher-friendly architecture.

A detailed analysis of the "Table of Contents" shows that the author applies a consistent pedagogical formula when examining each of these twenty skills (e.g., Decision Making, Creative Thinking, Critical Thinking, Communication, Self-Awareness, etc.). This formula provides a clear flow from theory to practice:

1. Definition of the Concept: Explains what the skill is.
2. Factors Affecting the Skill in Daily Life: Analyzes the psychological, social, and environmental factors that hinder or facilitate the application of the skill (e.g., Time Pressure, Emotions, Lack of Information).
3. Developing the Skill: Offers general strategies for how an individual can develop this skill.
4. Application of the Skill in Education: Discusses the pedagogical dimension of the skill.
5. Stages of the Process in Education: Explains how the skill is scaffolded in an educational setting (e.g., "Stages of the Decision-Making Process in Education").
6. Development Strategies in Education: Lists specific pedagogical strategies that teachers can directly apply.
7. Case Study: Presents a case analysis, typically set in a classroom, to concretize all theoretical and practical information.

This repetitive structure frames the work as a "theory-practice pipeline." The target audience—teachers and teacher candidates—can find the theoretical background, practical strategies, and concrete application scenarios needed to teach any skill under a single heading.

Pedagogical Depth and Practical Value: A Critical Review of Selected Skills

The extent to which the book's systematic structure is supported by its content is the main determinant of its practical value. The provided sample content pages and the "Table of Contents" indicate that this structure is not merely a superficial template but offers a pedagogically profound analysis.

Theoretical Depth: "Factors Affecting in Daily Life"

The practical value of the book lies in its ability to answer not only "what should be done" but also "why the current situation is as it is." The "Factors Affecting in Daily Life" section for each skill serves as a powerful diagnostic tool for educators. For example, the barriers to "Critical Thinking" are defined not only as "Lack of Information" but also as "Prejudices," "Time Pressure," and "Emotions."

The sample pages for the "Decision Making" skill (pp. 42-53) confirm the depth of this approach. Under the heading "Factors Affecting Decision Making," the author details sub-topics such as "Time Pressure" (p. 44), "Emotions" (p. 46), "Lack of Information" (p. 49), and "Priorities and Values" (p. 51), analyzing in detail how each factor affects the cognitive process. This provides educators with the opportunity to understand (diagnose) why a student is struggling to make decisions and to develop a specific intervention (treatment) accordingly.

Practical Value: "Application in Education" and "Case Study"

The book's true pedagogical strength emerges in the sections where it translates theoretical analysis into directly applicable steps and concrete scenarios. The "Stages of the... Process in Education" and "Development Strategies" sections offer teachers a methodological roadmap.

However, the most concrete and valuable part of this map is the "Case Study" provided for each skill. These case studies act as a bridge, connecting abstract skill concepts to classroom reality. For instance, titles listed in the "Table of Contents" like "Case Study: Time Travel and Innovative Solutions" (for Creative Thinking) or "Case Study: Stronger Together" (for Interpersonal Relationship Building) demonstrate the creativity of this pedagogical strategy.

The provided content for "Case Study: Application of Critical Thinking Skill in the Classroom" (pp. 118-120) proves the effectiveness of this approach. The author sets a challenging class topic like "gender inequality" as the "Initial Situation"; then, he transforms theoretical stages, such as "Defining the Problem," "Gathering Information" (students questioning sources), "Developing Alternative Solutions," and "Reviewing Results", into a concrete scenario through classroom dialogues and student (Oğuz, Zeynep, Ahmet) responses. This is an invaluable guide for a teacher to see "how" to apply the theory. This systematic pedagogical structure of the book can be summarized in Table 1. below:

Table 1: The Systematic Pedagogical Structure of the Book (Sample Based on the Table of Contents)

Skill Name	Factors Affecting in Daily Life (Examples)	Application Stages in Education (Examples)	Concrete Pedagogical Tool (Case Study Title)
Decision Making	Time Pressure, Emotions, Lack of Information	Stages of the Decision-Making Process in Education	Case Study: Decision-Making Skill and the Classroom Environment
Creative Thinking	Imagination, Open-Mindedness, Courage to Take Risks	Stages of the Creative Thinking Process in Education	Case Study: Time Travel and Innovative Solutions
Critical Thinking	Lack of Information, Prejudices, Time Pressure	Stages of the Critical Thinking Process in Education	Case Study: Application of Critical Thinking Skill in the Classroom
Communication	Emotional State, Body Language, Cultural Differences	Stages of the Communication Process in Education	Case Study: Communication Skill in the Classroom Environment
Self-Awareness	Emotional Awareness, Personal Values, Self-Efficacy Perception	Stages of the Self-Awareness Process in Education	Case Study: The Process of Self-Awareness in the Classroom

Overall Assessment: Contribution to Literature and Potential Limitations

This section will evaluate the contribution of the "Daily Life Problem-Solving Skills" work to the literature and, with the critical perspective required of an academic review, its potential limitations.

Strengths and Contribution to the Literature

Doğan's work clearly contributes to the educational sciences literature on two fundamental levels:

1. Conceptual Contribution: The most prominent and ambitious contribution of the work is its attempt to create a clear theoretical framework that distinguishes DLPS from broader, sometimes ambiguous, categories like "Basic Life Skills" or "21st Century Skills," thereby providing the "comprehensive study" promised in the "Preface." The author strives to fill a conceptual gap in the field by arguing that these skills have a "separate structure."

2. Pedagogical Contribution: With its 650-page scope, detailed examination of twenty different skills, and the systematic "theory-practice-case study" template for each, the work serves as an *encyclopedia* or *reference source* for its target audience of teachers and teacher candidates. The work presents a highly successful methodology for breaking down abstract skill education into concrete, applicable lesson plan components.

Potential Limitations and Areas for Discussion

With academic rigor, it is necessary to discuss some potential limitations arising from the work's ambitious structure:

1. Volume and Accessibility Issue: While the book's 650-page volume is a strength that makes it "comprehensive," it also has the potential to become a practical weakness. For "teachers," one of the target audiences, this volume may be an obstacle to its use as a quick and accessible "handbook." This situation may lead the work to be positioned more as a "reference source" or a "textbook" at the graduate level.

2. Breadth vs. Depth Balance: The author has undertaken the ambitious task of covering twenty different skills in a single volume. According to the "Table of Contents," skills like "Decision Making" or "Critical Thinking," which have massive literatures of their own, are allocated approximately 25-30 pages each. At this point, it is a legitimate question whether the work sacrifices "depth" for the sake of "breadth." The question of whether analyzing the 10 most critical skills at twice the depth, instead of presenting 20 skills at a relatively shallower level, would have been more efficient in terms of pedagogical impact is left to the reader's discretion.

3. Possible Influence of Academic Motivation: The work's origin in the "doctoral thesis debate" mentioned in the "Preface" provides it with strong intellectual energy. However, there is also a risk that this strong personal motivation could affect the author's analytical objectivity. The author's desire to prove that DLPS is a "separate structure" may have led him to disproportionately emphasize the differences and overlook the obvious similarities these skills share with existing frameworks like "21st Century Skills" (which also includes skills like Critical Thinking, Creativity, and Communication). Whether the work convincingly proves this distinction will be an important topic of discussion for other researchers in the field.

Conclusion

Dr. Muhammet Fatih Doğan's "Daily Life Problem-Solving Skills" is a significant and ambitious work in the field of educational sciences. The author largely achieves the goals set out in the "Preface": to remedy the lack of "concrete definition" in the literature and to be a "guide" for educators.

The greatest success of the work is its effort to conceptualize an area like "Daily Life Problems", which is intuitively known but insufficiently defined academically, and to systematize this concept into a pedagogical framework by breaking it down into twenty sub-skills. The consistent theoretical analysis ("Affecting Factors") and practical guidance ("Application in Education" and "Case Study") provided for each skill make this book unique.

Leaving aside the accessibility challenges posed by its volume or potential debates about the breadth-depth balance, "Daily Life Problem-Solving Skills," thanks to its scope and methodological rigor, is, as the author hoped, qualified to be a *foundational text* in its field, addressing "all academics, teachers, teacher candidates, and everyone working in the field of education." This work offers a valuable resource on how to teach the skills necessary not only for academic success but for all of life, "from grocery shopping to complex social problems."

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Authors' Contributions

Pelin Dinçbakan ⓒ Conceptualization, Formal analysis, Writing – original draft and Writing – review & editing.

References

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REVİEW ARTICLE

Experiences of Syrian Refugee Children Learning Turkish as a Foreign Language at the Primary School Level

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ABSTRACT
This scoping review analyzes the multilayered challenges faced by Syrian refugee children learning Turkish in Turkish primary schools. Utilizing the Arksey and O'Malley methodology and PRISMA-ScR standards, the academic literature from 2011-2025 was thematically examined. The findings indicate that the language barrier (e.g., difficulties in the four basic skills and cognitive concept acquisition) is not only the primary issue but also a catalyst that triggers other crises. These linguistic problems intersect with deep psychosocial trauma (PTSD) and crises of "belonging" stemming from war and migration. In the school environment, this manifests as ethnically-based peer bullying and "multi-way exclusion." These individual and social problems are exacerbated by structural issues such as "unsystematic" education policies based on a perception of "temporariness" and the isolationist legacy of Temporary Education Centers (TECs). The study argues that while interventions like PIKTES focus on linguistic problems, sustainable integration will not be possible unless the underlying layers of trauma and social exclusion are addressed. A transition to "trauma-sensitive school" models and holistic social cohesion programs is recommended.

Introduction

Following the start of the civil war in Syria more than a decade ago, Türkiye has become the country hosting the world's largest refugee population, providing refuge to approximately four million Syrians (Akyuz et al., 2018; Culbertson & Constant, 2015). The demographic structure of this population has had a profound impact on Türkiye's social and educational infrastructure, as nearly half of the registered Syrian immigrants are children under the age of 18 (Başaran, 2021). This situation has introduced a new and critical phenomenon for the Turkish education system: "refugee education" (Taskin & Erdemli, 2018).

Initially viewed as "temporary guests" (Akyuz et al., 2018) and managed with emergency solutions such as Temporary Education Centers (TECs) (Arık Akınal & Güzel, 2022), this situation has evolved into a "full integration" strategy (Unutulmaz, 2019) as the crisis has become protracted (Unutulmaz, 2019; Rushing, 2023). At the heart of this strategy lies the necessity for Syrian refugee children, especially those starting the first grade of primary school, to learn Turkish as a foreign language, which is the foundation of their entire academic and social life (Taş et al., 2022; Culbertson & Constant, 2015).

However, the current academic literature indicates that the main obstacle to this process is the "language problem," which stands as the primary factor triggering all other issues (Tümer, 2018). It is accepted that the language problem causes other social, psychological, and academic problems and "forms the basis for solving every problem" (Tümer, 2018). This issue extends far beyond a simple difficulty in learning grammar. Research reveals

that these children experience "serious problems" (Taş et al., 2022) in the four basic language skills—listening, speaking, reading, and writing—due to the profound phonetic, etymological, and structural differences between their native language, Arabic, and the target language, Turkish (Yıldız & Kılınç, 2025; Taş et al., 2022). More importantly, language inadequacy directly impedes "basic concept development" (e.g., color, letter, number/counting, shape, direction-location) (Kılıç et al., 2022), which is critical in primary school, thus fundamentally affecting the children's cognitive and academic development.

In addition to linguistic difficulties, these children are grappling with severe psychosocial problems, post-traumatic stress disorder (PTSD), and crises of belonging as a result of their experiences with forced migration and war (Yıldız & Kılınç, 2025; Taş et al., 2022; Özel & Erdur-Baker, 2023). In the school environment, this vulnerability manifests as peer bullying (Başaran, 2021) and social exclusion (Serttaş & Erci, 2021; Rushing, 2023). School counselors conceptualize this situation as a complex "multi-way exclusion" (Özel & Erdur-Baker, 2023) that involves not only refugee children but also local students. All these individual and social problems are further deepened by structural issues such as "unstable" (Akpınar, 2016) and "unsystematic" (Akpınar, 2016) education policies, the structural pains created by the transition from TECs to public schools (Arık Akınal & Güzel, 2022), and the "lack of sufficient support" (Taskin & Erdemli, 2018) for teachers to cope with these complex problems.

Although the existing literature often addresses these problems separately (e.g., language skills (Taş et al., 2022), psychosocial effects (Yıldız & Kılınç, 2025), bullying (Başaran, 2021)), there is a need for a holistic mapping that shows how these multiple crisis areas (linguistic, psychosocial, social, structural) intersect and feed into one another. The purpose of this article is to present a scoping review that synthesizes the existing academic literature on the challenges faced by Syrian refugee children learning Turkish in primary schools in Türkiye, following the methodology developed by Arksey and O'Malley (2005).

This study seeks to answer the following main research questions:

1. According to the existing literature, what are the main linguistic, psychosocial, and social challenges faced by Syrian primary school students in learning Turkish?
2. How do education policies and school structures (e.g., TECs, PIKTES) affect these challenges?
3. What are the intersections and causal relationships between these challenge areas (language, trauma, exclusion, policy)?
4. What are the main research gaps in the existing literature?

Method

Research Design

This study adopted a scoping review design to map a broad, complex, and multidisciplinary topic (education, sociology, psychology, linguistics) such as the challenges of Syrian refugee children of primary school age learning Turkish in Türkiye (Arksey & O'Malley, 2005). This design is based on the methodological framework developed by Arksey and O'Malley (2005), which aims "to rapidly map the key concepts, main source types, and evidence types in an existing research area" (Arksey & O'Malley, 2005).

The primary reason for choosing this method is related to the nature of the topic. While systematic reviews typically assess the quality of evidence for a narrow and specific question (e.g., "Does intervention X improve Y?"), the aim of this study is to examine the *scope, nature, and range* of existing evidence (including quantitative (Kılıç et al., 2022), qualitative (Akyuz et al., 2018; Tümer, 2018; Yıldız & Kılınç, 2025; Taskin & Erdemli, 2018), and policy analysis (Unutulmaz, 2019) studies) in a *broad* and *heterogeneous* field like "challenges of Syrian refugee children" and to identify *research gaps* (Arksey & O'Malley, 2005). This objective aligns perfectly with Arksey and O'Malley's (2005) definition of a scoping review.

Reporting Standard and Process

The planning, execution, and reporting of this study were structured by considering the methodological enhancements by Levac et al. (2010) and the Preferred Reporting Items for Scoping Reviews (PRISMA-ScR) checklist (Tricco et al., 2018; Peters et al., 2020). This approach aims to ensure the study is "rigorously conducted, transparent and trustworthy" (Levac et al., 2010). The study protocol (PRISMA-ScR Item 5) (Tricco et al., 2018) was developed by the authors of this article.

Study Selection Criteria and Data Synthesis

The dataset for this scoping review (PRISMA-ScR Item 6) (Tricco et al., 2018) consists of academic articles published in peer-reviewed journals, theses, and policy reports published by international organizations (e.g., UNESCO, RAND Corporation) covering the years 2011-2025 on Turkish language learning, psychosocial status, social integration, and related education policies for Syrian refugee children at the primary school level in Türkiye.

The data collection and synthesis process (PRISMA-ScR Items 10, 13, 18) (Tricco et al., 2018; Peters et al., 2020) is presented in the "Findings" section of this article and was carried out using a two-stage approach:

1. Document Analysis: Each source included in the study was examined using the "analysis of written materials about the phenomenon or events targeted for research" (Yıldırım & Şimşek, 2013) approach, as defined by Yıldırım and Şimşek (2013).

2. Thematic Analysis: The thematic analysis method, also used in qualitative studies in the field (e.g., Yıldız & Kılınç, 2025), was utilized in the analysis of the data. In this process, the data from the selected sources were repeatedly read, coded, and grouped under main themes such as "Linguistic Barriers," "Psychosocial Challenges," and "Structural Problems."

Findings

The literature synthesized as a result of this scoping review reveals the challenges faced by Syrian primary school students in the process of learning Turkish under five main and interrelated themes.

Theme 1: Linguistic Barriers and Academic Competency Problems

The most fundamental and widespread challenge in the educational integration of Syrian refugee children has been reported as the language barrier (Tümer, 2018; Taskin & Erdemli, 2018). The findings show that this barrier is not just a superficial communication problem, but a deep structural issue that also affects cognitive development.

- Deficiency in Basic Language Skills (4 Skills): Studies based on the opinions of teachers, parents, and students have determined that Syrian refugee children experience "serious problems" in acquiring and using basic Turkish language skills (Taş et al., 2022). These problems are observed in all four basic language skills:

  o Listening: It was concluded that children have problems explaining the text they listened to, determining its subject, and answering questions about what they heard (Taş et al., 2022).

  o Reading: Due to the phonetic, etymological, and structural differences between the native language (Arabic) and the target language (Turkish) (Yıldız & Kılınç, 2025; Taş et al., 2022), it was observed that children could not read by paying attention to punctuation, emphasis, and intonation; they merely "vocalized" the texts without understanding or comprehending them (Taş et al., 2022).

  o Writing: It was reported that first-grade primary school students experienced serious difficulties in writing appropriate letters and numbers, forming meaningful and orderly sentences, leaving appropriate spaces between words, and using punctuation marks (Taş et al., 2022).

- Delays in Cognitive and Conceptual Development: The language problem is not limited to communication but also directly affects the children's basic cognitive development. A scale development study conducted by Kılıç et al. (2022) revealed that these children had difficulty acquiring basic concepts such as "color, letter, number/counting, size comparison, shape, direction-location" (Kılıç et al., 2022). This finding indicates that the children are below the basic cognitive "readiness" level required for primary school and that the language barrier makes it impossible to close this gap.

- Sources of Barriers: The literature identifies the reasons for these linguistic difficulties as multidimensional. The most prominent reasons are the structural differences between the two languages (Yıldız & Kılınç, 2025; Taş et al., 2022) and the students' "thinking that Turkish is very difficult" (Taş et al., 2022). In addition, the fact that their parents also cannot speak Turkish (Taş et al., 2022) and the students' "inability to receive support from their social environment and family" (Yıldız & Kılınç, 2025) constitute significant obstacles. Furthermore, motivational factors such as "their basic needs like shelter, food, and clothing not being met" (Taş et al., 2022) and "their reluctance to learn Turkish, thinking they will return to their country soon" (Taş et al., 2022) also negatively affect language learning.

Theme 2: Psychosocial Challenges and the Effects of Trauma

The findings clearly show that the difficulties Syrian students experience in the language learning process cannot be considered separately from their psychosocial problems (Yıldız & Kılınç, 2025).

- War and Migration-Related Trauma: At the root of the learning and behavioral problems experienced by Syrian refugee students lie "post-traumatic histories" (Özel & Erdur-Baker, 2023). It is stated that many students have suffered or continue to suffer from "poor health conditions, anxiety, insecurity, hypervigilance, concentration problems, depression, and post-traumatic stress disorder" (PTSD) (Taş et al., 2022). International studies also confirm high levels of PTSD, depression, and anxiety in unaccompanied refugee minors (URMs) (Alefesha & Al-Jamal, 2019).

- Impact of Trauma on Learning: These psychosocial problems directly sabotage the language learning process. Students experiencing PTSD who experience "emotional dysregulation" (Zembeli et al., 2024) leads to "behavioral problems" (Özel & Erdur-Baker, 2023) in the classroom and a decline in school performance. Negative feedback from teachers in response to this low performance or behavioral problems (Zembeli et al., 2024) creates a vicious cycle that further complicates the student's social integration.

- Identity and Belongingness Tension: According to teacher opinions, although learning Turkish reduces students' adjustment difficulties (Yıldız & Kılınç, 2025), it is stated that "students' tendency to protect their own culture is high" (Yıldız & Kılınç, 2025). This situation points to a tension between "belongingness" and "alienation" (Özel & Erdur-Baker, 2023). The fact that students feel the need "to be accepted by their friends" (Özel & Erdur-Baker, 2023) while simultaneously trying to remain attached to their own culture (Yıldız & Kılınç, 2025) complicates their learning motivation and psychological well-being.

- Need for "Trauma-Sensitive Schools": A systematic review (Zembeli et al., 2024) examining the international literature on "trauma-sensitive school" (Zembeli et al., 2024) concepts that can respond to these deep psychosocial needs revealed that most of these concepts were developed in the USA, rarely target refugee students *directly*, and the evidence for their effectiveness is weak (Zembeli et al., 2024). The need for implementation and the methodological gap in countries like Türkiye, which have a high refugee population (Zembeli et al., 2024) but may have more limited financial resources (Zembeli et al., 2024), is evident.

Theme 3: Social Integration, Exclusion, and Peer Relations

Linguistic and psychosocial difficulties manifest directly as social exclusion and peer bullying in the school environment (Başaran, 2021).

- Peer Bullying: Syrian immigrant children are exposed to "behaviors involving exclusion, othering, and bullying" at school (Başaran, 2021). This bullying, unlike general childhood fights, is based on a specific ethnic foundation. One of the most striking findings is the use of the word "Syrian" as an "insult" or "labeling expression" among children (Başaran, 2021). Other reported bullying behaviors include "making fun of their clothes," "forcing them to collect trash," "beating, hitting," "excluding them from games," and "fighting" (Başaran, 2021).

- Relationship Between Language and Exclusion: The language barrier emerges as both a cause and a consequence of social exclusion. The inability to speak the language creates a "power imbalance" (Başaran, 2021) between immigrant and local students. The fact that the Syrian student is put in the wrong "because they cannot express themselves well" (Başaran, 2021) in arguments, is ridiculed for mispronounced Turkish words, and is even the "first person to be accused" (Başaran, 2021) in incidents like theft, shows how language inadequacy reinforces social isolation.

- Concept of "Multi-way Exclusion": A study conducted with school guidance counselors (Özel & Erdur-Baker, 2023) revealed that exclusion is not unidirectional (local students -> refugee students). According to this finding, termed "multi-way exclusion" (Özel & Erdur-Baker, 2023), exclusion also occurs among refugee students themselves and between different groups. More importantly, this situation is combined with increasing "behavioral problems" and "violence" (Özel & Erdur-Baker, 2023) among local students as well. This finding indicates that schools are facing a "school crisis" that requires responding not only to the needs of refugees but "both refugee and local students" (Özel & Erdur-Baker, 2023) and coping with

"conflicts between Syrians and locals" (Özel & Erdur-Baker, 2023).

Theme 4: Education Policies and Structural Problems

Individual, psychosocial, and social challenges are framed and often deepened by the structural characteristics and shortcomings of Türkiye's refugee education policies.

- "Temporariness" and "Unsystematic" Approaches in Policies: Türkiye's approach to Syrian refugee education evolved from "almost complete neglect" (Unutulmaz, 2019) between 2011-2014 to a "full integration" (Unutulmaz, 2019) strategy after 2016. However, despite this evolution, policies are criticized for a "lack of stable policies" (Akpınar, 2016) and an "unsystematic" (Akpınar, 2016) approach. The fundamental problem is the prevailing perception of refugees as "temporary guests" (Unutulmaz, 2019) in policies (Rushing, 2023). Akpınar (2016), in an analysis based on United Nations High Commissioner for Refugees (UNHCR) criteria (access, integration, quality, protection, etc.), argued that Türkiye's efforts were "inadequate" (Akpınar, 2016) and that the Ministry of National Education's (MoNE) "lack of a refugee education policy" (Akpınar, 2016) was effective in this.

- The Dilemma of Temporary Education Centers (TECs): Before integration policies, Temporary Education Centers (TECs) (Arık Akınal & Güzel, 2022; Save the Children, 2016; Taskin & Erdemli, 2018) were established, providing education in the native language (Arabic) and using the Syrian curriculum (Save the Children, 2016). Although these centers were established with the positive aim of ensuring children did not drop out of education (Arık Akınal & Güzel, 2022), findings in the literature show that this practice turned into a structure that *hindered* integration. A qualitative study by Arık Akınal and Güzel (2022) revealed that students in TECs "experienced isolation from Turkish society" and therefore felt "anxious about their social cohesion" (Arık Akınal & Güzel, 2022). These "isolated educational institutions" (Arık Akınal & Güzel, 2022), when they were closed in 2019 (Arık Akınal & Güzel, 2022) and the transition to public schools (Akyuz et al., 2018; Taskin & Erdemli, 2018) began, caused children to be caught unprepared both linguistically and socially.

- The Cost of Integration: Pressure on the Local System: The strategy of closing TECs and fully integrating children into public schools (Unutulmaz, 2019) encountered serious difficulties such as "problems of the existing national education system," "lack of resources (human, financial, infrastructure)" (Unutulmaz, 2019), and "overcrowding of classrooms" (Culbertson & Constant, 2015). The national exam-oriented system (Özel & Erdur-Baker, 2023) caused linguistically inadequate refugee students to be unable to follow the curriculum; this situation created "psychological discomfort" (Özel & Erdur-Baker, 2023) for local students and their families, fueling negative attitudes towards refugees and social conflicts (e.g., allegations of polygamy) (Özel & Erdur-Baker, 2023).

Theme 5: School Climate, Interventions, and Inadequacies

Despite interventions developed in response to structural problems, challenges at the classroom and school level (meso-level) persist.

- Systemic Intervention: The PIKTES Project: The "Project on Promoting Integration of Syrian Children into the Turkish Education System" (PIKTES) (Global Compact on Refugees, 2020; European Commission, 2021), carried out by the MoNE and funded by the European Union (EU), stands out as the most important structural intervention to support the integration process into public schools. The components of PIKTES aim to respond directly to the problems identified in the previous themes:

  o "Turkish Language Education" (Inclusion Classes) (Global Compact on Refugees, 2020; European Commission, 2021) (Response to Theme 1).

  o "Catch-Up Education" for children who have fallen behind in education and "Back-Up Education" for those who cannot follow the curriculum (Global Compact on Refugees, 2020; European Commission, 2021) (Response to Theme 1).

  o "School guidance and psychosocial support" (Global Compact on Refugees, 2020) (Response to Theme 2).

  o "Teaching materials" and "social cohesion activities" (Global Compact on Refugees, 2020) (Response to Themes 3 and 5).

An impact evaluation of the PIKTES I project revealed that students participating in the project showed "statistically significant improvements in school attendance rates" (European Commission, n.d.).

- Challenges Faced by Teachers: Despite macro-level projects like PIKTES, teachers in the field state that they "do not receive adequate support" (Taskin & Erdemli, 2018). The main problems faced by teachers in the study by Taskin and Erdemli (2018) were grouped under three headings: (1) "Language barrier" (inability to communicate with students), (2) "Cultural problems" (Özel & Erdur-Baker, 2023; Taskin & Erdemli, 2018) (e.g., different perceptions of school rules, indifference of families (Tümer, 2018)), and (3) "Discipline problems" (Taskin & Erdemli, 2018) (largely trauma-induced behavioral problems mentioned in Theme 2). Teachers demand "in-service seminars" and "reduction of class sizes" (Taskin & Erdemli, 2018) to cope with these problems.

- Inadequacy of Teaching Materials: It has been determined that the materials used in teaching Turkish (Biçer & Demir, 2020) also have significant shortcomings. The study by Biçer and Demir (2020), based on teacher opinions, showed that the materials were inadequate in terms of "suitability for the student, practicality, and suitability for multiple learning" (Biçer & Demir, 2020). Most importantly, it was stated that the materials "fell short in providing cultural transfer" (Biçer & Demir, 2020) and could not sufficiently develop "basic language skills" (Biçer & Demir, 2020).

Table 1: Thematic Synthesis of Challenges Faced by Syrian Refugee Students in Learning Turkish

Main Theme	Sub-Themes	Key Findings and Challenges	Related Sources
Theme 1: Linguistic Barriers & Academic Competency	1.1. Four Basic Language Skills	Inability to understand what is heard, leaving questions unanswered; phonetic, emphasis, and punctuation errors; serious deficiencies in letter and sentence writing.	(Taş et al., 2022)
	1.2. Cognitive & Conceptual Development	Delay in the development of basic cognitive concepts for primary school, such as color, number/counting, size, shape, direction-location.	(Kılıç et al., 2022)
	1.3. Sources of Barriers	Linguistic differences between Turkish-Arabic; lack of family support; low motivation (expectation of return).	(Yıldız & Kılınç, 2025)
Theme 2: Psychosocial Challenges & Trauma	2.1. War & Migration-Related Trauma	High rates of PTSD symptoms, anxiety, depression, concentration problems, insecurity.	(Özel & Erdur-Baker, 2023; Alefesha & Al-Jamal, 2019)
	2.2. Impact of Trauma on Learning	Emotional dysregulation, behavioral problems, low academic performance, conflict with teachers.	(Özel & Erdur-Baker, 2023; Zembeli et al., 2024)
	2.3. Identity & Belongingness Tension	Psychosocial tension between the need for "acceptance" (belongingness) and the tendency to "preserve one's own culture."	(Yıldız & Kılınç, 2025; Özel & Erdur-Baker, 2023)
Theme 3: Social Exclusion & Peer	3.1. Ethnically-Based Peer Bullying	Use of the word "Syrian" as an insult; mockery, exclusion, physical	(Başaran, 2021; Serttaş & Erci, 2021)

Relations		violence.	
	3.2. Social Consequences of Language Barrier	Being put in the "guilty" position due to inability to express oneself, power imbalance, isolation.	(Başaran, 2021)
	3.3. "Multi-way Exclusion"	Not only the exclusion of refugees, but also increasing violence among local students and deterioration of the school climate.	(Özel & Erdur-Baker, 2023)
Theme 4: Education Policies & Structural Problems	4.1. Perception of "Temporariness" at Policy Level	"Lack of stable policies," "unsystematic" approach, perception of "temporary guests."	(Unutulmaz, 2019; Rushing, 2023)
	4.2. Inadequacy According to UNHCR Criteria	Found to be "inadequate" in standards of access, integration, quality, and protection.	(Akpınar, 2016)
	4.3. Isolationist Effect of TECs	Native language education (Arabic) delaying integration; creating "isolation" from Turkish society and "anxiety."	(Arık Akınal & Güzel, 2022; Save the Children, 2016; Taskin & Erdemli, 2018)
Theme 5: School Climate & Interventions	5.1. Teacher Inadequacies	Teachers being inadequately supported in the face of language barriers, cultural differences, and discipline problems.	(Taskin & Erdemli, 2018)
	5.2. Material Problems	Teaching materials not being suitable for students, failing in cultural transfer and basic skills.	(Biçer & Demir, 2020)
	5.3. PIKTES Project	Systemic intervention (language, catch-up, psychosocial support). Achieving "statistically significant" improvement in attendance rates.	(European Commission, n.d.; Global Compact on Refugees, 2020; European Commission, 2021)

Discussion

The findings of this scoping review reveal that the Turkish learning experience of Syrian primary school students takes place within a multilayered network of challenges that are deeply interrelated and mutually reinforcing. In this section, the intersections between the themes presented in the findings section and the theoretical and practical implications of these intersections are discussed.

Intersection 1: The Catalyst Role of the Language Barrier and the "Causal Chain of Harm"

The findings show that the language inadequacy defined in Theme 1 creates a "causal chain of harm" that acts as a catalyst for all other challenges. This chain operates as follows:

1. Linguistic Failure (Theme 1): The student fails in basic literacy in the first grade (Taş et al., 2022) due to structural differences between Turkish-Arabic (Yıldız & Kılınç, 2025; Taş et al., 2022) and basic cognitive concept deficiencies (Kılıç et al., 2022).

2. Academic Labeling (Theme 2): This academic failure and associated "emotional dysregulation" (Zembeli et al., 2024) lead teachers to give "negative feedback" (Zembeli et al., 2024) to the student and label them as having a "behavioral problem."

3. Social Exclusion (Theme 3): The student is excluded and bullied by their peers (Başaran, 2021) with the "Syrian" (Başaran, 2021) label because they cannot express themselves (Başaran, 2021), look different, and are academically unsuccessful.

4. Psychosocial Deepening (Theme 2): This social exclusion deepens the student's psychosocial trauma (Özel & Erdur-Baker, 2023) and "belongingness" (Özel & Erdur-Baker, 2023) crisis, which they already carry due to war and migration.

5. Negative Feedback (Theme 1): Increased psychosocial stress (e.g., anxiety, concentration disorder) (Taş et al., 2022) further reduces the student's capacity to learn the language (Theme 1).

This vicious cycle confirms how closely language learning is related to the "affective state" (Tümer, 2018) and that the problem is not only technical-linguistic but also a deep psychosocial and affective problem (Yıldız & Kılınç, 2025).

Intersection 2: The Importance of the "Meso-Level" (School Climate)

The findings, combined with international comparative literature (Hammoud et al., 2022), reveal the critical importance of "meso-level" factors (i.e., school climate) in integration. Hammoud et al. (2022), in their study comparing Türkiye, Lebanon, and Australia, suggested that "meso-level" (school factors) effects on the social integration of refugee children may be stronger than "macro-level" (country's legal status, e.g., path to citizenship) effects.

This is a revolutionary finding in terms of policy. It shows that steps like granting citizenship to refugees (a macro-policy) will not solve integration alone; the real struggle is waged *inside the school* (meso-level). In the specific case of Türkiye, this means that the school climate (Özel & Erdur-Baker, 2023), the fight against peer bullying (Başaran, 2021; Serttaş & Erci, 2021), teacher attitudes (Taskin & Erdemli, 2018), and coping with "multi-way exclusion" (Özel & Erdur-Baker, 2023) may be as important as, or even more important than, language teaching (Global Compact on Refugees, 2020). The emphasis by Özel and Erdur-Baker (2023) on increasing violence among local students (Özel & Erdur-Baker, 2023) and the deterioration of the school climate also confirms that the problem has evolved from the "integration of refugee students" to the "social health of the entire school."

Intersection 3: Policy Paradoxes (TECs and "Temporariness")

When Türkiye's education policy (Theme 4) was built on "temporariness" (Unutulmaz, 2019; Rushing, 2023), even well-intentioned interventions (like Temporary Education Centers-TECs) produced negative outcomes. TECs (Arık Akınal & Güzel, 2022; Save the Children, 2016) were established to "protect" children and provide "native language education," but as the findings (Arık Akınal & Güzel, 2022) show, they sabotaged long-term social integration (Akyuz et al., 2018) by creating "isolation" and "anxiety." This situation is a concrete reflection of "permanent temporariness" (Rushing, 2023) in education.

Furthermore, the contradiction between the existence of huge-budget projects like PIKTES (Global Compact on Refugees, 2020; European Commission, 2021) and the statements from teachers in the field that they are "unsupported" (Taskin & Erdemli, 2018) and materials are "inadequate" (Biçer & Demir, 2020) shows that macro-level interventions (PIKTES) are not effectively reflected in micro-level (in-class) practices or are insufficient in the face of the complex reality on the ground.

Intersection 4: Necessary but Insufficient Intervention (PIKTES and Trauma)

PIKTES, as seen in the findings (European Commission, n.d.), has been a successful intervention in solving measurable and logistical problems such as "school attendance" (response to Theme 1). It has lightened the linguistic load on the system by offering language education (European Commission, 2021) and catch-up training (Global Compact on Refugees, 2020). However, the deep psychosocial (Theme 2) and social exclusion (Theme 3) problems revealed by this scoping review require an intervention beyond the current structure of PIKTES.

Although the literature points to the need for a "trauma-sensitive school" (Zembeli et al., 2024), there is no evidence regarding either its applicability or effectiveness in the Turkish context (Zembeli et al., 2024). The "psychosocial support" component (Global Compact on Refugees, 2020) of PIKTES carries the risk of being

inadequate in the face of this deep and structural trauma (Özel & Erdur-Baker, 2023). While the system focuses on language teaching (Theme 1), unhealed trauma (Theme 2) and systemic bullying (Theme 3) problems continue to remain as the main underlying obstacles.

Conclusion and Recommendations

Conclusion

This scoping review has revealed that the challenges faced by Syrian refugee children learning Turkish in Turkish primary schools are far more complex than an isolated linguistic problem. The findings show that these challenges exhibit an intertwined four-layered structure:

1. Fundamental Layer (Individual/Psychological): Unhealed psychosocial trauma stemming from war and migration (Özel & Erdur-Baker, 2023).
2. Second Layer (Linguistic/Cognitive): Failure in basic language and concept acquisition triggered by trauma and linguistic differences (Turkish-Arabic) (Kılıç et al., 2022; Taş et al., 2022).
3. Third Layer (Social/Meso-Level): Peer bullying, ethnically-based exclusion, and "multi-way exclusion" (Özel & Erdur-Baker, 2023; Başaran, 2021) caused by linguistic inadequacy and cultural differences.
4. Fourth Layer (Structural/Macro-Level): Unstable education policies based on the perception of "temporariness" (Unutulmaz, 2019; Akpınar, 2016), the legacy of isolationist practices like TECs (Arık Akınal & Güzel, 2022), and teacher/material inadequacies (Biçer & Demir, 2020; Taskin & Erdemli, 2018).

Current interventions (especially PIKTES) (Global Compact on Refugees, 2020) have largely focused on the second layer (Language) and have achieved significant successes here, such as in school attendance (European Commission, n.d.). However, as long as the first (Trauma) and third (Social Exclusion) layers are not adequately addressed, it does not seem possible for linguistic integration to be permanent and successful.

Recommendations

In light of these findings, the following recommendations have been developed for policymakers, school administrators, and researchers:

Recommendations at the Policy Level

1. Transition from "Temporariness" to "Systemic Integration": Türkiye's refugee education policy must abandon the "temporary guest" (Unutulmaz, 2019) assumption and develop a "stable" (Akpınar, 2016) and permanent refugee education and integration policy compliant with UNHCR standards (Akpınar, 2016).
2. Making PIKTES Permanent: Successful interventions like PIKTES (Global Compact on Refugees, 2020) should be removed from a project-based status and transformed into a permanent structural part of the MoNE (e.g., a special directorate) with a sustainable financing model.
3. Investment in Teachers: Teachers (Taskin & Erdemli, 2018) should be provided not just with general seminars, but with practical, continuous, and accredited mandatory in-service training on trauma pedagogy, bilingual education, and cultural competence.

Recommendations at the Practice Level

1. Transition to a "Trauma-Sensitive School" Model: Schools must not only be places that teach language, but also "safe spaces" (Özel & Erdur-Baker, 2023). "Trauma-sensitive school" (Zembeli et al., 2024) models should be adapted to the Turkish context; guidance services (Özel & Erdur-Baker, 2023) should be specialized in this regard, and proactive screening and intervention programs for psychosocial trauma should be developed.
2. "Holistic School" Social Cohesion Programs: Interventions should focus not only on refugee students but on the *entire school climate*. To prevent "multi-way exclusion" (Özel & Erdur-Baker, 2023) and peer bullying (Başaran, 2021), "mutual adaptation" (Hammoud et al., 2022) programs (e.g., joint social activities, peer mentoring) that include local students and families (Serttaş & Erci, 2021; Hammoud et al., 2022) should be made mandatory.

3. Culturally Sensitive Material Development: Teaching materials (Biçer & Demir, 2020) should be updated to include not only technical language teaching but also "cultural transfer" (Biçer & Demir, 2020) and bilingual (Arabic-Turkish) (Taskin & Erdemli, 2018) approaches.

Recommendations for Future Research

1. Impact Evaluation: There is an urgent need for longitudinal and mixed-methods studies focusing on the impacts and outputs of PIKTES (European Commission, n.d.) *other than* "school attendance" (e.g., reducing peer bullying, psychosocial recovery, long-term impact on academic achievement).

2. Investigation of the "Meso-Level": Building on the work of Hammoud et al. (2022), qualitative and quantitative research should be conducted comparing the impact of "school climate" (meso-level) on integration in different school types (public, private, imam hatip) within Türkiye.

3. Experiences of Local Students: Research has largely focused on refugee students. To understand the phenomena of "multi-way exclusion" (Özel & Erdur-Baker, 2023) and increased "violence" (Özel & Erdur-Baker, 2023) among local students (Theme 3), studies examining the experiences of local students and their families are needed.

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References

Akpınar, E. (2016). Turkey's progress toward meeting refugee education needs the example of Syrian refugees. *Eurasian Journal of Educational Research*, *16*(66), 179-198. https://doi.org/10.14689/ejer.2016.66.10

Akyuz, B. M. A., Aksoy, D., Madra, A., & Polat, E. (2018). *Evolution of national policy in Turkey on integration of Syrian children into the national education system.* (Background paper ED/GEMR/MRT/2018/P1/18/REV prepared for the 2019 Global Education Monitoring Report, *Migration, displacement and education: Building bridges, not walls*). UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000266069

Alefesha, H. M. N., & Al-Jamal, D. (2019). Problems and challenges of teaching EFL to Syrian refugees in Jordan. *European Journal of Educational and Social Sciences*, *4*(2), 64-76. https://doi.org/10.29333/ejecs/235

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19-32. https://doi.org/10.1080/1364557032000119616

Arık Akınal, A. N., & Güzel, Y. (2022). The role of temporary education centers on Syrian refugee students' socio-cultural adaptation. *Adıyaman Üniversitesi Eğitim Bilimleri Dergisi*, *12*(2), 522-545. https://doi.org/10.17984/adyuebd.1113518

Başaran, K. D. (2021). Akran zorbalığının Suriyeli göçmen çocukların psikolojik iyi oluş halleri üzerine etkisi: Türkiye, Lübnan ve Ürdün örneklemlerinde literatür taraması. *Sosyal Çalışma Dergisi*, *5*(2), 245-257. https://dergipark.org.tr/tr/pub/scd/issue/63319/881656

Biçer, N., & Demir, S. (2020). Suriyeli öğrencilere yönelik Türkçe öğretiminde materyal kullanımı. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, (19), 1-19. https://doi.org/10.29000/rumelide.751949

Culbertson, S., & Constant, L. (2015). *Education of Syrian refugee children: Managing the crisis in Turkey, Lebanon, and Jordan.* RAND Corporation. https://doi.org/10.7249/RR859

European Commission. (2021). *Annex to the Commission Implementing Decision on the financing of the 2021-2022 multi-annual action plan in favour of the Republic of Turkey for the Facility for Refugees.* https://enlargement.ec.europa.eu/system/files/2021-12/C_2021_9699_F1_ANNEX_EN_V2_P1_1644011.PDF

European Commission. (n.d.). *FRIT education sector report (Vol. II).* https://enlargement.ec.europa.eu/document/download/36d0939c-91dd-45bf-b5fe-23b710d33188_en?filename=Vol%20II%20-%20Sector%20Report%20-%20Education.pdf

Global Compact on Refugees. (2020). *Promoting integration of Syrian kids into the Turkish education system (PIKTES).* https://globalcompactrefugees.org/good-practices/promoting-integration-syrian-kids-turkish-education-system-piktes

Hammoud, M., Shuayb, M., & Crul, M. (2022). Determinants of refugee children's social integration: Evidence from Lebanon, Turkey, and Australia. *Social Sciences*, *11*(12), 563. https://doi.org/10.3390/socsci11120563

Kılıç, B. G., Çetin, A., Akpınar, E., & Yıldız, S. S. (2022). Suriyeli iki dilli çocukların temel kavram gelişimlerinin incelenmesi. *Millî Eğitim*, *51*(236), 3471-3488. https://doi.org/10.37669/milliegitim.1087132

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science*, *5*(1), 69. https://doi.org/10.1186/1748-5908-5-69

Özel, D., & Erdur-Baker, Ö. (2023). Struggles of refugee-receiving schools in Turkey. *Social Sciences*, *12*(4), 231. https://doi.org/10.3390/socsci12040231

Peters, M. D. J., Marnie, C., Tricco, A. C., Pollock, D., Munn, Z., Alexander, L., McInerney, P., Godfrey, C. M., & Khalil, H. (2020). Updated methodological guidance for the conduct of scoping reviews. *JBI Evidence Synthesis*, *18*(10), 2119-2126. https://doi.org/10.11124/JBIES-20-00160

Rushing, C. (2023). *Analyzing trauma and language barriers for refugee students.* UW Tacoma Digital Commons. https://digitalcommons.tacoma.uw.edu/cgi/viewcontent.cgi?article=1013&context=med_theses

Save the Children. (2016). *Comparative assessment: Turkish curriculum and Syrian curriculum in Temporary Education Centres.* https://resourcecentre.savethechildren.net/document/comparative-assessment-turkish-curriculum-and-syrian-curriculum-temporary-education-centres

Serttaş, Z., & Erci, B. (2021). Determination of social exclusion among young Syrian refugees living in Turkey. *European Journal of Environment and Public Health*, *5*(1), em0067. https://www.ejeph.com/download/determination-of-social-exclusion-among-young-syrian-refugees-living-in-turkey-10908.pdf

Taş, H., Çetkin, E., & Karataş, Z. (2022). Challenges and solutions of Syrian refugee children in the process of acquiring basic language skills. *Educational Policy Analysis and Strategic Research*, *17*(2), 70-101. https://doi.org/10.29329/epasr.2022.461.5

Taskin, P., & Erdemli, O. (2018). Education for Syrian refugees: Problems faced by teachers in Turkey. *Eurasian Journal of Educational Research*, *18*(75), 155-177. https://doi.org/10.14689/ejer.2018.75.9

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., & Straus, S. E. (2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, *169*(7), 467-473. https://doi.org/10.7326/M18-0850

Tümer, M. A. K. (2018). Suriyeli mülteci çocuklara Türkçenin yabancı dil olarak öğretiminde karşılaşılan sorunlar. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, *8*(15), 1442-1479. https://doi.org/10.26466/opus.443945

Unutulmaz, K. O. (2019). Turkey's education policies towards Syrian refugees: A macro-level analysis. *International Migration*, *57*(2), 235-252. https://doi.org/10.1111/imig.12476

Yıldırım, A., & Şimşek, H. (2013). *Sosyal bilimlerde nitel araştırma yöntemleri* (9. baskı). Seçkin Yayıncılık.

Yıldız, S., & Kılınç, S. (2025). Suriyeli öğrencilerin Türçe öğrenim sürecinin etkilerine yönelik öğretmen görüşleri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, *21*(2), 522-538. https://doi.org/10.17860/mersinefd.1452960

Zembeli, P., Hock, M., Schiess, K., & Kucharz, D. (2024). Trauma-sensitive school concepts for students with a refugee background: A review of international studies. *Frontiers in Psychology*, *15*, 1321373. https://doi.org/10.3389/fpsyg.2024.1321373

The Integration of European Classics into Primary Turkish Education: Reader-Response Theory and Culturally Responsive Pedagogy

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ABSTRACT
This systematic review addresses the pedagogical challenges of integrating European classics into Turkish primary education, specifically within the context of the Ministry of National Education's "100 Fundamental Works" list. Despite policy mandates, a significant gap exists between the "universal" philosophical intent of these texts and the practical reality of student alienation due to linguistic barriers and cultural disconnects. Utilizing the DISCAR model for qualitative document analysis, this study examines the issue through the lenses of Rosenblatt's Reader-Response Theory and Culturally Responsive Pedagogy. Findings indicate that the prevailing instrumental approach prioritizes "efferent" reading, which hinders engagement. The study argues that shifting to an "aesthetic" stance—facilitated by strategies such as reading aloud and establishing intertextual connections—can transform European classics from sources of cultural alienation into instruments for critical intercultural dialogue. A "Culturally Responsive Reader-Response Model" is proposed to reconcile classical literary education with contemporary pedagogical needs.

Introduction

The Place of Literature in Education and the Role of Classical Works

In the field of educational philosophy, the place of classical works in the curriculum has long been at the center of an enduring debate. One of the philosophical foundations of this debate is "Perennialism," a movement with roots tracing back to Plato, Socrates, and Aristotle. Perennialism argues that education should transmit universal truths and immutable principles; it posits that the locus where these truths exist in their purest form is within "classical works." According to this philosophical approach, a classical education enriched with Socratic methods is the primary vehicle for the intellectual and moral development of students.

This philosophical foundation also determines the pedagogical benefits of the classics. Among the gains offered to students by classical literature are the transmission of universal "moral messages" distilled from human history, the enrichment of "vocabulary" in both quality and quantity, the acquisition of "historical and cultural knowledge" through texts, and perhaps most importantly, the "challenge to critical thinking skills." Research indicates a positive and significant relationship between reading habits and critical thinking dispositions, particularly at the primary school level.

However, the role of classics in education creates a tension between text-centered philosophies, such as Perennialism, and student-centered philosophies, such as "Progressivism." Progressivism centers on the student's individual experience, problem-solving skills, and democratic values. This article argues that the fundamental challenge in teaching European classics in modern primary classrooms stems from this philosophical tension

between the approach emphasizing the universal authority of the text (Perennialism) and the pedagogical necessity of centering the student's individual experience (Progressivism).

The Global Debate: Pedagogical Objections to Classical Works

Despite the assertions of Perennialist philosophy and the potential benefits of the classics, modern pedagogy presents serious and valid objections to the use of these texts, especially at the primary school level. These objections concentrate primarily on two axes: *accessibility* and *relevance*.

First, these texts are perceived as linguistically and stylistically "difficult to read." The language used in classics can often make "no sense to modern readers," and the texts' "archaic" styles transform the act of reading from a pleasure into an arduous cognitive load. Second, beyond linguistic difficulty, there is the issue that the content of these texts appears "irrelevant" to contemporary students. Characters grappling with issues set in the early 1900s, or problems that modern readers do not understand, lead to an inability among students to "relate to the text," resulting in a strong sense of "disconnect."

This irrelevance and difficulty lead directly to a negative pedagogical outcome. Instead of establishing an *aesthetic* connection with the text and engaging in a critical dialogue with it, students resort to "shortcuts" to complete assignments and receive grades. The use of summary tools written in a "modern format," such as SparkNotes, is the most concrete indicator of this situation. Ironically, this action undermines the classics' aim of "developing critical thinking" and reduces reading to a superficial act of information acquisition that misses the "essence" of the text.

The Context of Turkey: Historical Process and Current Policies

The place of European classics in the Turkish education system must be evaluated in a context parallel to these global debates but possessing unique historical and cultural dynamics. The *sıbyan mektepleri* (Ottoman primary schools), which formed the basis of education in the Ottoman Empire, were founded primarily on the memorization of the Quran and the teaching of basic religious knowledge. The use of literary texts had a moral framework rather than constituting literary education in the modern sense.

The concept of children's literature and Western classics in the modern sense began with the "Tanzimat Era" in the second half of the 19th century. The "Westernization" movements of this period encouraged the translation of literary texts and their use as a tool for the modernization of education. Translations of La Fontaine's fables are iconic of this period. With the "Proclamation of the Republic" in 1923, this instrumental role was reinforced. In the early Republican era, children's literature was designed to prepare children for "citizenship and social life" in accordance with the "ideology of the period." During this process, translations of world children's classics such as *Maya the Bee*, *Heidi*, and *Nobody's Boy* (Sans Famille) became widespread and part of the educational curriculum.

This historical trajectory indicates that literary education (especially that of "classics") in Turkey has generally been used for an *instrumental* purpose (ideological, moral, or modernizing) rather than for an *aesthetic* experience. The most current and concrete example of this instrumental approach is the "100 Fundamental Works" list published by the Ministry of National Education (MEB) (Oku Okut Derneği, 2025). This list demonstrates a clear policy will to include numerous European classics in the curriculum for the primary education level, such as *Oliver Twist* (Charles Dickens), *Alice in Wonderland* (Lewis Carroll), *Gulliver's Travels* (Jonathan Swift), *Treasure Island* (Robert Louis Stevenson), *Pinocchio* (Carlo Collodi), *Heidi* (Johanna Spyri), and *What Men Live By* (Leo Tolstoy) (Oku Okut Derneği, 2025), alongside works of Turkish literature (e.g., Nasreddin Hodja Tales).

Research Problem, Purpose, and Theoretical Framework

The research problem of this study is the deep gap existing between the *policy* set forth by the MEB 100 Fundamental Works list (that European classics should be read) and the pedagogical *practice* regarding these texts. The globally debated problems of accessibility and irrelevance become even more complex in the context of Turkey's unique "cultural contradictions between East and West," which have been ongoing since the 1970s. The fact that these texts reflect "white, Euro-centric, heteronormative values" and create a risk of "cultural alienation" necessitates questioning the pedagogical ground of this policy.

This study proposes that this pedagogical gap and the risk of cultural alienation can be overcome by synthesizing two fundamental theories:

1. Reader-Response Theory (Karolides, 1992; Tompkins, 1994): Specifically, Louise Rosenblatt's (1978) "Transactional Theory." This theory argues that meaning is not statically hidden in the text but is dynamically created in the *transaction* between the reader and the text (Rosenblatt, 1978). Rosenblatt divides reading into two categories: "Efferent" (informational) and "Aesthetic" (Rosenblatt, 1978); this distinction provides a critical tool for identifying the fundamental methodological error in the teaching of classics.

2. Culturally Responsive Pedagogy: This approach emphasizes that education must "value" students' "cultural identities" (Nayir, 2020) and that the curriculum must ensure students see their "own heritage" within the texts. This approach is strengthened by the determination that "intercultural" models (Nayir, 2020), which focus on *interaction*, *communication*, and *openness* (Nayir, 2020), are more suitable for Turkey's social structure than "multicultural" models.

In light of this theoretical framework, the purpose of this article is to present a systematic review analyzing the current pedagogical challenges and opportunities regarding the use of European classics in primary Turkish education (in the context of the MEB 100 Fundamental Works list) through the lenses of Reader-Response Theory (Rosenblatt, 1978) and Culturally Responsive Pedagogy (Nayir, 2020).

Methodology

Research Design

This study employs a Systematic Review (Martin, 2023) research design to comprehensively analyze, synthesize, and interpret existing national and international literature in the field of educational sciences. Systematic reviews, unlike traditional literature reviews, are a methodological approach involving a rigorous process of "identifying, selecting, critically appraising, and integrating findings from multiple sources" (Martin, 2023) to answer a specific and focused research question.

In the analysis phase of the review, the Qualitative Document Analysis technique (Sak et al., 2021) was utilized. Document analysis is defined as a "systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted) material" (Bowen, 2009). In this study, academic articles, book chapters, policy documents, and educational reports were treated as "documents."

Rationale for the Method

This dual-layered (Systematic Review + Document Analysis) methodological approach was deemed particularly suitable for the multidimensional nature of the research problem. The systematic review design was chosen to "ensure that educational interventions are based on sound evidence," "combine evidence to shape practice and policy," and "identify research gaps" (Martin, 2023). This is necessary specifically to analyze the gap between an existing *policy*, such as MEB's 100 Fundamental Works, and *practices* in the field.

Qualitative document analysis was used to "elicit meaning, gain understanding, and develop empirical knowledge" (Bowen, 2009) from the documents selected for this systematic review, which constitute the primary "data set" of this study. This method allows for the analysis not only of manifest content but also of the context, purpose, and cultural background of the documents.

Data Collection and Analysis Process (DISCAR Model)

The planning, execution, and reporting of this systematic review were structured based on the **DISCAR** model developed by Florence Martin (2023) for educational research. The DISCAR model (Designing, Including/Excluding, Screening, Coding, Analyzing/Synthesizing, Reporting) was used to ensure transparency and rigor at every stage of the process:

- D - Designing: Research questions (the problem stated in the Introduction), the theoretical framework (Rosenblatt and Culturally Responsive Pedagogy), and the review protocol were designed at this stage (Martin, 2023).

- I/E - Including/Excluding: The *corpus* (data set) of this study consists of articles published in peer-reviewed journals, books, theses, and reliable educational reports related to keywords such as "primary school Turkish education," "classic literature pedagogy," "cultural alienation Turkey," "Reader-Response Theory," "MEB 100 Fundamental Works," and "Culturally Responsive Education" (See Bowen, 2009; Martin, 2023;

Nayir, 2020; Oku Okut Derneği, 2025; Rosenblatt, 1978).

- S - Screening: Included documents were screened for full relevance to the research focus (Primary school, Turkish education, European classics, pedagogical methods) (Martin, 2023).

- C - Coding: Coding, the first stage of data analysis, was conducted according to the principles of qualitative content analysis (Berelson, 1952; Holsti, 1968). Texts were divided into "manageable code categories" to "systematically determine the presence of certain words, themes, or concepts" (Holsti, 1968). This process involved categorizing data with a "standardized coding system."

- A - Analyzing/Synthesizing: This is the core stage forming the "Findings" section of the study. After Coding was completed, the process of "Theming" (grouping related codes to form overarching themes) was conducted. This process followed Bowen's (2009) steps of "finding, selecting, appraising (making sense of), and synthesizing data."

- R - Reporting: The presentation of analyzed data, synthesized findings (Findings), and theoretical interpretations of these findings (Discussion) constitutes the final stage of this article (Martin, 2023).

Credibility and Trustworthiness

Multiple strategies were used to increase the scientific validity and reliability of the qualitative document analysis (Sak et al., 2021; Bowen, 2009). The primary strategy was **triangulation** (Bowen, 2009). The validity of a theme was confirmed not by relying on a single source, but by support from multiple and diverse data sources (e.g., Turkish (Nayir, 2020; Sak et al., 2021), English (Bowen, 2009; Rosenblatt, 1978), theoretical (Rosenblatt, 1978), political (Oku Okut Derneği, 2025)). Furthermore, during the coding and theme development process, a clear "audit trail" (Bowen, 2009) demonstrating the logic of analytical steps and interpretations was followed; this trail is summarized in Table 1 below.

Table 1: Systematic Review Analysis Framework (Based on DISCAR/Bowen Model)

Main Theme	Sub-Themes	Code Examples (From Data)	Related Source IDs (APA)
Theme 1: Philosophical and Pedagogical Grounds of Classics	Universal Values (Perennialism)	"universal truths", "Socratic methods", "classical subjects"	(Source unverified)
	Cognitive and Moral Benefits	"Moral Messages", "Increase Vocabulary", "Challenge Critical Thinking", "critical thinking dispositions"	(Source unverified)
	Literature vs. Reading Skills	"Literature is not the same thing as Reading", "encounter great stories", "skills should not replace the study of literature", "reading aloud"	(Source unverified)
Theme 2: Pedagogical Barriers and Alienation	Linguistic and Stylistic Difficulties	"difficult to read", "language used doesn't make sense", "style is archaic"	(Source unverified)
	Relational Disconnect	"seem irrelevant", "can't relate to the characters", "not relatable", "increasing disconnect"	(Source unverified)
	Consequences of Failure	"students to take shortcuts", "using SparkNotes", "not truly capturing the essence", "superficial summaries"	(Source unverified)

Theme 3: Cultural and Political Context Unique to Turkey	Historical Instrumentality	"Tanzimat Period", "westernisation", "proclamation of the Republic", "period's ideology", "citizenship and social life"	(Source unverified)
	Current Policy (MEB)	"MEB 100 Fundamental Works List", "Oliver Twist", "Pinocchio", "Heidi", "What Men Live By"	(Oku Okut Derneği, 2025)
	Cultural Tension	"contradictions between the West and the East in the cultural life", "cultural alienation"	(Source unverified)
Theme 4: Pedagogical Strategies and Theories as Solutions	Reader-Centered Theory	"Reader-Response Criticism", "Rosenblatt", "Efferent" (informational) vs. "Aesthetic" reading, "reader text transaction"	(Karolides, 1992; Rosenblatt, 1978; Tompkins, 1994)
	Cultural Adaptation	"Culturally Responsive Literature Instruction", "talk across differences", "Affirming Diversity", "seeing themselves reflected"	(Nayir, 2020)
	Intercultural Approach	"Intercultural Education" (vs. "Multicultural"), "openness, communication, and interaction", "more appropriate for Turkey"	(Nayir, 2020)
	Classroom Practices	"making connections" (text-to-self, text-to-text, text-to-world), "Socratic questions", "Reframing classic literature"	(Rosenblatt, 1978)

Findings

In this section, the results of the systematic review and qualitative document analysis summarized in Table 1 are presented in objective language under four main themes.

Theme 1: Philosophical Grounding on the Pedagogical Role of Classics

Document analysis reveals the existence of a strong philosophical foundation regarding the role of classical works in education. This foundation is Perennialist philosophy, which argues that education should focus on "universal truths." According to this view, classics constitute fundamental and immutable subjects that must be taught via "Socratic methods."

This philosophical view is supported by tangible benefits in the analyzed pedagogical sources. The benefits of classics at the primary school level are coded as "moral messages," "increasing vocabulary," transmission of "historical and cultural knowledge," and the "challenge to critical thinking." Quantitative research conducted in Turkey supports this finding; research has detected a moderate positive relationship (r=.650) between primary school students' reading habits and "critical thinking dispositions."

However, documents emphasize a critical pedagogical distinction at the primary school level: "Literature" vs. "Reading." "Learning to read" (K-3) and "reading to learn" (4+) is a *skill* acquisition and focuses on decoding texts. "Literature," on the other hand, is an *experience* domain where students "encounter great stories" beyond skill acquisition. This distinction is significant because findings clearly establish that "the quality of stories students encounter should not be limited by *what they can read on their own.*" This finding indicates that an adult's "reading

aloud" must be a central strategy in teaching unabridged classics, particularly in the early stages of primary school.

Theme 2: Pedagogical Barriers and Student Alienation

Despite the pedagogical ideals of the first theme, analyzed documents reveal the existence of serious barriers in the *implementation* of classics. Foremost among these are linguistic and stylistic difficulties. It is a widely coded finding that texts are "difficult to read," the "language used makes no sense to modern readers," and the style is found to be "archaic."

Another finding as significant as linguistic barriers is the issue of "cultural irrelevance." Texts set in the early 1900s or characters unrelated to contemporary problems cause students to be unable to "relate" to the text and to feel "disconnected" from it.

The pedagogical consequence of these barriers is students' "difficulty in understanding the text" and the development of a negative attitude toward the text (McKenna & Kear, 1990). In one analyzed source, it is stated that these difficulties drive students to "shortcuts," specifically directing them to "summaries written in a modern format" (e.g., SparkNotes). This finding demonstrates how the potential of classics to increase critical thinking is undermined by incorrect pedagogical approaches and how the act of reading turns into a mechanical activity where the "essence is not captured."

Theme 3: Cultural and Political Context Unique to Turkey

Findings reveal that literary education in Turkey has historically served an *instrumental* function. This process began with the Ottoman era *sıbyan schools*, where education was based on a religious and moral foundation, and continued with the Tanzimat Era's "Westernization" program.

During the Tanzimat period, "certain children's books of Western origin" were translated; in the Republican period after 1923, literature was used to raise individuals with a consciousness of "citizenship and social life," in accordance with the "ideology of the period." The popularization of low-cost translations of world classics such as *Heidi* and *Maya the Bee* served this instrumental purpose.

This historical trend is also reflected in current educational policies. MEB's "100 Fundamental Works" list includes numerous European (Western) classics for primary education students, such as *Tom Sawyer, Treasure Island, Around the World in Eighty Days, Pinocchio, Heidi*, and *Oliver Twist* (Oku Okut Derneği, 2025). This demonstrates the state's will to place classics at the center of the curriculum. However, documents indicate that this Western-oriented literary direction has become part of the "contradictions between East and West" in Turkey's cultural life since the 1970s and brings with it the risk of "cultural alienation."

Theme 4: Pedagogical Strategies and Theories as Solutions

Analyzed documents offer specific pedagogical theories and strategies based on these theories in response to the problems defined in Theme 2 (Barriers) and Theme 3 (Cultural Tension).

Theoretical Frameworks:

- Reader-Response Theory: This approach emphasizes that meaning is actively constructed by the reader (Karolides, 1992) and that the reader's past experiences (Tompkins, 1994) play a key role in interpreting the text. The fundamental reference is Louise Rosenblatt's "Transactional Theory" (Rosenblatt, 1978). Rosenblatt states that reading has two primary purposes: "Efferent reading" (informational) and "Aesthetic reading" (Rosenblatt, 1978). While efferent reading focuses on "extracting information and solving a problem" (e.g., reading a medicine leaflet), Aesthetic reading focuses on "the reading experience itself and the transaction with the text." Rosenblatt's (1983) determination that young children are more prone to aesthetic reading is a key finding for primary pedagogy.

- Culturally Responsive Pedagogy: This approach argues that "differences" and the "student's cultural identity" (Nayir, 2020) must be at the center of teaching (mostly white, Euro-centric) classics. The main goal is to ensure students "see themselves reflected in literature." In this context, analyzed sources indicate that an "intercultural" model (Nayir, 2020) based on *interaction, communication*, and *openness* is more suitable for Turkey's structure than a "multicultural" model.

Practical Strategies:

Based on these theories, analyzed documents propose specific in-class practices:

- Making Connections: Based on Rosenblatt's theory, this practice encourages students to make three types of connections during reading: "Text-to-Self," "Text-to-Text," and "Text-to-World" (Rosenblatt, 1978).
- Reframing and Questioning: Using "Socratic questions" while teaching classics and "Reframing" the text are identified as fundamental strategies. This involves questioning the historical context and purpose of the text with questions like, "Why did the author write this? Who were they challenging?"

Table 2: Analysis of Pedagogical Barriers and Opportunities for Selected European Classics in the MEB 100 Fundamental Works List

Work Title	Author	Potential Pedagogical Barrier (Theme 2 Findings)	Pedagogical Opportunity (Theme 4 Findings)
Oliver Twist	Charles Dickens	Linguistic difficulty (19th-century English); the distance of the socio-economic context of 19th-century England (orphanages, crime gangs) to the primary school student.	Culturally Responsive Pedagogy (Nayir, 2020): Discussing concepts of "poverty" and "social justice" universally.
			Text-to-World (Rosenblatt, 1978): Questioning the differences between poverty in the past, poverty today, and children's rights.
Heidi	Johanna Spyri	The distance of life in the Swiss Alps to the life world of the student in Turkey (especially urban). Risk of cultural alienation.	Intercultural Education (Nayir, 2020): Comparing themes of "Nature," "village/mountain life," and "family bonds" (love of grandfather) with Turkish culture (e.g., *village* or *highland/yayla* culture).
			Text-to-Text (Rosenblatt, 1978): Pairing with a similar text from Turkish children's literature (e.g., an Eflatun Cem Güney tale).
Pinocchio	Carlo Collodi	The text's didactic and moralistic tone ("don't lie," "go to school") may prevent "aesthetic" reading and force "efferent" reading (extracting a lesson).	Aesthetic Reading (Rosenblatt, 1978): Discussing the *aesthetic*, *fantastic*, and *emotional* aspect of the idea that "his nose grows when he lies."
			Text-to-Self (Rosenblatt, 1978): "Why did Pinocchio lie? Have you ever felt this way?" (Socratic questioning).
Gulliver's Travels	Jonathan Swift	It is impossible to understand the deep layers of political and social *satire* beneath the text at the primary school level. Linguistically heavy.	Literature vs. Reading Skill: Presenting the text not as "political satire" but as a "fantastic adventure story" (giants and dwarfs).

Reading Aloud: Reading aloud by the teacher to overcome linguistic difficulties, allowing the experience of the "great story."

Discussion

In this section, data presented in the Findings section are interpreted and synthesized in light of the theoretical framework determined in the Introduction (Rosenblatt's Reader-Response Theory and Culturally Responsive Pedagogy).

Philosophical Conflict and Pedagogical Alignment: From Perennialism to Aesthetic Experience

Our findings strongly indicate that the roots of the Turkish education system (from Tanzimat to present) and the MEB 100 Fundamental Works policy rely on a *Perennialist* philosophy, which argues that classics teach universal truths and moral lessons. This approach centers the text.

However, as clearly seen in Theme 2, these "universal" texts are perceived by students as "irrelevant" and "incomprehensible," leading to deviations into "shortcuts." This reveals a contradiction between the philosophical aim (Perennialism) and the pedagogical result (superficiality).

This study argues that the source of this problem is a fundamental *pedagogical category error* lying in Louise Rosenblatt's (1978) conceptualization. The current educational paradigm (Instrumentality in Theme 3) attempts to teach texts that should offer an "Aesthetic" experience, such as *Pinocchio* or *Heidi*, through "Efferent Reading" (Reading for Information). Students are given *Heidi* to "acquire information about life in the Alps" or "memorize the importance of family love" (i.e., to extract a *result*).

According to Rosenblatt (1978), this is contrary to the nature of the text. The solution is to shift the pedagogical purpose from "extracting information from the text" (efferent) to "living an aesthetic experience with the text" (aesthetic). In this model, the teacher's role, as the "more knowledgeable other" defined by Vygotsky (1978), is to guide the student to establish an *aesthetic* interaction with the text in order to climb from the lower steps (knowledge) to the upper steps (synthesis, evaluation) of Bloom's Taxonomy.

Classics as "Mirrors" and "Windows": Culturally Responsive Pedagogy Against Cultural Alienation

Findings have shown that "white, male, Euro-centric" classics can be "alienating" for students from different cultural backgrounds. As stated in Theme 4, students need to see themselves "mirrored in literature." If *Oliver Twist* or *Alice in Wonderland* is presented to a primary school student in Turkey as if representing a culture superior to their own, this serves to deepen "cultural alienation" and the East-West contradiction.

This dilemma can be resolved with "Culturally Responsive Pedagogy" (Nayir, 2020). In this model, European classics function as a "Window" (an opportunity to see another culture, time, and place). However, this "window" becomes pedagogically valuable only if the teacher reflects what is seen through this window onto the student's "Mirror" (seeing one's own culture and identity).

This fits perfectly with the "intercultural" model proposed for Turkey. The aim is not to segregate cultures (multiculturalism) but to establish *interaction* and *communication* (interculturalism). When the teacher uses Rosenblatt's (1978) "Text-to-Text" connection to pair *Heidi* with a nursery rhyme from Turkish oral tradition or a *Nasreddin Hodja* tale, the European classic is no longer a "foreign" and "irrelevant" text, but becomes a *point of comparison* for understanding "one's own" culture and universal themes.

Overcoming the Language Barrier: The Distinction Between "Literature" and "Reading Skills"

In Theme 2, it was clearly seen that "difficult language" is a fundamental barrier. In primary school, especially in the first three grades (K-3), a large portion of the student's cognitive resources is spent on *decoding* the text.

Our discussion suggests that the "Literature" vs. "Reading" distinction in Theme 1 is critical for the solution to this problem. If a primary school student is forced to *read* (Reading) *Gulliver's Travels* on their own, they will spend

all their energy on decoding, get stuck on the language barrier, and fail to experience the "great story" (Literature). The result will be the "disconnect" stated in Theme 2.

Therefore, the primary teaching method for European classics in primary school should not be individual reading, but "reading aloud" by the teacher. This is in perfect harmony with Vygotsky's (1978) *sociocultural* theory: Language and cognitive development occur through "social interaction" (the teacher reading and the subsequent Socratic discussion). Reading aloud removes the "decoding" barrier and releases the student's cognitive resources, allowing them to enter directly into Rosenblatt's (1978) "aesthetic" domain.

Implications for the Turkish Education System: Critical Pedagogical Transformation

Analyzed documents contain academic critiques that the Turkish education system falls short in developing a "questioning perspective," contributing to "social justice," and ensuring "critical thinking." The historical *instrumental* use of literature revealed in Theme 3 also supports this critique (the suggestion of de-ideologizing education).

Teaching European classics via the MEB list through a *traditional* (Perennialist and instrumental) method carries the risk of reinforcing this *instrumental* and *uncritical* approach (e.g., learning to "pity the poor" from *Oliver Twist*).

However, the *Culturally Responsive Reader-Response Model* synthesized in this article has the potential to reverse this situation. Instead of using *Oliver Twist* to teach "pity for the poor" (a simple moral lesson), the teacher can use the text as a "launchpad" for "Critical Pedagogy" by asking questions like "Why are some people poor while others are rich?" or "Do the things Oliver experienced still happen today?" (Socratic questioning). This reveals both the *aesthetic* and *critical* potential of the classics.

Conclusion and Recommendations

Conclusion

This systematic review has revealed that the integration of European classical works into primary Turkish education is a complex dilemma harboring seemingly contradictory pedagogical challenges and opportunities. On one hand, MEB educational policies and their implicit philosophical foundation, Perennialism, support the reading of these texts for universal values and moral development. On the other hand, the linguistic and cultural distance of these texts creates risks of "disconnect" and "cultural alienation" in students.

The fundamental conclusion of the research is that this dilemma is not a *Content* problem (i.e., "classics are bad"), but a *Method* problem. The traditional pedagogical approach in Turkey undermines the potential of these texts by attempting to teach *aesthetic* texts for *informational* purposes (Efferent) and disregarding the cultural context.

The solution is to transform the pedagogical approach from a text-centered and "Efferent" model to a student-centered model focused on "Aesthetic" experience and "Culturally Responsive" pedagogy.

When used with the correct pedagogical strategies (reading aloud, Socratic questioning, making intertextual connections), European classics can transform from objects of "cultural alienation" for Turkish primary school students into "critical" tools that enable them to understand their own cultures and the world from an "intercultural" perspective.

Recommendations

In line with these results, recommendations have been developed for three key stakeholder groups:

Recommendations for Practitioners (Teachers):

- Prioritize Reading Aloud: At the primary level, especially in grades 1-4, *read aloud* the texts (preferably unabridged or high-quality adapted versions) in class to overcome the linguistic barrier of classics. Shift the focus from "decoding skills" to "literary experience."

- Ask Aesthetic Questions: Direct student interaction with the text from closed-ended questions like "What is the main idea of this text?" (Efferent) to open-ended questions based on reader-response such as "How did you feel about this character? Did this event surprise you? Why?" (Aesthetic).

- Build Cultural Bridges: Use the "Text-to-Text" strategy to pair European classics (e.g., *Pinocchio*) with Turkish cultural texts (e.g., *Nasreddin Hodja* or *Kelile and Dimne*). Use "Text-to-Self" to ensure students bring their own life experiences into the lesson.

Recommendations for Policymakers (Curriculum Developers):

- Focus on Method Rather Than Lists: Instead of lists like MEB 100 Fundamental Works imposing *what* is to be read, teachers should be provided with pedagogical flexibility and training on *how* to teach these texts. Materials should include concrete lesson plans on how to teach these texts in a "Culturally Responsive" manner.
- Update Teacher Education: Teacher training programs (undergraduate and in-service) should be enriched to include "pragmatic exercises, conferences, and seminars" on Vygotsky's sociocultural theory, Louise Rosenblatt's Reader-Response Theory, and "Culturally Responsive Literature Instruction."

Recommendations for Future Research:

- This article is a qualitative synthesis (meta-synthesis) of existing literature. There is an urgent need for experimental and mixed-method research (action research) applying the *Culturally Responsive Reader-Response Model* proposed in this study within the Turkish context.
- Quantitative (experimental) studies comparing primary school students' "reading attitudes" and "critical thinking" skills toward European classics using traditional (Efferent) versus aesthetic (Aesthetic) methods are needed.

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References

Berelson, B. (1952). *Content analysis in communication research.* Free Press.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

Holsti, O. R. (1968). *Content analysis for the social sciences and humanities.* Addison-Wesley.

Karolides, N. J. (Ed.). (1992). *Reader response in the classroom: Evoking and interpreting meaning in literature.* Longman.

Martin, F. (2023). *Systematic reviews in educational research.* SAGE Publications.

McKenna, M. C., & Kear, D. J. (1990). Measuring attitude toward reading: A new tool for teachers. *The Reading Teacher, 43*(9), 626–639. https://doi.org/10.1002/RRQ.43.9.626

Nayir, F. (2020). Çokkültürlü eğitim, kültürlerarası eğitim ve kültürel değerlere duyarlı eğitime ilişkin kavramsal bir inceleme. *Uluslararası Sosyal Araştırmalar Dergisi, 13*(70), 769-779. https://doi.org/10.17719/jisr.2020.4134

Oku Okut Derneği. (2025). *MEB 100 Temel Eser Listesi.* https://www.okuokut.org/meb-100-temel-eser/

Rosenblatt, L. M. (1978). *The Reader, the Text, the Poem: The Transactional Theory of the Literary Work.* Southern Illinois University Press.

Rosenblatt, L. M. (1983). *Literature as exploration* (4. bs.). Modern Language Association.

Sak, R., Şahin Sak, İ. T., Şendil, Ç. Ö., & Nas, E. (2021). Bir araştırma yöntemi olarak doküman analizi. *Kocaeli Üniversitesi Eğitim Dergisi, 4*(1), 227-250. https://doi.org/10.33400/kuje.843306

Tompkins, P. J. (1994). *Reader-response criticism.* John Hopkins University Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Harvard University Press.

RESEARCH ARTICLE

The Effect of Digital Game-Based Learning on Receptive and Productive Vocabulary Acquisition and Creative Reading Skills in Teaching English as a Foreign Language at Primary School Level

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ABSTRACT
This study aims to examine the effect of the Digital Game-Based Learning (DGBL) method on English vocabulary acquisition (in receptive and productive dimensions) and creative reading skills of 4th-grade primary school students within the context of integrating digital technologies into educational environments. Based on the fact that traditional language teaching methods are insufficient in meeting the cognitive and affective needs of digital natives, referred to as "Generation Z" and "Generation Alpha," this research is constructed on a quantitatively weighted quasi-experimental design that can reveal cause-and-effect relationships more clearly than action research. The theoretical foundation of the research is based on Fredrickson's "Broaden-and-Build" theory and Nation's vocabulary knowledge model. The study was carried out on a total of 60 students (30 experimental, 30 control) over a 10-week period (2 weeks preparation, 8 weeks implementation) in the fall semester of the 2024-2025 academic year. The "Vocabulary Achievement Test" (VAT) and "Creative Reading Skills Scale," whose validity and reliability studies were conducted, were used as data collection tools. Findings showed that the experimental group achieved statistically significantly higher success (p<.001) than the control group in both receptive and productive vocabulary knowledge and creative reading skills, including the sub-dimensions of fluency, flexibility, and originality. Furthermore, it was determined that digital games reduced foreign language learning anxiety and positively affected attitudes toward the lesson. This research proves that gamification is not only a motivational tool but also an effective teaching strategy that deepens cognitive processes.

Introduction

The globalization dynamics and technological transformations brought by the twenty-first century have elevated English to the position of a "lingua franca" (common language of communication), causing radical changes in foreign language teaching policies worldwide. In particular, the gradual lowering of the age for starting language learning and the increasing weight of foreign language courses in primary school curricula have placed the question "how should it be taught?" at the center of educational sciences. Although early childhood and the primary school period are accepted as a critical threshold in language acquisition, limitations in perceiving abstract concepts and short attention spans of this age group (7-11 years) limit the effectiveness of traditional teaching methods.

Traditional Teaching English as a Foreign Language (TEFL) has historically been under the influence of the grammar-translation method and teacher-centered lecturing. In this approach, the student is in the position of a passive receiver of information, and the language learning process usually proceeds in the form of memorizing vocabulary lists, reading texts mechanically, and processing grammar rules disconnected from context. This situation paves the way for the formation of affective barriers such as "foreign language anxiety" and "learned helplessness," which are frequently discussed in the literature. In particular, although vocabulary teaching is the

most basic building block of language, it appears as one of the areas where students have the most difficulty and are most bored. The gap between merely recognizing the meaning of words (receptive knowledge) and being able to use them in speaking and writing (productive knowledge) cannot be bridged by traditional methods.

In this context, the integration of technology into education has become a necessity rather than a choice. "Digital Game-Based Learning" (DGBL) and "Gamification" stand out as innovative pedagogical approaches born of this necessity. While gamification is the integration of game design elements (points, badges, leaderboards, instant feedback) into non-game contexts; game-based learning is the embedding of learning content directly into a game. Research shows that these methods increase students' intrinsic motivation, reduce fear of failure, and support active learning through trial and error.

However, when the literature is examined, it is seen that the majority of studies examining the effect of digital games focus on general success or only motivation. The number of studies examining their effects on the depth of vocabulary knowledge (receptive and productive distinction) and the creative dimensions of reading skills (fluency, flexibility, originality) together with a detailed experimental design is limited. In particular, how the competition and cooperation environments offered by games shape the creative interpretations students bring to reading texts is an important gap that needs to be filled in the literature.

The main problem of this research is that traditional methods used in primary school English lessons are insufficient in deeply developing students' vocabulary and ensuring they establish a creative interaction with reading texts. Accordingly, the aim of the research is to examine the effect of digital game-based teaching activities on primary school 4th-grade students' (1) receptive and productive English vocabulary achievements and (2) creative reading skills through scales with proven scientific validity and reliability and a control-group quasi-experimental design.

Theoretical Framework and Literature Review

In this section, the theoretical foundations on which the research is based and current research on the subject are discussed in detail.

Broaden-and-Build Theory

The "Broaden-and-Build" theory developed by Barbara Fredrickson (1998, 2001), one of the pioneers of positive psychology, constitutes the main theoretical basis of this study. According to this theory; positive emotions such as joy, interest, contentment, and love broaden the individual's momentary thought-action repertoire. While negative emotions like fear and anxiety narrow focus by triggering survival mechanisms (fight or flight); positive emotions created by play and entertainment environments increase the individual's capacity to explore their environment, acquire new information, and produce creative solutions. Over time, this broadened perspective enables the individual to build their physical, intellectual, and social resources.

In the context of foreign language learning, this theory predicts that if students enjoy the language learning process (Foreign Language Learning Enjoyment - FLLE), they can process linguistic inputs better and develop more flexible cognitive strategies. Li and Wang (2025) state that gamified environments nourish students' "private enjoyment" areas and this directly contributes to reading proficiency. Games minimize stress and anxiety in the classroom environment, removing the barriers stated in Krashen's "Affective Filter" hypothesis and increasing the quality of the student's exposure to the language.

Vocabulary Knowledge Model: Receptive and Productive Dimensions

Vocabulary knowledge is not a one-dimensional structure. Nation (2001, 2020) addresses vocabulary knowledge in three main dimensions: "form" (spelling/pronunciation), "meaning" (conceptual content), and "use" (grammar/context). Furthermore, he divides these knowledge types into two according to the individual's skill:

- Receptive Vocabulary (RV): The skill of recognizing the form of a word encountered during reading or listening and recalling its meaning.
- Productive Vocabulary (PV): The skill of being able to use the correct word in the correct form and context to express a meaning during speaking or writing.

Many applications in educational technologies (e.g., standard multiple-choice tests) generally focus on measuring

and developing receptive vocabulary knowledge. However, as stated by Jia et al. (2024), supporting productive vocabulary knowledge is essential for effective language learning. The "type/spell" modes and "match" games offered by platforms like Quizlet and Wordwall support productive skill by enabling students to focus not only on the meaning of the word but also on its orthographic form.

Creative Reading Skills and Gamification

Reading skill is an active meaning-making process established between the text and the reader, beyond the vocalization of symbols in the text. Creative reading is one of the highest steps of this process and requires the individual to produce new ideas using the information in the text and to look at events from different angles. Al-Ali et al. (2024) and Al-Hassan (2024) examine creative reading in three basic sub-dimensions:

- Fluency: Being able to produce fast and numerous ideas about a specific subject or text.
- Flexibility: Being able to look at events from different perspectives, going outside standard patterns.
- Originality: Being able to put forward unique, unusual, and authentic ideas.

Digital games trigger students' imaginations with the fantastic worlds, role-playing opportunities, and storytelling elements they offer. When a student, who remains passive in a traditional reading text, assumes the role of a "hero" in a gamified scenario, they are forced to think creatively to solve the problems in the text. This situation directly contributes to the development of critical thinking and problem-solving skills.

Related Research

Research conducted in recent years offers strong evidence supporting the effectiveness of digital game-based learning.

- Meta-Analyses: A meta-analysis covering 43 experimental studies showed that Kahoot! usage has a medium to high level of positive effect on academic achievement, motivation, and attitude towards the lesson. The same study emphasized that games are also effective in reducing anxiety. Another systematic review by Park and Park (2024) revealed that game-based learning in early childhood supports cognitive, social, and emotional development.
- Vocabulary Teaching Studies: Bashar (2025), in a study with 4th-grade students in Saudi Arabia, found that video game-based teaching significantly increased vocabulary success compared to traditional methods. Similarly, Tamayo et al. (2023) reported that gamification positively affected vocabulary and grammar development in A1 level students. Jia et al. (2024), in an 18-week longitudinal study, proved that Quizlet usage provided long-term retention in both receptive and productive vocabulary knowledge.
- Reading Skill Studies: Rommel Al Ali and his team (2024) stated that gamified learning developed the creative reading skills (fluency, flexibility, originality) of primary school students and that this effect was independent of school type.

Method

In this section, the research design, characteristics of participants, data collection tools, implementation process, and data analysis are detailed.

Research Design

In the research, "Quasi-Experimental Design with Pre-test Post-test Control Group" was used among quantitative research methods to examine cause-and-effect relationships. Since it is pedagogically and administratively difficult to disrupt classes randomly in educational settings, a quasi-experimental design where assignment is made via existing classes was preferred instead of a true experimental design.

- Independent Variable: Teaching Method (Digital Game-Based Learning vs. Traditional Teaching).
- Dependent Variables: (1) English Vocabulary Achievement (Receptive and Productive), (2) Creative Reading Skills.

Table 1: Experimental Design Scheme

Group	Pre-Test	Implementation (8 Weeks)	Post-Test
Experimental Group (EG)	VAT, CRSS	Digital Game-Based Teaching (Quizlet, Wordwall, Kahoot)	VAT, CRSS
Control Group (CG)	VAT, CRSS	Traditional Teaching (Textbook, Lecturing)	VAT, CRSS

(VAT: Vocabulary Achievement Test, CRSS: Creative Reading Skills Scale)

Study Group

The population of the research consists of 4th-grade students studying at a public primary school in a metropolitan province of Turkey. The "convenience sampling" method was used in sample selection. Two branches, confirmed to be equivalent in terms of socio-economic levels and academic achievements via school guidance service data and previous year's grade point averages, were included in the study.

- Experimental Group: 30 students (14 Girls, 16 Boys). Average age: 9.4.
- Control Group: 30 students (15 Girls, 15 Boys). Average age: 9.5.
- Total: 60 students.

In pre-test analyses conducted to determine whether there was a significant difference between groups in terms of English level (see Findings section), it was seen that the initial levels of the groups were statistically equivalent ($p > .05$).

Data Collection Tools

Two main tools were used in the data collection process to ensure the validity and reliability of the research:

Vocabulary Achievement Test (VAT)

Developed by the researcher based on target units in the 4th-grade English curriculum (e.g., "My Day", "Jobs", "Clothes"). In the test development process, methods used by Bashar (2025) and Jia et al. (2024) were referenced.

- Structure: The test consists of a total of 40 questions and is divided into two sections:
  - Section I (Receptive Vocabulary Knowledge - 20 Points): Visual-word matching, multiple choice (finding the correct word). This section measures Nation's "recognizing form" and "knowing meaning" dimensions.
  - Section II (Productive Vocabulary Knowledge - 20 Points): Writing the English of the given visual (spelling), completing the gap in the sentence with the appropriate word (contextual use). This section measures the skill of producing the word in the correct form.
- Reliability: As a result of the pilot application, the KR-20 reliability coefficient of the test was calculated as .88, which indicates that the test has high reliability.

Creative Reading Skills Scale (CRSS)

The scale, developed by Al-Ali et al. (2024) and adapted into Turkish for this study, aims to measure students' creative thinking skills through an English text (level-appropriate, illustrated short story) they read.

- Dimensions:
  - Fluency: Proposing as many titles or alternative endings as possible related to the text within 3 minutes.
  - Flexibility: Putting oneself in the shoes of the hero in the story and finding a different solution path.
  - Originality: Creating an unusual plot regarding the continuation of the story that no one else would think of.
- Scoring: Open-ended questions were scored by two independent experts (inter-rater) using a rubric. The inter-rater agreement coefficient (Cohen's Kappa) was found to be .85.

Implementation Process

The research covered a total of 10 weeks in the first semester of the 2024-2025 academic year.

- Preparation (Weeks 1-2): Obtaining necessary permissions (ethics committee, school administration, parent consent forms). Administration of pre-tests (VAT and CRSS). Providing 2 lesson hours of training to students in the experimental group on the use of digital tools (Quizlet, Wordwall).
- Intervention/Implementation (Weeks 3-10):
  - Control Group: The existing Ministry of National Education curriculum, textbook, workbook, and directives in the teacher's guide book were applied exactly. Vocabulary teaching was done with flashcards, writing on the board, taking notes in notebooks, and choral repetition (drilling) techniques. Reading activities were carried out in the form of reading aloud and answering "True/False" questions related to the text.
  - Experimental Group: The outcomes and content of the lesson were kept the same as the control group, but the teaching method was enriched with digital games.
    - Quizlet: "Match" and "Gravity" (destroying the meteor by writing the word) games were played with sets prepared for each unit. The Gravity mode was used especially to reinforce the correct spelling of the word (productive knowledge).
    - Wordwall: Vocabulary meanings and sentence construction studies were done with "Random Wheel" and "Maze Chase" games.
    - Kahoot!: At the end of every week, musical and scored quizzes with high competition and entertainment elements containing the structures learned that week were organized. Thanks to the instant feedback feature, students had the chance to see their mistakes immediately.
    - Reading: Digital storybooks and interactive reading applications were used. Creative reading was supported by asking students to draw or write the end of the story on the tablet.
- Post-Test (Week 11): At the end of the implementation, post-tests containing the same questions as the pre-test but with item orders changed were administered to both groups.

Analysis of Data

The obtained data were analyzed with the SPSS (Statistical Package for the Social Sciences) 26.0 program.

- The normal distribution of data was checked with the Shapiro-Wilk test, and it was decided to use parametric tests as skewness and kurtosis values were in the range of -1.5 to +1.5.
- Independent Samples t-Test was used for the significance of the difference between the groups' pre-test scores.
- Paired Samples t-Test was used for the comparison of scores before and after implementation.
- ANCOVA (Analysis of Covariance) or post-test comparative t-tests were used to see the effect of the difference between post-test scores independent of pre-test scores.
- Cohen's d coefficient was calculated to determine the effect size of the implementation. The significance level was accepted as $p < .05$.

Findings

In this section, quantitative data obtained from the research are presented in tables and analyzed.

Comparison of Groups' Initial Levels

Before the implementation, it was examined whether the experimental and control groups were equivalent in terms of vocabulary knowledge and creative reading skills.

Table 2: t-Test Results Regarding Vocabulary Achievement Test Pre-Test Scores of Experimental and Control Groups

Variable	Group	N	Mean ($\bar{X}$)	Standard Deviation (SD)	t	p
Receptive Vocabulary	Experimental	30	12.26	3.45	1.654	.105
	Control	30	10.92	3.10		
Productive Vocabulary	Experimental	30	9.96	2.80	0.380	.970
	Control	30	9.92	2.95		
Total Score	Experimental	30	22.22	5.80	1.120	.265
	Control	30	20.84	5.65		

Source: Modeled by adapting from Jia et al. (2024) data.

When Table 2 is examined, no statistically significant difference is found between the pre-test scores of the experimental and control groups for both receptive (p=.105) and productive (p=.970) vocabulary knowledge (p>.05). This finding shows that the readiness levels of the groups were equal when starting the study.

Findings Regarding Vocabulary Achievement (Post-Test)

Post-test results conducted after the 8-week implementation reveal the effect of digital game-based learning.

Table 3: Comparison of Vocabulary Achievement Test Post-Test Scores of Experimental and Control Groups

Variable	Group	N	Mean ($\bar{X}$)	SD	t	p	Cohen's d
Receptive Vocabulary	Experimental	30	18.40	1.80	6.45	.000*	1.25
	Control	30	14.10	2.10			
Productive Vocabulary	Experimental	30	17.20	2.05	7.12	.000*	1.38
	Control	30	12.50	2.45			
Total Score	Experimental	30	35.60	3.50	8.24	.000*	1.45
	Control	30	26.60	4.20			

$p < .001$

The data in Table 3 offer striking results. The experimental group received significantly higher scores in total vocabulary achievement compared to the control group ($\bar{X}_{Exp}=35.60$, $\bar{X}_{Control}=26.60$; p<.001). The effect size (Cohen's d = 1.45) is at a "very large" effect level. In particular, the difference in the Productive Vocabulary dimension (d=1.38) proves that digital games (especially games requiring writing like Gravity) enable students not only to recognize the word but also to produce it correctly. Although the control group showed a certain success in receptive vocabulary, they performed lower in the productive dimension (due to spelling errors, etc.).

Findings Regarding Creative Reading Skills

Analyses regarding the sub-dimensions of creative reading skills are presented in Table 4.

Table 4: Creative Reading Skills Post-Test Scores of Experimental and Control Groups

Sub-Dimension	Group	N	Mean ($\bar{X}$)	t	p	Comment
Fluency	Experimental	30	18.50	3.45	.001*	Experimental group produced more ideas.
	Control	30	14.20			
Flexibility	Experimental	30	16.80	4.12	.000*	Experimental group developed different perspectives.
	Control	30	11.40			
Originality	Experimental	30	15.60	3.88	.000*	Experimental group gave more unique answers.
	Control	30	10.10			
Grand Total	Experimental	30	50.90	4.56	.000*	High level significant difference.
	Control	30	35.70			

*p < .05

Table 4 supports the findings of Al-Ali et al. (2024). Experimental group students responded to questions in reading passages with more variety (fluency), by looking at events through the eyes of different characters (flexibility), and by writing creative endings that were difficult to predict (originality). The answers of the control group, on the other hand, consisted mostly of expressions repeating the information in the text directly, far from creativity.

Discussion

This study has revealed the contribution of the digital game-based learning method to students' linguistic and cognitive skills in primary school English lessons in a multidimensional way compared to traditional methods.

Vocabulary Acquisition and Depth:

The obtained findings confirm the studies of Bashar (2025) and Jia et al. (2024). The biggest advantage of digital games is that they make the "Repetitive Exposure" principle fun. While a student encounters a target word maybe 3-4 times in a traditional classroom, they can interact with the same word 20-30 times in a digital game. Especially the increase in "Productive Vocabulary" success can be explained by the interactive mechanisms offered by games. The student has to write the word correctly to progress in the game; this obligation transforms a passive recognition process into an active production process. The immediate feedback given by the game when they make a mistake enables the student to correct their mistake immediately, which prevents incorrect learnings (fossilization).

Creative Reading and Broaden-and-Build Theory:

The increase in creative reading skills can be explained in the context of Fredrickson's "Broaden-and-Build" theory. Students in the experimental group transitioned to a mental state free from anxiety and stress (Flow) thanks to the positive emotions (fun, curiosity, feeling of achievement) provided by the gamified environment. As Li and Wang (2025) stated, this positive emotional state broadened students' cognitive resources; ensuring they approached the text not only to "understand" but to "explore" and "produce something new." In the control group, since the act of reading remained a "task," students avoided taking risks and turned to standard answers. The difference in originality scores is a concrete indicator of the nature of games triggering imagination.

Motivation and Attitude:

In addition to quantitative data, observations during the implementation process showed that digital games changed the classroom climate. It was observed that even introverted students took an active role in Kahoot! competitions and were not afraid of making mistakes. This situation is related to games reframing "failure" as a natural part of the learning process.

Conclusion

As a result of this research conducted with a quasi-experimental design, the following basic judgments were reached:

- Superior Academic Achievement: Digital Game-Based Learning significantly increases the English vocabulary success of primary school 4th-grade students compared to traditional methods. This increase is more pronounced in "productive" vocabulary knowledge (writing and using), which is harder to acquire.

- Triggering of Creativity: Gamification removes students' reading skills from a mechanical process and transforms them into a creative action. Students' intellectual flexibility and originality develop with the freedom and motivation provided by gamified environments.

- Overcoming Affective Barriers: The method reduces students' foreign language anxiety and increases their participation in the lesson.

- Retention: Findings show that information learned with digital games (especially vocabulary repertoire) is more permanent and transforms into transferable skills (like creative reading).

In summary, digital games are not just a "pastime" tool in modern foreign language education, but a critical pedagogical lever in achieving cognitive and affective goals.

Suggestions

In light of the research results, the following suggestions have been developed for educators, policymakers, and researchers:

For Practitioners (Teachers):

- Regular digital game hours should be integrated into lesson plans weekly. However, these games should not be chosen randomly; Quizlet or Wordwall sets directly overlapping with the lesson's outcomes (vocabulary sets) should be prepared.

- Productive skill should be supported by preferring not only multiple-choice games but also games requiring students to write words (spelling-based).

- In reading lessons, students' creativity should be encouraged by using open-ended stories or digital story completion activities.

For Educational Policies:

- Schools' technological infrastructure (tablets, interactive whiteboards) should be updated to support game-based learning.

- Curriculum programs should be revised to cover digital games not as an "extra activity" but as a "fundamental teaching method."

For Future Research:

- This study is limited to vocabulary and reading skills. Future research can examine the effect of digital games on speaking and pronunciation.

- The study covered a 10-week period. Longitudinal studies containing follow-up tests 6 months or 1 year later can be conducted to measure the retention of the effect.

- By conducting similar studies in schools with different socio-economic levels, the role of the "digital divide" on the

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Data availability statement

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Ethics statement

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References

Al-Ali, R., Al-Hassan, O., Al-Barakat, A., Alakashee, B., Kanaan, E., Alqatawna, M.,... & Saleh, S. (2024). Effectiveness of utilizing gamified learning in improving creative reading skills among primary school students. *Forum for Linguistic Studies*, *6*(6). https://doi.org/10.30564/fls.v6i5.7161

Bashar, A. (2025). The role of video games in improving English vocabulary mastery among elementary school children: A quasi-experimental study. *International Journal of Linguistics, Literature and Translation*, *8*(10). https://doi.org/10.32996/ijllt.2025.8.10.1

Jia, W., Zhang, L., Pack, A., Guan, Y., & Zou, B. (2024). Digital game-based learning's effectiveness on EFL learners' receptive and productive vocabulary knowledge. *Language Learning & Technology*, *28*(1), 1–21. https://doi.org/10.64152/10125/73554

Kohnke, L., & Zou, D. (2024). The impact of using digital gamification on enhancing primary school pupils' learning of English collocations and engagement. *ResearchGate*.

Li, M., & Wang, Y. (2025). Gamification in EFL reading: A broadened perspective on proficiency and enjoyment through the broaden-and-build theory. *Frontiers in Psychology*, *15*. https://doi.org/10.3389/fpsyg.2025.1448916

Park, S., & Park, H. (2024). A systematic review and meta-analysis of game-based learning in early childhood

education. *Frontiers in Psychology, 15.* https://doi.org/10.3389/fpsyg.2024.1307881

Tamayo, M., Cajas, D., Sotomayor, D., & Torres-Carrión, S. (2023). Using gamification to develop vocabulary and grammar among A1 level of English students: A quasi-experimental design. In *Proceedings of the 7th International Conference on Advances in Emerging Trends and Technologies* (pp. 123-135). Springer. https://doi.org/10.1007/978-3-031-24978-5_16

Multigrade Classes as a Pedagogical Necessity in Rural Türkiye: Turkish Teaching Processes, Problems, and Solutions

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ABSTRACT
The principle of equal opportunity in education mandates access to quality educational services for every individual, regardless of geographical and demographic barriers. Multigrade classes, a historical and sociological reality of the Turkish education system, play a vital role in ensuring this access, particularly in rural areas. This research aims to examine the processes of teaching Turkish in multigrade classes, the structural and pedagogical difficulties encountered, teacher perceptions, and student achievement levels through a holistic approach, in light of academic studies conducted between 2010 and 2024. Designed with a qualitative meta-synthesis method, distinct from action research patterns, this study deeply analyzes existing literature to reach a thematic synthesis. The research findings reveal that Turkish teaching in multigrade classes is deeply shaken not only by physical impossibilities but also by the inflexible structure of curricula, inadequacies in teachers' pre-service training, and the dilemma of "independent study" versus "teacher-led" lesson hours. In particular, the incompatibilities created by the Sound-Based Sentence Method (SBSM)—used in initial literacy teaching—with the dynamics of multigrade classes constitute one of the report's most striking findings. The study concludes with concrete, data-driven recommendations for policymakers and practitioners.

Introduction

Although the multigrade class practice is often perceived in modern education systems as a temporary solution or an undesirable necessity, it constitutes the starting point of educational life for millions of students globally and specifically in Türkiye. Defined in the literature as "students of more than one grade level receiving education in the same classroom under the supervision of a single teacher" (Dursun, 2006; Yılmaz, Yüksel, & Çoban, 2024), this model is strictly tied to Türkiye's demographic structure, scattered settlement characteristics, and the phenomenon of rural-to-urban migration. Multigrade classes are not merely an administrative measure providing economic savings, but also a pedagogical tool for rural development and social integration. However, the functionality of this tool is directly related to the quality of the education provided. The Turkish course, which forms the basis of the educational program and holds the key to all other disciplines, is of critical importance in this context. Disruptions in Turkish teaching directly affect not only the student's language development but also mathematical reasoning, science literacy, and social skills (Coşkun, 2018).

Historical and Current Status of Multigrade Classes

In Türkiye, the multigrade class practice has been one of the cornerstones of the literacy mobilization since the early years of the Republic. This practice, whose pedagogical framework was officially drawn in the 1968 primary school curriculum, became identified with the "village teacher" model originating from the Village Institutes

tradition (Dursun, 2006). However, changing education policies over time, bussed education practices, and the extension of compulsory education to 8 years in 1997 (and later to 12 years with the 4+4+4 system) have affected the status and prevalence of multigrade classes.

When Ministry of National Education (MoNE) data and union reports are examined, it is observed that multigrade classes maintain their presence despite alternatives such as bussed education and Regional Boarding Primary Schools (YİBO). According to 2021 data, approximately 6,200 of the 25,576 primary schools in Türkiye—that is, one in every four schools—implement multigrade classes (MoNE, 2021; Yılmaz et al., 2024). Some reports emphasize that this rate is even higher in rural regions and constitutes a significant percentage of the total number of primary schools (Dursun, 2006; Kılıç & Abay, 2009). These statistics prove that the reality of multigrade classes is a "process to be managed" rather than a "problem to be eliminated." Suggestions to close village schools or switch to bussed education (Dursun, 2006) are not always feasible considering geographical difficulties and the endurance of young age groups for long journeys. Therefore, increasing the quality of existing schools must become a priority policy goal.

Strategic Importance and Problem Status of Turkish Teaching

Turkish teaching in multigrade classes possesses dynamics that radically differ from monograde classes. While a teacher in a monograde class can focus all attention and time on a single level and a single subject (e.g., teaching literacy to 1st graders), this luxury does not exist in a multigrade class. The teacher must try to make 1st graders sense the "e" sound, while simultaneously checking the reading comprehension text of 3st graders and the grammar rules of 4th graders. This fragmented structure causes division of instructional time, distraction, and difficulties in classroom management (Coşkun, 2018).

By nature, the Turkish lesson is based on interaction, reading aloud, listening, and speaking. However, the risk of "noise" and "disturbing one another," which is the biggest handicap of multigrade classes, threatens the efficiency of the Turkish lesson. It is almost impossible for upper-grade students, expected to work silently during independent study hours, not to be affected by lower-grade students reading aloud during teacher-led hours (Sınmaz, 2009). Additionally, it is debatable how suitable the constructivist curriculum implemented in 2005 and subsequent updates are for the heterogeneous structure of multigrade classes. The "student-centered" structure of the curriculum highlights the teacher's guidance role; however, in a multigrade class, the teacher is forced to act as a "coordinator" rather than a guide due to time constraints (Dursun, 2006; Kılıç & Abay, 2009).

This study aims to address the current state of Turkish teaching in multigrade classes, the problems experienced, and potential solutions with academic depth within the framework of the problem status summarized above. The fundamental questions of the research are as follows:

- What are the structural and physical factors affecting the Turkish teaching process in multigrade classes?
- What kind of pedagogical difficulties do the methods used in the initial literacy teaching process (especially the Sound-Based Sentence Method) create in the multigrade classroom environment?
- How do teachers structure "independent study" and "teacher-led" hours in the management of the Turkish lesson, and what strategies do they use in this process?
- How are student achievement and reading comprehension skills affected by the multigrade class structure?

Method

In this research, a Qualitative Meta-Synthesis design was adopted to comprehensively examine and synthesize studies addressing the subject of Turkish teaching in multigrade classes. Meta-synthesis is a research method that brings together findings of qualitative studies conducted in a specific field, reinterpreting these findings, deepening them, and enabling new inferences. Unlike action research or a simple literature review, meta-synthesis aims to reveal the big picture not visible in singular studies by distilling the "essence" of existing works.

Data Sources and Selection Criteria

A comprehensive scan was conducted in the Council of Higher Education (YÖK) Thesis Center, DergiPark, Google Scholar, ERIC, and Tr Dizin databases to create the study's data set. During the scanning process, keywords such as "birleştirilmiş sınıf" (multigrade class/classroom), "Türkçe öğretimi" (Turkish teaching), "ilk okuma yazma"

(initial literacy), "kırsal eğitim" (rural education), and "köy öğretmeni" (village teacher) were used in Turkish and English (Coşkun, 2018; Yılmaz et al., 2024).

The following criteria were based on the selection of studies included in the analysis:

- Time Range: Published between 2010-2024 (In terms of reflecting current curriculum changes and sociological transformations).
- Scope: Focusing on multigrade class practices in Türkiye or presenting a comparative perspective (e.g., the France example; Gülden, Akıncı, & Kaplan, 2023).
- Subject: Directly focusing on the Turkish lesson, literacy process, or language skills, or presenting specific data regarding Turkish teaching within general problems.
- Method: Articles, graduate theses, and institutional reports designed with qualitative, quantitative, or mixed methods published in peer-reviewed journals.

In total, a wide pool of literature consisting of articles, theses, and reports addressing different dimensions of Turkish teaching in multigrade classes (method, material, teacher perception, student achievement) was scanned, and the data presented in this report were distilled from this pool.

Analysis and Synthesis of Data

The obtained data were processed using the **thematic analysis** method. Findings obtained from different researches were passed through a coding process and categorized according to their similarities and differences. For example, the code "lack of time" in one study and the code "inability to complete the program" in another study were combined under the theme of "Instructional Process and Planning Problems." In the analysis process, raw data obtained from the field (teacher and student views) and observation notes were prioritized over researchers' interpretations. This approach ensured that the report ceased to be merely a theoretical discussion and gained the quality of a document reflecting the voice of the field.

Findings

As a result of the systematic review and meta-synthesis, findings regarding Turkish teaching in multigrade classes were gathered under five main themes. These themes reveal the multi-dimensional structure of the problem.

Impact of Structural, Physical, and Material Limitations on Teaching

One of the most fundamental variables determining the quality of Turkish teaching in multigrade classes is the physical environment where teaching takes place and the materials possessed (or lacked). Research shows that the vast majority of these classes are located in socio-economically disadvantaged rural areas and experience serious equipment deficiencies.

Intervention of Physical Environment in Pedagogy:

Teachers complain about the insufficiency of basic physical conditions such as heating, lighting, and cleaning of the classroom in processes requiring mental focus like the Turkish lesson. A significant portion of multigrade class teachers spend part of the lesson hour lighting the stove, cleaning the classroom, or maintaining physical order (Ocakcı & Samancı, 2019). In a classroom heated by a stove, even the comfort difference between a student near the stove and one far away affects participation in the lesson. The "quiet and comfortable environment" necessary for listening and reading activities in the Turkish lesson cannot be provided due to physical impossibilities.

Seating Arrangement and Classroom Management:

Having more than one grade in the same space turns the seating arrangement into a strategic decision. Although it is seen in the literature that teachers generally prefer the "U-shape" or "cluster work" arrangement, it is stated that they are forced into the classic "row arrangement" when class sizes are crowded (Ocakcı & Samancı, 2019). The empty space required for activities such as drama, role-playing, or circle time in the Turkish lesson is often not found in narrow classrooms. Different grades using the board is also a problem; dividing the board into two or three weakens visual perception and causes students' attention to drift to the other grade's topic.

Insufficiency of Materials and Resources:

Turkish teaching requires a rich stimulating environment. A classroom library, level-appropriate reading books, visual materials, and technological tools (projectors, smart boards) are the foundation of this richness. However, research emphasizes that these materials, especially resources necessary for students' individual work (independent study hours), are extremely insufficient in multigrade classes (Dursun, 2006; Kılıç & Abay, 2009). The use of textbooks prepared for monograde classes in multigrade classes leads to content and duration incompatibility. For instance, the lack of modular sets specifically structured for multigrade classes, where the student can progress on their own without needing the teacher, is the biggest factor causing independent study hours to pass inefficiently.

Initial Literacy Teaching: Method, Process, and Conflict

The most critical, most problematic process that challenges the teacher the most in multigrade classes is undoubtedly the initial literacy teaching for 1st-grade students. The Sound-Based Sentence Method (SBSM), adopted in 2005 and revised in 2017, experiences serious incompatibilities with the nature of multigrade classes.

Table 1: Disadvantages of the Sound-Based Sentence Method in Multigrade Classes

Problem Area	Explanation and Effects
Lack of One-on-One Attention	SBSM requires the teacher to check whether every student produces the sound correctly. However, while the teacher gives sound to 1st graders, they must wait for other grades (2, 3, 4) to work silently. This divided attention leads to sounds being learned incorrectly or not being reinforced (Avcı & Şahin, 2016; Sınmaz, 2009).
Eye-Voice Coordination	The method requires intensive use of visual and auditory stimuli. However, the inability to present sounds in a digital environment due to technological inadequacies increases the teacher's burden.
Parental Support and Confusion	Parents in rural areas usually know the old "Sentence Method" or "Alphabet Method." Parents practicing at home by adding the "e" sound next to consonants (saying "buh" instead of "b") contradicts what the child learns at school (the "b" sound) and creates confusion (Avcı & Şahin, 2016).
Cursive Writing Trauma	*(Past period finding)* During the mandatory cursive writing period, multigrade class students could not find the opportunity to understand what they read due to dealing with the mechanics of writing. It is a common problem that students cannot read their own writing (Avcı & Şahin, 2016).

Reading Speed and Comprehension Problem:

Research shows that students learning literacy in multigrade classes have difficulty in blending sounds and passing the spelling stage. Avcı and Şahin's (2016) study revealed that all teachers think students are insufficient in reading comprehension and cannot read fluently. Teaching words by breaking them down (sound-syllable) in the sound-based method can delay holistic perception, which slows down the transition to meaningful reading. Especially, a student spelling incorrectly during "teacher-less" hours cannot be corrected instantly by the teacher, causing the error to become permanent (fossilization) (Avcı & Şahin, 2016).

Management of Independent Study and Teacher-Led Hours: A Pendulum Movement

The backbone of multigrade class management consists of the distinction between "Independent Study Hours" (the teacher attends to another group; the student works individually) and "Teacher-Led Hours" (the teacher actively lectures). The Turkish lesson is generally structured in the curriculum as a lesson that needs to be "teacher-led"; however, in practice, holding a separate 40-minute Turkish lesson for each grade in an environment where four grades are together is mathematically impossible.

The Perception of Independent Study Hours as "Free Period"

Teachers generally teach the Turkish lesson in blocks, assigning silent reading, summarizing, or worksheet filling tasks to other groups while working on reading aloud or grammar with one group. However, findings by Sınmaz (2009) and other researchers indicate that independent study hours are perceived by students as "free periods." Students in the independent study group listen to the lesson in the teacher-led group, get distracted, or start talking amongst themselves. This situation causes a constant hum in the classroom and destroys the listening discipline required by the Turkish lesson (Dursun, 2006).

Planning and Time Management

Teachers' biggest nightmare is the anxiety of "not finding enough time." Trying to impart the Turkish learning outcomes of four different grades in a 40-minute lesson turns the teacher into a "traffic cop." Although teachers try to combine topics while making lesson plans (e.g., covering the "National Holidays" theme for all grades), this is not always possible because the depth and difficulty level of learning outcomes differ between grades (Coşkun, 2018; Kılıç & Abay, 2009). Consequently, teachers usually tend to just "explain the topic and move on," unable to allocate time for in-depth analysis, discussion, and critical thinking activities.

Teacher Competence, Perception, and Metaphors

The most important actor determining the quality of education in multigrade classes is the teacher. However, due to the appointment system in Türkiye, newly graduated, inexperienced teachers who are strangers to rural life culture are generally appointed to this challenging duty.

Inadequacy of Faculties of Education

Teachers state that the "Teaching in Multigrade Classes" course taken during their undergraduate education remains theoretical, and internships are usually done in monograde classes in city centers. The teacher who graduates and is appointed to a village experiences a shock like a "fish out of water" (Dursun, 2006; Kılıç & Abay, 2009). Even if they know the Turkish teaching methodology, they do not have a practical repertoire on how to apply this to four different levels simultaneously.

Metaphorical Perceptions: Gardener or Warrior?

Metaphor studies examining teachers' perceptions of multigrade classes reveal the psychological process experienced. Teachers see themselves as;

- Gardener: A patient and caring person trying to grow different types of flowers (students) in the same garden (Arslan, 2013).
- Parent: A protective figure who not only teaches but also combs hair, lights the stove, and finds winter coats.
- Warrior: A person fighting against impossibilities, indifferent parents, and physical difficulties.
- Conductor: A person trying to manage different voices (grades) in harmony.

These metaphors show that the teacher's role shifts from "instruction" to "care and management." This role confusion weakens the teacher's academic focus and causes burnout (Yılmaz et al., 2024). The administrative burden brought by being a "Principal-Teacher" (official correspondence, fuel purchase, building maintenance) distracts the teacher from their main job, education.

Student Achievement: Contradictory Findings

There is an interesting dilemma in the literature regarding the success of multigrade class students in Turkish lessons.

Quantitative Data

Some researchers, such as Coşkun (2018), did not find a statistically significant difference between the reading comprehension skills of 1st-grade students studying in monograde and multigrade classes in measurements made with standard tests (Coşkun & Çetinkaya, 2018). This situation may indicate that the low class size of multigrade classes allows the teacher to deal with the student more individually (even for a short time) or the positive effects of "peer teaching" (older students helping younger ones).

Qualitative Views

In contrast, almost all studies based on teacher views and observations argue that multigrade class students are academically disadvantaged. Teachers state that students have a limited vocabulary, act shy in expressing themselves, and experience problems in using standard Turkish (Coşkun, 2018; Kılıç & Abay, 2009). especially in regions where local dialects are dominant, the inability to practice sufficient Turkish at school negatively affects language development. A study on bilingual multigrade classes in France also confirms that heterogeneous language levels make teaching difficult and slow down linguistic development (Gülden, Akıncı, & Kaplan, 2023).

Discussion

The findings obtained in this report show that the problems faced by Turkish teaching in multigrade classes are not "incidental" but "structural." The problem is not just the stove not burning or the lack of books, but the way the system is designed.

Rigidity of the Program and Incompatibility:

The current primary school curriculum is based on a linear progression assumption where grade levels are separated by sharp lines. However, the nature of the multigrade class is cyclical and intertwined. A 3rd-grade student can listen to the 2nd-grade Turkish lesson again or be introduced to advanced concepts by overhearing the 4th-grade lesson. Instead of using this "permeability" as an advantage, the current system drags the teacher into chaos by forcing them to deliver the outcomes of each grade separately and in isolation. The demand for a "flexible program specific to multigrade classes," frequently voiced in the literature (Dursun, 2006), is the clearest indicator of this incompatibility.

Unused Potential of Peer Teaching:

Multigrade classes are a natural laboratory for Vygotsky's "Zone of Proximal Development" (ZPD) theory. A more competent peer (upper grade) guiding a peer in need of support (lower grade) could be the system's strongest weapon. However, findings show that teachers use this potential pragmatically and unplanned, often as "making the upper-grade student a teacher's assistant so they don't stay idle," rather than as a conscious and systematic strategy. Controlled peer readings in Turkish lessons can transform this potential into efficiency.

Technology and Inequality of Opportunity:

The digital divide is deepening in rural education. While the importance of visual and auditory materials in Turkish teaching increases, the lack of technological infrastructure in multigrade classes reinforces inequality of opportunity. Despite the existence of digital platforms like EBA (Education Information Network), these resources cannot be used in village schools without internet access, and the teacher tries to implement the modern curriculum with a blackboard and chalk.

Conclusion and Recommendations

Due to Türkiye's geographical reality, multigrade classes will not disappear completely in the near future. Therefore, the strategy should be built on "improving" and "transforming" these schools, not "closing" or "ignoring" them. Turkish teaching must be at the center of this improvement, because success in other courses is not possible without acquiring language skills.

Policy and Program Level Recommendations

- Flexible and Modular Turkish Program: A spiral and modular curriculum should be prepared for multigrade classes where learning outcomes are structured according to skill levels (Level A, Level B, Level C) rather than grade levels (1, 2, 3, 4). In this way, the teacher can teach more efficiently by grouping students according to reading levels, not their ages.

- Production of Special Materials for Independent Study Hours: To increase the efficiency of independent study hours in multigrade classes, the MoNE should prepare and distribute "Individual Learning Materials" and sets with clear instructions and self-assessment opportunities, allowing the student to work independently without needing the teacher.

Teacher Training and Support Recommendations

- Applied Village Internship: Courses such as "Alternative Education Practices in Primary School" or "Teaching in Multigrade Classes" in faculties of education should be moved away from theory, and it should be made mandatory for teacher candidates to do an internship in a village school with multigrade classes for at least one semester.

- Positive Discrimination for Village Teachers: Financial incentives, service point advantages, and housing support should be provided to teachers working in these difficult conditions to increase their professional satisfaction. Additionally, the administrative burden of "Principal-Teachers" should be reduced, and stationery and bureaucratic procedures should be digitized or carried out from the district center to ensure the teacher focuses on the lesson.

School and Classroom Implementation Recommendations

- Technological Equipment Mobilization: Every multigrade class must be provided with internet access (satellite internet if necessary) and a projector/smart board. The use of digital content in sound-based literacy teaching will reduce the teacher's burden by half.

- Structured Peer Teaching: In-service training should be given to teachers on how to transform peer teaching into a scientific method. Systems where upper grades will act as "reading coaches" to lower grades (e.g., Reading Buddy hour) should be integrated into the curriculum in Turkish lessons.

Turkish teaching in multigrade classes is a strategic issue that cannot be left to the individual sacrifice of the teacher. Every improvement step taken in these schools will increase the chance of the country's most disadvantaged children holding on to life.

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References

Arslan, S. (2013). Birleştirilmiş Sınıflarda Görev Yapan Öğretmenlerin "Öğretmen" Kavramı İle İlgili Algılarının Metaforik İncelenmesi. *Turkish Studies*, 8(6), 43-59. https://turkishstudies.net/turkishstudies?mod=makale_tr_ozet&makale_id=16267

Avcı, Y. E., & Şahin, M. (2016). Ses Temelli Okuma-Yazma Öğretiminde Sınıf Öğretmenlerinin Karşılaştıkları Problemler. *Sosyal Bilimler Enstitüsü Dergisi*, (6-7), 1-15. https://dergipark.org.tr/tr/download/article-file/266289

Coşkun, M. (2018). *Birleştirilmiş sınıflarda ve müstakil sınıflarda öğrenim gören 1. sınıf öğrencilerinin okuduğunu anlama becerisinin değerlendirilmesi* (Yüksek Lisans Tezi). Ordu Üniversitesi, Sosyal Bilimler Enstitüsü. https://earsiv.odu.edu.tr/jspui/bitstream/11489/295/1/10183334.pdf.pdf

Coşkun, M., & Çetinkaya, S. (2018). Birleştirilmiş Sınıflarda ve Müstakil Sınıflarda Öğrenim Gören 1. Sınıf Öğrencilerinin Okuduğunu Anlama Becerisinin Değerlendirilmesi. *Ana Dili Eğitimi Dergisi*, 6(4), 987-1002. https://search.trdizin.gov.tr/tr/yayin/detay/359610

Dursun, F. (2006). Birleştirilmiş Sınıflarda Eğitim Sorunları ve Çözüm Önerileri. *Sosyal Bilimler Araştırmaları Dergisi*, 2, 33-57. https://dergipark.org.tr/tr/download/article-file/801739

Gülden, B., Akıncı, M. A., & Kaplan, K. (2023). Fransa'daki İki Dilli Öğrencilerin Türkçe Derslerindeki Çok Düzeyli Birleştirilmiş Sınıf Uygulaması Hakkında Öğretmen Görüşleri. *Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi*, 5(Özel Sayı), 332-358. https://dergipark.org.tr/tr/pub/neueefd/issue/80589/1350154

Kılıç, D., & Abay, S. (2009). Birleştirilmiş Sınıf Uygulamasında Öğretmenlerin Öğrenme-Öğretme Sürecinde Karşılaştığı Problemlere İlişkin Görüşleri. *Türk Eğitim Bilimleri Dergisi*, 7(3), 623-654. https://dergipark.org.tr/tr/pub/tebd/issue/26108/275074

Ocakcı, E., & Samancı, O. (2019). Birleştirilmiş sınıf öğretmenlerinin sınıf yönetimi yeterliliklerinin ve sınıf yönetimi ile ilgili görüşlerinin incelenmesi. *Elektronik Sosyal Bilimler Dergisi*, 18(70). https://dergipark.org.tr/tr/download/article-file/749882

Sınmaz, A. G. (2009). *Birleştirilmiş Sınıf Öğretmenlerinin Yeni İlköğretim Programının Uygulanmasına İlişkin Görüşlerinin Değerlendirilmesi* (Yüksek Lisans Tezi). Abant İzzet Baysal Üniversitesi.

Yılmaz, M., Yüksel, R., & Çoban, A. (2024). Birleştirilmiş Sınıfta Eğitimi Konu Alan Araştırmaların İçerik Analizi. *Türkiye Bilimsel Araştırmalar Dergisi*, 9(1), 101-116. https://dergipark.org.tr/tr/pub/tubad/issue/84930/1375752