Evaluation of Uncertainty Experienced in Schools Within the Context of School Objectives[1]

Emine Doğan[2], Ruhi Sarpkaya[3]

Abstract

This study examines the uncertainties encountered in schools within the framework of school objectives, focusing on their implications for educational processes. Acknowledging that uncertainty is a pervasive phenomenon in schools, the research explores how school objectives can both mitigate and clarify these ambiguities. Using a qualitative research design, data were gathered from school administrators and teachers in primary and secondary schools located in the Efeler district of Aydın province. Semi-structured interviews provided in-depth insights, which were subsequently analyzed using content analysis. The findings reveal that uncertainties often disrupt motivation, performance, and the overall functioning of educational institutions. Recommendations for effectively addressing these challenges were proposed, emphasizing proactive strategies for uncertainty management.

This study contributes to literature by highlighting the interplay between school objectives and uncertainty, offering a practical framework for improving educational practices in uncertain conditions. It addresses a critical gap by identifying actionable strategies for educational stakeholders, ensuring resilience and adaptability in the face of uncertainties.

Keywords: Uncertainty, School objectives, educational processes, stakeholder strategies, resilience in schools.

Introduction

Indecision is occasionally observed in individuals, society, organizations, and even nature itself. Every situation where indecision is observed carries an inherent uncertainty. In general terms, uncertainty refers to ambiguity, unpredictability, the unknown, or the unclear, and encompasses conditions that are variable and contradictory depending on circumstances. On the other hand, in today's world of constant data flow, it can be said change has become the 'normal' state. Individuals, organizations, and even societies can maintain their existence as long as they adapt to change and keep pace with its speed. In this context, uncertainty in schools is accepted as an indispensable part of the educational process.

Studies on the role and effects of uncertainty show it has significant impacts on students, teachers, and school administrators. How uncertainty acts as a catalyst, especially in creativity and learning processes, reveals why managing uncertainties in education is so critical (Beghetto & Jaeger, 2022). It is stated

---

that uncertainty in education helps students develop problem-solving and critical thinking skills, while also providing opportunities for teachers to renew their pedagogical approaches (Vavrus, 2021). However, if these uncertainties are not managed, serious disruptions and motivational losses can be experienced in educational processes (Schuck et al., 2018). Therefore, effective handling of uncertainties in educational management plays a critical role in improving the performance of both students and teachers and the overall quality of education (Ng, 2013).

While existing studies provide valuable insights into the general impact of uncertainty, there is a gap in exploring how school objectives can serve as both a framework for mitigating uncertainty and a driver for achieving stability in uncertain contexts. This study seeks to address this gap by examining the relationship between school objectives and uncertainty, contributing to a more nuanced understanding of how uncertainties can be effectively managed in educational settings.

The theoretical significance of this study lies in its attempt to integrate uncertainty management theories with the practical realities of educational administration, thereby providing a robust conceptual framework. Practically, it offers evidence-based strategies for school leaders and policymakers, emphasizing proactive measures that align with school objectives to manage uncertainties effectively. By bridging this gap, the study enhances our understanding of uncertainty within the context of school objectives and contributes actionable insights to both the academic literature and practical applications.

This article aims to examine how uncertainties in schools can be evaluated in the context of school goals and their effects on educational processes, thereby contributing to the literature by highlighting new perspectives on managing uncertainty in education. By addressing the interplay between uncertainty and school objectives, this study provides an original framework that not only fills a critical gap in existing research but also offers innovative strategies for practical application in educational management.

Literature Review

The Concept of Uncertainty and Uncertainty in Schools

Uncertainty is generally defined in various ways. Berger and Calabrese (1975) define uncertainty as the number of alternative predictions a person has in predicting the future behaviors of others or explaining past behaviors. Bradac (2001) considers uncertainty as the unpredictability of an environment or a task. Lamnina and Chase (2019) define uncertainty as a subjective experience of an individual doubting, being unsure, or wondering about how the future will shape, what the present means, or how to interpret the past. Gard and Wright (2001) address uncertainty as the inability to predict the outcome of events in the environment. These definitions show uncertainty is associated with unpredictability, complexity, and lack of information.

Uncertainties in schools are generally related to external factors such as sudden changes in education policies, economic conditions, and social dynamics. These uncertainties can negatively affect the motivation and performance of students and teachers (Vavrus, 2021). Kraft et al. (2015) define uncertainty in school as a continuous situation arising from the diversity of students and the academic and social needs they bring. Hameiri et al. (2014) consider uncertainty in school as the situation where school principals and teachers cannot predict the consequences of decisions and the effects of events. Munthe (2001) associates uncertainties in teaching with the absence of concrete models to imitate, ambiguity of effect lines, multiple and controversial criteria, uncertainty in evaluation timing, and indecision in the product. These definitions show uncertainty in schools has a multidimensional and complex structure, stemming from variability in student needs, decision-making processes, and teaching practices.

Uncertainty from a Theoretical Perspective

School administrators, teachers and students are faced with various uncertainties and managing these uncertainties effectively is critical to the success of educational processes. The following uncertainty theories offer important insights into understanding and managing these uncertainties. This theoretical

framework emphasizes uncertainty is not only a situation which needs to be reduced but also a complex phenomenon which needs to be managed and sometimes sustained.

Uncertainty Reduction Theory

Uncertainty Reduction Theory, developed by Berger and Calabrese (1975), suggests individuals have a natural tendency to reduce uncertainty. This theory argues that especially in initial interactions, people try to reduce uncertainty by trying to obtain information about each other. Accordingly, as uncertainty increases, the amount of communication also increases, and as uncertainty decreases, communication becomes more intimate and open. This theory is especially used in communication and decision-making processes. In schools, when teachers and administrators encounter uncertainty, they try to reduce this uncertainty through gathering and analyzing information. For example, pilot applications can be made to reduce uncertainty about the results of a new educational program, and decisions can be made by analyzing the data obtained in this process. However, such efforts often assume that sufficient resources, expertise, and time are readily available, which may not always be the case in under-resourced schools. Furthermore, the focus on reducing uncertainty might inadvertently discourage adaptive thinking or innovative problem-solving, which can be critical in dynamic and unpredictable educational environments.

Problematic Integration Theory

Babrow's (1992) Problematic Integration Theory addresses the conflicts individuals experience between various expectations and perceptions and suggests uncertainty is not only a situation which needs to be reduced, but also includes the complex relationship between probability assessments and the evaluation of the objects of these assessments. This theory emphasizes the multidimensional and dynamic nature of uncertainty and argues uncertainty may not always be negative. In schools, teachers and students may have various expectations and perceptions about the outcomes of educational policies and practices. Conflicts between these expectations and perceptions can increase the sense of uncertainty. For example, differing views among teachers on whether educational reforms will be successful can create uncertainty in schools. However, the theory offers limited practical strategies for resolving these conflicts, which can exacerbate divisions among stakeholders. Additionally, it does not fully address how these uncertainties might be leveraged as opportunities for constructive dialogue and innovation.

Uncertainty Management Theory

Brashers' (2001) Uncertainty Management Theory suggests individuals not only try to reduce uncertainty but may sometimes try to increase or maintain it. This theory emphasizes the complex nature of uncertainty, and the various strategies individuals use to cope with uncertainty. The theory, which has important applications especially in the field of health communication, also states uncertainty can sometimes be a source of hope and optimism. In school context, teachers and administrators can create flexible plans and alternative scenarios to cope with uncertainty. For example, emergency plans that will come into play in cases of unexpected events are among these strategies. However, the theory's broad focus on uncertainty management lacks specific guidance for prioritizing strategies in resource-constrained educational settings. Furthermore, it does not sufficiently address the potential risks of maintaining uncertainty, which may lead to prolonged inaction or stakeholder confusion in critical decision-making processes.

Risk Society and Uncertainty

Beck's (1992) concept of Risk Society emphasizes the increasing role of uncertainty in modern societies. This approach suggests technological and scientific advances create new risks and uncertainties, and it affects social structures. In educational contexts, this approach can be used to understand the uncertainties in the process of schools adapting to changing social conditions (Gard & Wright, 2001). In the school environment, the adaptation of technology to education and the effects of global education policies can bring uncertainties and risks. Teachers and administrators should focus on continuous learning and adaptation to new situations to manage these uncertainties and risks.

When the issue of uncertainty in schools is evaluated, it appears as a complex and multidimensional phenomenon. Educational institutions operate under constantly changing social, technological, and political conditions, and this may lead to uncertainties. Schools need to learn to manage these uncertainties effectively rather than trying to reduce them while realizing their goals. In this context, an approach considering the potential positive aspects of uncertainty and developing various management strategies can increase schools' capacity to adapt to changing conditions and provide effective education However, the emphasis on adaptation and management often overlooks the unequal access to resources and technology among schools, which can exacerbate existing inequalities. Furthermore, the approach does not adequately consider how systemic and institutional constraints may limit the ability of schools to adapt, particularly in underprivileged or resource-scarce settings.

Types of Uncertainty

There are different types of uncertainty that express unpredictable situations and results, and each emerges in a different context. Milliken (1987) defines uncertainty as the inability of individuals to accurately predict future events and there are three types of uncertainty: state uncertainty, effect uncertainty, and response uncertainty. State uncertainty is the inability to predict how environmental factors will change; effect uncertainty is the inability to predict the impact of an event on the organization; and response uncertainty is the inability to know the consequences of the organization's response options to current conditions. School administrators can develop appropriate strategies and minimize the negative effects of uncertainty by identifying these types of uncertainty.

Another classification was made by Courtney et al. (1997), and accordingly, there are four types of uncertainty: clear uncertainties, alternative uncertainties, range uncertainties, and complete uncertainty. Clear uncertainties are situations where future outcomes are known but probabilities are unknown. Alternative uncertainties are situations where outcomes are certain, but probabilities are uncertain. Range uncertainties are situations where the outcome range is known but the probability of a specific outcome is unknown. Complete uncertainty is where neither outcomes nor probabilities are known.

This classification of uncertainty types provides a foundational framework for aligning uncertainty management strategies with school objectives, thereby directly contributing to the study's aim of exploring how uncertainties impact educational processes and identifying effective methods to address these challenges within the context of organizational goals.

Causes of Uncertainty

Uncertainty can arise from various sources in educational processes and can have significant effects on school management, teachers, and students. Economic and political factors are among the main causes of uncertainties in education. In Tanzania's education system, economic inequalities, policy changes, and inadequate educational infrastructure lead to uncertainties. Sudden policy changes can make it difficult for students and teachers to adapt to these changes and negatively affect the educational process (Vavrus, 2021, pp. 8-9). Technological changes are also important sources of uncertainties in education. While the integration of technology into education creates opportunities, it also causes uncertainties. The rapid incorporation of technological innovations into educational processes requires teachers to adapt to these innovations, which can create uncertainty and stress among teachers (Schuck et al., 2018).

Social and cultural dynamics are among other causes of uncertainties. The effects of globalization on education erode traditional systems of meaning and method, leading to uncertainties. Social factors such as gender roles and family structures affect the uncertainties students face in their educational processes (Carney & Madsen, 2021). Structural problems of the education system are also an important source of uncertainties. In Singapore, the uncertainties faced by school leaders are associated with factors such as the rapidly developing knowledge economy, technological advances, and increasing complexity of ways of doing business. These structural problems complicate the decision-making processes of school leaders and teachers, increasing uncertainties (Ng, 2013). Performance evaluation systems are another cause of uncertainties. The reliance on qualitative judgments in technologies used

to evaluate teachers' performances leads them to constantly question their performance. This situation can negatively affect teachers' job satisfaction and motivation (Englund & Frostenson, 2017).

Moles (2018), on the other hand, classified the three main causes of uncertainty as innovation, complexity, and insolubility. While innovation refers to the difficulties and variability in defining concepts; complexity encompasses situations where experimentation and observation are not possible. Insolubility emphasizes the inherent uncertainty of certain phenomena. In educational organizations, the integration of technological innovations into the curriculum, the abstraction of educational objectives and the ambiguous nature of the concept of management can be given as examples of these reasons. To cope with uncertainty, it is important to conceptualize facts according to consistent laws of thought and reason, rather than confining them within strict limits.

Consequences of Uncertainty

The consequences of uncertainty in schools have profound effects on all components of the educational process. Uncertainty can affect students' motivation, teachers' performance, and the overall functioning of schools. Beghetto and Jaeger (2022) address uncertainty can stimulate creative thought processes and function as an important catalyst in education, but at the same time, an appropriate amount of uncertainty is needed to support motivation and curiosity, and excessive uncertainty can negatively affect learning processes and increase stress levels.

Vavrus (2021) states uncertainty in education is often confused with danger, risk, and misfortune, and this new approach suggests uncertainty can play a productive role in thinking about the future. He emphasizes sudden changes in education policies and inadequate planning increase uncertainties. Ng (2013) discusses the methods of school leaders in coping with uncertainties. Factors such as the rapidly changing knowledge economy, technological advances, and the complexity of ways of doing business were among the main causes of uncertainties, and it was stated school leaders need skills such as foreseeing the future, understanding the context, adapting, and collaborating to cope with uncertainties.

Herzig and Jimmieson (2006) stated uncertainty is an important source of stress for managers in organizational change processes, but it can sometimes be preferable since it offers hope for a positive outcome. Uncertainty management theory argues that not every uncertainty is negative and that sometimes increasing uncertainty can be more beneficial (Herzig & Jimmieson, 2006; Karagül, 2011; Sarı & Dağ, 2009).

The consequences of uncertainty are complex and multidimensional. While functioning as a catalyst that stimulates creative thinking and problem-solving skills on the one hand, excessive uncertainty can cause stress and loss of motivation on the other. The consistency and predictability of education policies are critical to reducing the negative effects of uncertainty. School leaders and teachers can create more positive educational environments by developing strategies to cope with uncertainty. One key strategy for achieving long-term success in education is to manage uncertainty and use it as an opportunity for learning and growth. The findings on the consequences of uncertainty can guide school leaders and policymakers in designing strategies that balance the positive and negative aspects of uncertainty. By fostering a stable yet adaptable environment, schools can use uncertainty as a catalyst for innovation and growth while implementing consistent policies and proactive planning to mitigate its adverse effects on stakeholders' motivation and performance.

School Objectives and Uncertainty

Providing equal opportunities in education, supporting individuals to use their abilities at the highest level, and instilling democratic values can be counted among the objectives of the school (Sergiovanni, 2009). Cunningham and Cordeiro (2013) argue that schools should develop various strategies to maximize students' individual potential. These strategies include developing students' critical thinking skills, imparting social skills, and instilling moral values. Additionally, according to Banks (2015), schools have social responsibilities such as ensuring social equality and increasing equal opportunities. Darling-Hammond et al. (2020) emphasize modern schools aim to raise versatile individuals equipped with the necessary 21st century skills.

The structure and objectives of the school as an educational organization can be more successfully realized through effective management of uncertainties. The flexibility of the school's organizational structure, rapid adaptation to uncertainties, and cooperation among stakeholders are the key elements of this process (Hoy & Miskel, 2013; Sergiovanni, 2009). One of the basic objectives of schools is to prepare students for future uncertain conditions. Fullan (2020) proposes the concept of "change agility" in this context. Schools should not only transfer knowledge to students but also equip them with skills to cope with uncertainty. This involves developing critical thinking, problem-solving, and adaptation abilities.

Schools are environments where uncertainty is prevalent. Uncertainties encountered in schools can stem from factors such as changes in education policies, student behaviors, teacher performance, budget constraints, and technological developments. These uncertainties complicate the decision-making processes of school administrators and may hinder schools from achieving goals. School leaders should be flexible and adaptable to cope with uncertainty. They should use strategies such as data collection, analysis, and communication with stakeholders to reduce uncertainty (Helsing, 2007). In conclusion, uncertainty is an integral part of schools and can appear in different types. School leaders should adopt a proactive and flexible approach to overcome uncertainty and achieve school goals. Managing uncertainty is a critical skill for effective school management and requires continuous learning and adaptation.

The identification and management of uncertainties are critical for the effectiveness and sustainability of educational organizations. How school administrators and teachers perceive uncertainties and how they cope with these situations are factors that directly affect the success of educational processes. Studies on how uncertainties in education are evaluated within the framework of school objectives will make significant contributions in this field. In accordance with scientific research methods and principles, is the study examines how uncertainties experienced in schools are evaluated by administrators and teachers. The problem statement and sub-problems of the research are as follows:

"How do administrators and teachers evaluate the uncertainties experienced in schools in terms of school objectives?" In this context, answers to the following sub-problems were sought:

1. How do school administrators and teachers define the uncertainties experienced in their schools?

2. What are the factors causing uncertainty in school?

3. How do uncertainties affect the educational organization?

4. What do school administrators and teachers do to cope with uncertainty in their schools?

5. According to school administrators and teachers, what should be done in schools to prevent or manage uncertainty in the context of school objectives?

Method

Research Model

This research was conducted using qualitative research methods to evaluate the uncertainties experienced in schools within the context of school objectives. Qualitative research aims to examine a phenomenon in depth and understand participants' perspectives (Creswell, 2019). In this context, a phenomenological design was preferred. Phenomenological studies are an approach aiming to examine participants' experiences and perceptions in depth (Büyüköztürk et al., 2007; Ersoy, 2019). This approach was deemed appropriate to understand the views of school administrators and teachers on uncertainties experienced in schools.

Study Group

The research was conducted with administrators and teachers working in public primary and secondary schools in the Efeler district of Aydın province during the 2022-2023 academic year. The criterion

sampling technique was used to determine the participants. Accordingly, administrators and teachers with more than five years of professional experience involved in the study. Additionally, efforts were made to ensure maximum diversity by selecting teachers and administrators from different school levels (primary, middle, high school) and with various genders, branches, and seniority. As a result, six administrators and twelve teachers participated.

Data Collection Tools

Data were collected through a semi-structured interview form developed by the researcher and created after obtaining expert opinion. The interview form consists of five basic questions and sub-questions supporting these questions, aiming to understand in depth the experiences and perceptions of participants regarding uncertainties experienced in schools. Prior to its implementation, the tool underwent a piloting phase with a small group of teachers and administrators, allowing for adjustments to improve question clarity and alignment with the research focus. The interviews lasted between 25-40 minutes and were audio-recorded with the participants' permission.

Data Collection Process and Analysis

The obtained data were analyzed through content analysis. The MAXQDA 2020 qualitative data analysis program was used. The analysis included the following stages: (1) importing and organizing the raw data into MAXQDA for systematic analysis, (2) initial coding of data segments using in-vivo and open coding methods to ensure that key themes emerged directly from participants' responses, (3) creation of themes by grouping related codes into broader categories, (4) arrangement of codes and themes into hierarchical structures to clarify relationships between them, and (5) definition and interpretation of findings in relation to the research questions. The coding process was conducted separately by the researcher and the advisor, and discrepancies in coding were discussed and reconciled through iterative consultations to ensure consistency and reliability. This comprehensive approach allowed for a nuanced understanding of the data while maintaining methodological rigor.

Researcher's Role

The researcher took an active role in the data collection and analysis process. The researcher, who conducted the interviews, decoded and analyzed the data, adhered to the principles of objectivity and meticulousness throughout the process.

Validity, Reliability, and Ethical Considerations

Various strategies were used to increase the validity and reliability. Participant confirmation and long-term interaction were provided for credibility. Detailed description was made for transferability. The data collection and analysis processes were explained in detail for consistency. Raw data and analysis notes were kept for confirmability. Necessary permissions were obtained from Aydın ADÜ Educational Research Ethics Committee (Date 22.12.2022, Number: 289137) and Aydın Provincial Directorate of National Education. Participants were informed about the purpose and content of the research, a voluntary participation form was signed, and code names were used to ensure the confidentiality.

Findings

Findings related to the first sub-problem

The following table provides an overview of how administrators and teachers define uncertainty and the types of uncertainties experienced in schools, categorized based on their perspectives.

When examining how school administrators and teachers define uncertainty, it was observed both groups perceive uncertainty as a negative situation. Teachers generally defined uncertainty as chaos, disorder, unknowns, lack of planning, innovations, anxiety and worry; while administrators associated it with lawlessness, insolvability, innovations, changes, inability to foresee, risk and concern. These findings show uncertainty is generally perceived as a negative phenomenon in educational organizations, which parallels Demiral's (2014) study. Demiral stated that school administrators

generally perceive uncertainty situations negatively and this leads to results such as low motivation and feelings of inadequacy.

Table 1

Findings on How Administrators and Teachers Define Uncertainty

Theme	Categories	Sub-categories	
		Teacher Views	**Administrator Views**
Uncertainty	General Uncertainty Definitions	Chaos Disorder Lack of planning/ Not following plans Unknowns New practices Anxiety/ Worry	Lawlessness Changes Inconsistency Inability to see the future Insolvability New practices
	Uncertainties Experienced in Schools	School facilities Physical conditions Social activities Assignments Special circumstances of students/parents Different attitudes of administration	Ambiguity in legislation/regulation expressions Physical and economic conditions of the school Different ideas Incompatible working environment Extraordinary events

Administrators' association of uncertainty with risks and changes reflects their organizational-level responsibilities. This finding is consistent with Milliken's (1987) classification of types of uncertainty and the statement that managers' perception of environmental uncertainty affects organizational responses. Both groups stated that uncertainties within the school stem from various factors such as insufficient material resources, social activities, assignments, and special situations of students and parents. This result shows the sources of uncertainty in schools are multidimensional. Similarly, Mazlum's (2019) study revealed school administrators generally attribute the causes of uncertainty to factors outside their control.

The fact that both groups express the material and physical facilities of the school as uncertainty indicates that the physical conditions of schools negatively reflect on the educational environment. In addition, new practices have been expressed as uncertainty for both groups. This stems from the inadequacy of the preliminary preparation or information process regarding the changes experienced in schools. Furthermore, expressing uncertainty as inability to foresee the future and unknowns suggests that both groups have very little tolerance for uncertainty.

While administrators focus on risk and changes when defining uncertainty, indicating that they focus more on strategic and structural problems in dealing with uncertainty, teachers' emphasis on concepts such as lack of planning and chaos reflects that they focus more on daily operational challenges. This is also evidenced by the fact that administrators have expressed ambiguity in official letters and regulations. As another difference, while teachers draw attention to administrative attitudes, administrators' focus on an incompatible working environment and the presence of different ideas indicates that both groups are looking for uncertainty more on the opposite side. It can be said that the differences point to the diversity in the school's internal roles and responsibilities in strategies for dealing with uncertainty.

Teachers tend to focus on immediate, operational challenges such as planning and administrative attitudes, while administrators emphasize broader, strategic issues like risk and organizational compatibility, reflecting their respective roles in the school environment. These findings underscore the

multidimensional nature of uncertainty in schools and how stakeholders' roles and responsibilities shape their perceptions, aligning with the study's aim of understanding these dynamics comprehensively.

Findings for the second Sub-Problem

The following table summarizes the factors causing uncertainty in schools, categorized based on teacher and administrator perspectives, highlighting system-related, environmental, and organizational causes.

Table 2

Findings on Factors Causing Uncertainty in Schools

Theme	Categories	Subcategories	
		Teacher Views	**Administrator Views**
Causes of Uncertainty	System-Related Causes	Bureaucracy Senior managements System changes Managers' attitude	Implementation of legislation and regulations Bureaucracy Structure and Operation of the System Lack of supervision Lack of Authority of the School Administration
	Environmental (External) Causes	Economic Conditions Political Attitudes Unusual Events	Physical and Economic Conditions Sudden Changes Closure to Change
	In-Organization Causes	Poor School Culture Irresponsibility Failing to Take the Initiative Student-Parent attitude	Reluctance Moving Away from Goals Miscommunication Neglect of duty

Administrators and teachers generally have similar descriptions; they often discuss the systemic causes of uncertainty, usually focusing on bureaucracy and the attitudes of upper management. However, teachers also view the attitudes of school administrators as a cause of uncertainty, indicating that uncertainty starts from the initial steps of management and continues from the top down.

School administrators see their limited authority as a cause of uncertainty, suggesting that upper management does not view school management as fully empowered decision-makers. Teachers' perception of the inability to take initiative as an internal organizational cause of uncertainty also supports this view. Teachers believe that a weak organizational culture is a cause of uncertainty, indicating that they are more affected by the school climate. In contrast, administrators experience uncertainty through objectives and duty negligence, showing that administrators take a more professional and critical view of school operations and stakeholders.

Both school administrators and teachers view the external causes of uncertainty through physical and economic conditions and unusual events. The findings suggest that schools are affected by environmental issues, sudden changes, and economic conditions that negatively impact the educational environment. Communication problems are a common issue identified by both groups, who believe that lack of communication creates uncertainty in the educational environment.

The apparent misalignment between the tasks assigned to educators and the broader educational goals may contribute to a systemic disconnect, potentially increasing feelings of inefficiency and frustration among stakeholders. This disconnect suggests the possibility of a need for clearer communication and improved strategic alignment between policy-level objectives and practical implementations within schools, ensuring that educational goals are more effectively integrated into daily practices. Furthermore, the emphasis on exam statistics rather than holistic educational aims could reflect a narrow accountability framework, which might limit opportunities for fostering creativity, critical thinking, and broader learning outcomes. Addressing these potential issues could help reduce uncertainty and improve coherence in educational practices.

Findings related to the third sub-problem

The following table outlines the effects of uncertainties experienced in schools on the educational organization, categorized based on teacher and administrator perspectives.

Table 3

Findings on the Effects of Uncertainties Experienced in Schools on the Educational Organization

Theme	Categories	Sub-categories	
		Teacher Views	**Administrator Views**
Effects of Uncertainties Experienced in Schools on the Educational Organization	Towards school stakeholders	Lack of motivation	Reluctance
		Waste of time	Inefficient work
		Future anxiety	Disruption/postponement of work
		Unplanned work	Developing negative attitudes towards school
	Towards school climate	Creating pressure and stress	Creating pressure and stress
		Insecurity	Leading to unpredictability
		Interpersonal conflict	Negative attitude towards management
	Towards educational goals	Disrupting plans	Making effective management difficult
		Ignoring goals	Hindering achievement of goals
		Deviating from goals	Activities becoming dysfunctional

Teacher participants generally focused on the effects of uncertainty on the work environment and their own psychology, while administrators focused more on the effects on schoolwork and operations. The administrators' emphasis on inefficient work and decreased trust in the system shows that they focus more on strategic and systemic problems in dealing with uncertainty, while teachers' emphasis on anxiety and motivation concepts shows that they focus on the psychological aspect of the issue. This difference may indicate that administrators and teachers have different perspectives on approaching problems and their solutions in the educational environment. This contrast underscores the need for targeted interventions that address both psychological and systemic aspects of uncertainty, ensuring comprehensive strategies that reflect the perspectives of all stakeholders.

In terms of school climate, teachers often described uncertainty as a source of stress and insecurity, which they perceived through their interactions and emotional responses. Administrators, however,

viewed uncertainty in terms of how it affects broader relationships within the school, including the attitudes of other stakeholders toward management. This indicates that administrators may feel more accountable for school-wide outcomes and are therefore more attuned to external perceptions and systemic pressures. Both groups think that many of the tasks requested from them do not go beyond workload and remain on paper. Their statement that the basic goals of education are included in the plans, but what is expected and requested from the school at the end of the year are exam statistics reveals that the basic goals and principles are ignored in in-class and extracurricular activities in schools, and that they are moving away from school goals. This situation also reveals the relationship between the dysfunctionalities of the activities, ignoring the objectives and not achieving the objectives. This disconnect suggests a pressing need to realign accountability measures with the core educational objectives, ensuring that both in-class and extracurricular activities contribute meaningfully to broader learning outcomes. Addressing this issue may also require structural changes in policy and evaluation systems to better reflect the diverse aims of education.

Findings related to the fourth sub-problem.

The following table highlights the methods employed by school administrators and teachers to cope with uncertainty in their schools, categorized by individual and organizational attitudes from both perspectives.

Table 4

Findings on How School Administrators and Teachers Cope with Uncertainty in Their Schools

Theme	Categories	Sub-categories	
		Teacher Views	**Administrator Views**
Methods of School Administrators and Teachers to Cope with Uncertainty in Their Schools	Teachers — Individual attitude	Stay calm To be solution-oriented Be flexible	Taking the initiative Postpone Positive thinking
	Teachers — Organizational attitude	Teamwork Keeping communication strong Focusing on the problem	Acting as a group Considering other opinions Being solution-oriented
	Administrators — Individual attitude	Taking risks Communicate effectively Leave it to time	Approaching with a sense of duty Act calmly
	Administrators — Organizational attitude	Providing an environment of trust Focus on the solution Get feedback Looking at past applications	Keeping communication strong Exchanging ideas Looking at similar apps

While teachers see themselves as more solution-oriented and close to a solution by staying calm, they think administrators are trying to cope with uncertainty by leaving it to time. The fact that the administrators think that they solve the problem by approaching them with a sense of duty, while the teachers think that they postpone the problem and wait for it to be solved by others, which shows both groups see the other side as more passive from time to time.

From an organizational point of view, both parties state that teamwork, acting together and establishing strong communication solve uncertainty more easily. The fact that people act as a group in the face of uncertainty stems from the fact that they do not want to take risks individually and that they think that

coping with possible negativities together will cause less stress. Even if the problem is not solved, it can be said that enduring difficult conditions together makes people feel more secure and comfortable. This observation suggests that fostering a culture of collaboration and mutual support within schools can serve as a critical buffer against the negative effects of uncertainty. Building trust among stakeholders and encouraging shared responsibility may further enhance the capacity of school communities to navigate complex and unpredictable challenges effectively.

Findings related to the fifth sub-problem

The following table presents suggestions for preventing and managing uncertainty in schools, categorized by perspectives from teachers, administrators, and other stakeholders, focusing on the educational environment, teachers, school management, senior management (MoNE), and parents.

Table 5

Findings on What Should Be Done to Prevent and Manage Uncertainty in Schools

Theme	Categories	Sub-categories	
		Teacher Views	**Administrator Views**
What Needs to Be Done to Prevent and Manage Uncertainty in Schools	Oriented to the educational environment	Strong communication Improvement of physical conditions Control	Ensuring harmony in the school climate Using effective communication skills Equal opportunity
	For teachers	Setting goals Not deviating from educational objectives	Acting in a planned manner Demonstrate determination in achieving the goals
	For school management	Getting everyone's opinion Being open to change Taking risks	Dominating the regulation Expanding jurisdiction Giving importance to cooperation
	For MEB/ Senior management	Stability Seeking the opinion of subordinates	Clarifying legislation Commitment to goals Control
	For Parents	Collaborating Open communication	Ensuring belonging to the school Joint decision-making An environment of trust

When examining the suggestions for the educational environment, it is seen that many educational institutions still do not have the desired physical facilities, and as a requirement of equal opportunity in education, the basic needs of schools should be met as a priority. Looking at the suggestions for teachers, although all educational stakeholders make all their plans in line with the basic aims and principles, they encounter situations where plans are disrupted or determination is not shown in goals during the process.

In suggestions for school management, teachers suggested that managers should have the ability to take risks and be more open to change and act decisively, while managers suggested expanding their areas of authority.

Looking at the suggestions for MoNE/other upper management, getting the opinions of lower units and making official correspondence and regulations clear are at the forefront. Since educational organizations have a hierarchical structure descending from the ministry level to schools and even

classrooms, it has been addressed that the planning and instructions sent from the upper unit should be clear and precise enough for all schools to receive and implement the same message.

In suggestions for other stakeholders, especially maintaining strong communication with parents and increasing commitment to the school were emphasized. According to the participants, when there are students and parents who embrace the school and trust the school stakeholders, even if there are uncertain situations in the process, they can be overcome easily.

Discussion, Conclusion, And Suggestions

Within the scope of the *first sub-problem of* the research, it was observed that both groups perceived uncertainty as a negative situation. While teachers generally defined uncertainty as chaos, disorder, unknowns, lack of planning, innovations, anxiety, and concern; administrators associated it with concepts such as lawlessness, lack of solutions, innovations, changes, inability to foresee, risk, and concern. These findings indicate uncertainty is generally perceived as a negative phenomenon in educational organizations which parallels with Demiral's (2014) study. Demiral stated that school administrators generally perceive uncertainty situations negatively and this leads to consequences such as low motivation and feelings of inadequacy.

The fact that administrators associate uncertainty with risks and changes reflects their responsibilities at the organizational level. This finding is consistent with Milliken's (1987) classification of uncertainty types and the statement that managers' perceptions of environmental uncertainty affect organizational responses. Both groups stated that uncertainties within the school stem from various factors such as insufficient material resources, social activities, assignments, and special circumstances of students and parents. This result demonstrates the sources of uncertainty in schools are multidimensional. Similarly, Mazlum's (2019) study revealed school administrators generally attribute the causes of uncertainty to factors beyond their control.

Findings related to the *second sub-problem of the research* reveal three main categories of factors causing uncertainty in schools: system-related causes, internal organizational causes, and environmental (external) causes. These results demonstrate the multidimensional and complex structure of uncertainty in educational organizations. Among the system-related causes, bureaucracy, lack of supervision, sudden system changes, and administrators' attitudes stand out. These findings align with the results of Töremen's (2002) study on barriers to change in educational organizations. Töremen emphasized that unprepared and inadequately planned changes lead to uncertainty. Moreover, findings regarding the limited authority of administrators parallel the results of Turan et al.'s (2010) research on decentralization in education. This situation suggests that the centralized education system restricts decision-making processes at the school level and sets the stage for uncertainties.

Environmental (external) causes include physical and economic conditions, political attitudes, and extraordinary events. These findings coincide with Milliken's (1987) study on organizational uncertainty. Milliken stated environmental uncertainty affects organizations' decision-making processes. Particularly frequent changes in education policies and economic uncertainties make it difficult for schools to make long-term plans. At this point, stability in education policies and increasing the financial autonomy of schools may be effective in reducing uncertainties.

Findings on the inadequacy of physical and economic conditions parallel the results of Bilgin and Erbuğ's (2021) study on inequality of opportunity in education. Physical and economic differences among schools lead to inequality of opportunity in education and consequently to uncertainties. To improve this, a fair and needs-based approach should be adopted in resource allocation to schools. In this context, the uncertainty environment created by the combination of systemic, organizational, and environmental factors significantly affects the functioning of educational organizations. Therefore, a holistic approach should be adopted to reduce and manage uncertainty, with improvements made at every stage from the system level to in-school practices. Increasing school autonomy, strengthening participatory decision-making processes, improving intra-organizational communication, and ensuring stability in education policies can be effective strategies in managing uncertainty in schools.

Findings related to the *third sub-problem of the research* reveal that the effects of uncertainties experienced in schools on educational organizations are observed under three main categories: effects on school stakeholders, school climate, and educational objectives. These findings demonstrate the multidimensional impact of uncertainty in educational organizations. When examining the effects on school stakeholders, it is observed that uncertainty leads to negative psychological effects such as lack of motivation, future anxiety, and insecurity. This result aligns with the findings of Sarı and Dağ (2009), which indicate that uncertainty creates negative emotions in individuals. Additionally, it has been noted uncertainty negatively affects job performance and causes time loss. This situation supports Bloom's (2007) observation that uncertainty causes work to stagnate in organizations.

In terms of school climate, it has been found that uncertainty increases interpersonal conflicts and creates pressure and stress. This result parallels the research findings of Conley and Glasman (2008), which suggest that teachers experience fear and stress in situations of uncertainty. Moreover, the finding that uncertainty leads to unpredictability and complicates management supports Milliken's (1987) view that uncertainty negatively affects organizational decision-making processes.

In the context of educational objectives, it has been determined that uncertainty disrupts plans and causes deviation from goals. This finding is consistent with İçer's (1997) and Sarpkaya's (2013) findings that uncertainties in the education system hinder the realization of educational objectives. Furthermore, findings indicating that uncertainty renders activities dysfunctional and impedes the achievement of goals demonstrate that the goal-oriented structure of educational organizations is severely affected by uncertainty. The negative effects of uncertainty, particularly in the realization of school objectives, emphasize the importance of uncertainty management in the field of educational administration.

Findings related to the fourth sub-problem of the research indicate that as a method of coping with uncertainty, teachers individually try to remain calm and composed, act flexibly, and adopt a solution-oriented approach in uncertain situations. From an organizational perspective, they emphasize acting with team spirit, establishing strong communication, and prioritizing cooperation. These results demonstrate that teachers are careful to act both with their personal attitudes and behaviors and with a collective understanding in combating uncertainty. This result is consistent with Gençoğlu's (2012) definition that teams are communities that can bring together the skills of people with different functions for difficult problems and produce creative solutions.

Administrators' evaluations of teachers' strategies for coping with uncertainty are quite striking. According to administrators, teachers take initiative in moments of uncertainty, can ignore negativities, and try to manage the situation with an optimistic perspective. Turhan (2013) states that taking initiative means, in a sense, being willing to take on the task by deriving a duty from the situation. In addition, they can be open to group dynamics and different views. These observations are important in that teachers play a proactive, constructive and conciliatory role in uncertainty management from the perspective of administrators.

On the other hand, teachers' observations about administrators' methods of coping with uncertainty are also noteworthy. According to teachers, administrators can take risks in situations of uncertainty, strive to establish effective communication, but sometimes postpone problems. At the organizational level, they try to establish trust, produce solutions through common sense, and benefit from past experiences. These findings show that from the teachers' perspective, administrators can display both decisive and constructive as well as sometimes cautious and traditional attitudes in uncertainty management. This situation is similar to Erdem's (2002) view that management in school organizations is more inclined to apply solutions found through trial and error and experiences in the face of problems.

Finally, administrators' views on their own strategies for coping with uncertainty are quite meaningful. Administrators state that they act with a sense of duty and responsibility in combating uncertainty and try to maintain their composure. Institutionally, they state that they resort to participation, consultation, effective communication, and experience-based approaches. These results reveal that administrators evaluate their own uncertainty management styles in a more rational, systematic, and inclusive framework. According to Aydın (1994), managers aim to gain the respect of employees and increase

their influence over them by including their abilities and opinions in the process, which coincides with this situation.

It is understood that teachers and administrators use a series of personal and institutional strategies to cope with uncertainty. While both stakeholder groups try to overcome uncertainty with their individual attitudes and behaviors, they also value cooperation, communication, and acting together at the organizational level. However, administrators tend to adopt a more planned, inclusive and experience-based approach, while teachers tend towards more situational, flexible and instant solutions. These differences can be evaluated as a natural reflection of the roles and responsibilities assumed by teachers and administrators. It can be said that it is critical to implement individual and organizational strategies in harmony and with mutual understanding in overcoming uncertainty in educational institutions. This situation is consistent with the expressions in Çalık's (2003) definition of organizational harmony, such as the individual's identification with the organization they work for, for example, sharing common goals and values, and being willing to make efforts on behalf of the organization.

Findings related to the fifth sub-problem of the research indicate that participants offered various suggestions for preventing uncertainties, addressing the educational environment, teachers, school administration, upper management, and other stakeholders. Improving the physical conditions of school environments and ensuring equal opportunities among schools were seen as critical in preventing uncertainties. It was emphasized that planned and goal-oriented work for teachers, and mastery of legislation and expansion of areas of authority for administrators, would reduce uncertainties. These findings support Holdgraf's (2014) view that the effort to cope with uncertainty is a natural action of human nature; knowing how to proceed with uncertainty empowers individuals in setting goals and making decisions.

In managing uncertainties, it is expected that upper units consider the opinions of stakeholders in the field, operate control mechanisms, and show commitment to objectives. While educational supervision is a means to make the educational process more effective, innovations implemented in the education system day by day clearly demonstrate the importance of supervision in education (Yılmaz et al., 2016). For other stakeholders, strengthening communication and cooperation, implementing joint decision-making processes, and establishing an environment of trust were important.

All these suggestions reveal the need for a holistic approach to prevent and effectively manage uncertainties. Strengthening the physical and technological infrastructure of educational institutions, developing human resources, improving legislation and administrative processes, and ensuring interaction and trust among stakeholders play a key role in coping with uncertainties. It is understood that upper policy makers and implementers need to shape their decisions and actions not in isolation from the reality of schools and stakeholders, but in line with their needs and expectations. It is thought that a flexible and decentralized management approach will be more effective in dealing with uncertainty situations.

School principals have important responsibilities in managing uncertainties. It is critical for school principals to develop their leadership skills and managerial competencies, comprehend and apply legal regulations well, and establish a positive climate and culture in their schools to cope with uncertainty situations. This view aligns with Akyol et al.'s (2017) perspective that due to the school being a living system, administrators should be open to innovations and be able to coordinate these innovations with the school, possess leadership qualities, cope with innovations and ensure their adaptation to the school system, motivate stakeholders and ensure their sense of belonging to the school culture, and develop themselves to lead change.

However, the management of uncertainties may not be achieved solely through the efforts of upper management or school principals. Active participation and contribution of teachers, parents, and other stakeholders are also necessary. It is vital for all stakeholders to act with an understanding that prioritizes collective wisdom and cooperation for the prevention and successful management of uncertainties in schools. Kepenekçi (2004) also concluded that legal regulations such as bylaws are prepared without undergoing a serious preparation process and, more importantly, without consulting the opinions of those who will be affected by these regulations.

This study addresses a critical gap in literature by examining how uncertainties in schools are perceived and managed within the framework of school objectives, a perspective often overlooked in existing research. Previous studies, such as those by Beghetto and Jaeger (2022) and Herzig and Jimmieson (2006), have explored the general effects of uncertainty on educational stakeholders, focusing particularly on its psychological dimensions and potential as a creative catalyst. However, this research goes further by contextualizing these effects within the operational and strategic dimensions of schools, offering a novel contribution to the field. The study emphasizes the multidimensional nature of uncertainty and its interactions with systemic, organizational, and individual factors in educational settings. By providing detailed insights into teachers' and administrators' perceptions and coping strategies, it contributes to a deeper understanding of uncertainty in educational administration. Furthermore, its focus on aligning uncertainty management strategies with school objectives offers a practical framework for improving educational processes, addressing the lack of actionable solutions highlighted in previous studies.

In conclusion, the participants' suggestions for preventing and managing uncertainties require holistic and multidimensional interventions. These interventions should focus on both the structural problems of the education system and the human factor and inter-stakeholder relationships. It can be said that in managing uncertainties, flexible and participatory approaches that are sensitive to the unique needs and dynamics of schools and stakeholders are needed, rather than one-size-fits-all prescriptions valid under all conditions.

Based on the findings, the following recommendations can be developed: The opinions of educational stakeholders should be taken into account in changes in schools, and adjustments should be made in line with feedback. School administrators and teachers should be informed and prepared through in-service training before changes. Educational inequality of opportunity should be prevented; areas of authority should be made more flexible, taking into account socioeconomic and geographical conditions. School administrators should be given opportunities to exercise leadership, and their authorities should be increased. The present study can be replicated on provincial or district national education directors. Sub-themes related to uncertainty can be independent research topics. The perspectives of parents and students on uncertainty can be examined. Finally, a quantitative study can be conducted with a larger sample regarding uncertainties in schools and a scale can be developed.

Research and Publication Ethics

In this study, all rules specified in the "Directive on Scientific Research and Publication Ethics of Higher Education Institutions" were followed. None of the actions specified under the second section of the Directive, "Actions Contrary to Scientific Research and Publication Ethics", have been carried out.

Disclosure Statements

1. Contribution rate statement of researchers: First Author 50%, Second Author 50%

2. No potential conflict of interest was reported by the author.

CRediT authorship contribution statement

Emine DOĞAN: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

Ruhi SARPKAYA: Writing – review & editing, data collection, data analysis, Methodology, Conceptualization

References

Akyol, B., Vural, R., & Gündoğdu, K. (2017). Examination of primary school students' sense of school belonging, school atmosphere, climate, and principals' instructional leadership skills. *Ahi Evran University Kırşehir Faculty of Education Journal, 18*(1), 291–311.

Aydın, M. (1994). *Educational administration*. Hatipoğlu Publications.

Babrow, A. S. (1992). Communication and problematic integration: Understanding diverging probability and value, ambiguity, ambivalence, and impossibility. *Communication Theory, 2*(2), 95–130.

Banks, J. A. (2015). *Cultural diversity and education: Foundations, curriculum, and teaching* (6th ed.). Routledge.

Beck, U. (1992). *Risk society: Towards a new modernity*. Sage Publications.

Beghetto, R. A., & Jaeger, G. J. (Eds.). (2022). *Uncertainty: A catalyst for creativity, learning, and development*. Springer. https://doi.org/10.1007/978-3-030-98729-9

Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond: Toward a developmental theory of interpersonal communication. *Human Communication Research, 1*(2), 99–112. https://doi.org/10.1111/j.1468-2958.1975.tb00258.x

Bilgin, R., & Erbuğ, E. (2021). A critical evaluation of inequality of opportunity in education. *International Journal of Economics Administrative and Social Sciences, 4*(2), 231–239.

Bloom, N. (2007). The impact of uncertainty shocks. *Econometrica, 77*(3), 623–685.

Bradac, J. J. (2001). Theory comparison: Uncertainty reduction, problematic integration, uncertainty management, and other curious constructs. *Journal of Communication, 51*(3), 456–476.

Brashers, D. E. (2001). Communication and uncertainty management. *Journal of Communication, 51*(3), 477–497.

Büyüköztürk, Ş., Çakmak, E. K., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2007). *Scientific research methods*. Pegem A Publishing.

Carney, S., & Madsen, U. A. (2021). *Education in radical uncertainty: Transgression in theory and method*. Bloomsbury Academic.

Conley, S., & Glasman, N. (2008). Fear, the school organization, and teacher evaluation. *Educational Policy, 22*(1), 63–85.

Courtney, H., Kirkland, J., & Viguerie, P. (1997). Strategy under uncertainty. *Harvard Business Review, 75*(6), 67–79.

Creswell, J. W. (2019). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.

Cunningham, W. G., & Cordeiro, P. A. (2013). *Educational leadership: A bridge to improved practice* (5th ed.). Pearson.

Çalık, T. (2003). Employees' adaptation to the organization (Organizational Socialization). *Turkish Journal of Educational Sciences, 1*(2).

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. https://doi.org/10.1080/10888691.2018.1537791

Demiral, S. (2014). School administrators' perceptions of uncertainty situations and their decision-making styles. *Journal of Educational Sciences, 38*, 9–35.

Englund, H., & Frostenson, M. (2017). Managing performance evaluation uncertainties in schools: When teachers become struggling performers. *European Educational Research Journal, 16*(6), 885–906. https://doi.org/10.1177/1474904117693243

Erdem, A. R. (2020). Change leadership. In K. Yılmaz (Ed.), *Leadership theory-research-practice* (pp. 157–172). Pegem Academy.

Ersoy, A. (2019). *Phenomenological research: Design, implementation, and reporting*. Anı Publishing.

Fullan, M. (2020). *Leading in a culture of change* (2nd ed.). Jossey-Bass.

Gard, M., & Wright, J. (2001). Managing uncertainty: Obesity discourses and physical education in a risk society. *Studies in Philosophy and Education, 20*(6), 535–549. https://doi.org/10.1023/A:1012238617836

Gençoğlu, N. (2012). Conflict management in teamwork and a study on cabin crews in airline management (Master's thesis). Istanbul University, Institute of Social Sciences, Istanbul.

Hameiri, L., Nir, A., & Inbar, D. E. (2014). Confronting uncertainty and risk: The contribution of leadership to school outcomes. *Planning and Changing, 45*(1–2), 48–82.

Helsing, D. (2007). Regarding uncertainty in teachers and teaching. *Teaching and Teacher Education, 23*(8), 1317–1333. https://doi.org/10.1016/j.tate.2006.06.007

Herzig, S. E., & Jimmieson, N. L. (2006). Middle managers' uncertainty management during organizational change. *Leadership & Organization Development Journal, 27*(8), 628–645. https://doi.org/10.1108/01437730610709264

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations* (2nd ed.). Sage Publications.

Hoy, W. K., & Miskel, C. G. (2013). *Educational administration: Theory, research, and practice* (9th ed.). McGraw-Hill Education.

Mazlum, A. A. (2019). *Uncertainty management and its relationship with proactive behaviors* (Master's thesis). Ankara University, Institute of Educational Sciences, Ankara.

Milliken, F. J. (1987). Three types of perceived uncertainty about the environment: State, effect, and response uncertainty. *Academy of Management Review, 12*(1), 133–143. https://doi.org/10.5465/amr.1987.4306502

Moles, A. (2018). *Belirsizin bilimleri: İnsan bilimleri için yeni bir epistemoloji* (N. Bilgin, Trans.). Yapı Kredi Yayınları.

Munthe, E. (2001). Professional uncertainty/certainty: How (un)certain are teachers, what are they (un)certain about, and how is (un)certainty related to age, experience, gender, qualifications, and school type? *European Journal of Teacher Education, 24*(3), 355–368. https://doi.org/10.1080/02619760220128905

Ng, P. T. (2013). Developing Singapore school leaders to handle complexity in times of uncertainty. *Asia Pacific Education Review, 14*(1), 67–73. https://doi.org/10.1007/s12564-013-9253-1

Sarı, S., & Dağ, İ. (2009). Turkish adaptation, validity, and reliability of the intolerance of uncertainty scale, positive beliefs about worry scale, and consequences of worry scale. *Anatolian Journal of Psychiatry, 10*(4), 261–270.

Sarpkaya, R. (2013). The role of school administrators in achieving educational objectives. *Mülkiye Journal, 35*(270), 159–186.

Schuck, S., Aubusson, P., Burden, K., & Brindley, S. (2018). *Uncertainty in teacher education futures: Scenarios, politics, and STEM*. Springer. https://doi.org/10.1007/978-981-10-8246-7

Sergiovanni, T. J. (2009). *The principalship: A reflective practice perspective*. Pearson.

Töremen, F. (2002). Barriers and reasons for change in educational organizations. *Fırat University Journal of Social Sciences, 12*(1), 185–202.

Turan, S., Yücel, C., Karataş, E., & Demirhan, G. (2010). School principals' views on decentralization. *Uşak University Journal of Social Sciences, 3*(1), 1–18.

Turhan, H. (2013). Initiative and sense of responsibility. *Deniz Harp Okulu Pusula Journal, 73*.

Vavrus, F. (2021). *Schooling as uncertainty: An ethnographic memoir in comparative education*. Bloomsbury Publishing.

Yılmaz, T., Altun, B., Uygun, H., & Hoşgörür, V. (2016). The evaluation of articles on educational supervision in Turkey. *Muğla Sıtkı Koçman University Journal of Education Faculty, 3*(1), 47–63. https://doi.org/10.21666/mskuefd.09324