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## Message from the Editor

Greetings to our colleagues from all parts of the world. As the editor of Journal of Action Qualitative & Mixed Methods Research (JAQMER), I would like to welcome you to Volume 5, Issue 1.

This edition contains an editorial essay and four articles on one mixed methods and three qualitative studies that we believe will assist you, the reader, in conceptualizing and solving problems related to developing research or manuscripts with mixed methods and qualitative design.

The current issue includes an editorial essay and four articles: the editorial essay, which is called 'Rethinking positivism in social research: Lessons from the Hawthorne experiments and the rise of action research' is an essay. In this editorial on positivism in social research, the author tried to scrutinize the limitations of positivism in social research based on its historical roots to Auguste Comte's vision of a "science of society" patterned on the natural sciences,

The first article, which is called 'School administrators' views on effective school development: A case study' is a qualitative case study with a holistic multiple-case design. The aim of this study was to identify the views of school principals in public schools in Muratpasa in Antalya regarding the concept of an effective school and to analyze their opinions on effective school development.

The second article, which is called 'Thematic analysis in qualitative research: Steps, benefits, and challenges', is a qualitative study based on an analysis of literature in the field with the inclusion of a qualitative methodological approach supported using multiple case studies and practical examples. The aim of this study was to examine the methodological structure, benefits, and challenges of thematic analysis through a comparative exploration of three case studies.

The third article, which is called 'Adaptation, validity and reliability of hypoglycemic confidence scale into Turkish: Mixed methods research' is an embedded mixed-methods study with an embedded instrument development and validation variant. The aim of this study was to evaluate the validity and reliability of the Turkish version of the Hypoglycemic Confidence Scale (HCS) and to examine its applicability through qualitative analysis.

The fourth article, which is called 'Alignment of the 11th Grade Philosophy Skill-Based Activity Book with Bloom's Revised Taxonomy', is a qualitative study with a systematic analysis variant of systematic review design. The aim of this study was to examine the alignment of the assessment tools included in the 11th Grade Philosophy Skill-Based Activity Book prepared by the Turkish Ministry of National Education with the Cognitive Process Dimension of Bloom's Revised Taxonomy (BRT).

These articles are designed to offer thoughts, insight, suggestions, samples and ideas on mixed methods and qualitative studies. According to the guidance and the results of articles in this issue, researchers could shape their future mixed methods and qualitative studies.

We hope you enjoy the articles in this volume 5 issue 1 of the journal and find them informative and useful for designing and developing mixed methods, quantitative and qualitative research. Please remember that articles published in JAQMER do not reflect the position of the journal's editorial staff, reviewers.

Dr. İlhan Gunbayi  
*JAQMER Editor*



## Contents

Editorial: Rethinking positivism in social research: Lessons from the Hawthorne experiments and the rise of action research

*Ilhan Gunbayi*----- 1-6

School administrators' views on effective school development: A case study

*Özlem Güngören Pazzanese, Süleyman Karataş* -----7-24

Thematic analysis in qualitative research: Steps, benefits, and challenges

*Fernando Almeida* ----- 25-38

Adaptation, validity and reliability of hypoglycemic confidence scale into Turkish: Mixed methods research

*Leyla Muslu, Fatma Betül Özdemir, Nusret Yılmaz* ----- 39-55

*Alignment of the 11th Grade Philosophy Skill-Based Activity Book with Bloom's Revised Taxonomy*

*Mustafa Sekban, Güçlü Şekerciöğlü*----- 56-69

## Editorial

# Rethinking positivism in social research: Lessons from the Hawthorne experiments and the rise of action research

Ilhan Gunbayi\*

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**Abstract.** Based on its historical roots to Auguste Comte's vision of a "science of society" patterned on the natural sciences, this editorial scrutinizes the limitations of positivism in social research. Besides, it is explained how efforts to prove causal laws in human behavior were unsuccessful focusing on the Hawthorne experiments (1924–1932), when social meaning and action emerged as principal variables. As a participatory alternative combining knowledge generation with practical transformation, Kurt Lewin's creation of action research is explained. Emphasizing trustworthiness, multiple realities, and value-added inquiry, positivist assumptions, based on opposite theoretical critiques by Ernest G. Guba and Yvonna S. Lincoln are also questioned. Accordingly, a paradigm shift from reductionist methodologies of natural sciences based on radical structuralist and functionalist paradigms toward participatory and context-based approaches based on interpretive and radical humanist paradigms are underlined via these perspectives and views. The paper concludes that the future of social research lies in accepting complexity, collaboration, and the lived experiences of participants rather than seeking universal laws detached from human context.

**Keywords:** Positivism, Hawthorne effect, action research, social science methodology, constructivism, research paradigms

## Introduction

Social scientists have debated whether the model of natural sciences should be followed in human sciences for more than a century or not. August Comte, the founder of positivism, claimed that social phenomena should be researched via systematic observation, causal laws and generalization similar to physical objects. As Comte (2000/1896) wrote, "All good intellects have repeated, since Bacon's time, that there can be no real knowledge but that which rests upon observed facts." (p.29)

However, the application of positivist research methods to social research usually has been limited. The Hawthorne experiments, designed to prove the causal relation between workplace conditions and productivity, revealed that human behaviors were not likely to be reduced only to outward physical conditions. Instead, employees' performance was increased and improved not due to measurable variables of illuminating and rest breaks, but they felt themselves valued and observed (Dickson & Roethlisberger, 2003/1939).

Kurt Lewin put forward a solution to those limitations by pioneering and creating action research, a methodology combining participation with problem solving (Marrow, 1969; Gunbayi, 2024). As Lewin famously asserted, "...intergroup relations cannot be solved without altering certain aspects of

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conduct...” (Lewin, 1946, p. 44). This approach changed the role of individuals or participants from passive “subjects” to active participants.

Guba & Lincoln’s theoretical critiques reinforced this approach and shift. Guba (1981) argued that the criteria of conventional inquiry-internal and external validity, reliability, and objectivity-are inadequate for naturalistic settings. Lincoln and Guba (1985) insisted that “realities are multiple, constructed, and holistic” (p. 37), a position opposed to positivism’s claim to a single objective truth.

This paper criticizes the application of positivism in social sciences, scrutinizes Hawthorne experiments as an empirical failure of that paradigm, emphasizes the ever-lasting value of Lewin’s action research and the constructivist transformation advocated by Guba & Lincoln.

## Methodology

This study employs a qualitative descriptive analysis grounded in a comprehensive review of literature, conceptualized as a subtype of systematic review methodology. Within an interpretive paradigm, a literature review is characterized as a structured and systematic process aimed at the identification, collection, critical evaluation, and synthesis of existing scholarly work (Gunbayi, 2020; Baumeister & Leary, 1997; Cooper, 1998). Therefore, the purpose of this article is to scrutinize the limitations of positivism in social research focusing on the Hawthorne experiments based on subheadings:

1. Positivist paradigm and Comte’s legacy,
2. Hawthorne studies and the limits of positivism,
3. Theoretical critiques of positivism,
4. Lincoln & Guba on competing paradigms,
5. Kurt Lewin and the invention of action research,
6. Experimental action research in contemporary context.

## Results

Based on a literature review of the Hawthorne experiments and action research, this chapter covers positivist paradigm and Comte’s legacy, Hawthorne studies and the limits of positivism, theoretical critiques of positivism, Lincoln & Guba on competing paradigms, Kurt Lewin and the invention of action research and experimental action research in contemporary context.

### *The positivist paradigm and Comte’s legacy*

Auguste Comte sought to establish sociology as a scientific discipline by applying methods of observation and classification from the natural sciences (2000/1896). In his ‘*The Positive Philosophy of Auguste Comte*’ Comte (2000/1896) declared:

“The law is this: that each of our leading conceptions-each branch of our knowledge-passes successively through three different theoretical conditions: the Theological, the Metaphysical, and the Scientific, or Positive.” (p. 27)

For Comte, the “positive” stage represented the highest form of knowledge, grounded in empirical observation and freed from speculation. His goal was to build a science of society capable of producing general laws, similar to physics or biology.

This vision influenced early twentieth-century industrial research, where workers were studied as if they were machines. As Dickson & Roethlisberger (2003/1939) noted in their classic study, management science sought to “control of all the factors affecting work performance” (p. 14) to maximize efficiency. Yet, this reductionist approach decontextualized human experience, ignoring social meaning and agency. The positivist assumption that human behaviour could be explained entirely through controlled variables would soon be undermined by the results of the Hawthorne experiments by marking a turning

point, revealing the limitations of positivism and paving the way for more interpretive and human-centred approaches within the social sciences.

### ***Hawthorne studies and the limits of positivism***

Six sets of Hawthorne experiments in addition to mass interviewing program first based on questionnaires via direct approach and then qualitative interviews via indirect approach (1928-1931) during the course of experiments as the illumination studies (1924-1927), the first relay assembly experiments (1927-1933), the second relay assembly experiments (1928-1929), the bank wiring experiments (1931-1932), mica splitting experiments (1928-1930) and bank wiring room experiments (1931-1932) at Western Electric's plant aimed to establish causal relationships between environmental changes and worker productivity. (Dickson & Roethlisberger (2003/1939) When productivity rose regardless of whether conditions improved or worsened in experiments, the researchers were puzzled.

Dickson & Roethlisberger (2003, 1939) concluded that the changes were not due to lighting or breaks, but to the "everything pointed to the need for more research on employee attitudes and the factors to which they could be related" (p. 141). Workers responded to the feeling of attention and recognition, not to the experimental manipulations themselves.

This was the "Hawthorne effect," and it highlighted the core limitation of positivism: people are not passive objects that respond mechanically to external changes. They are meaning-making agents embedded in social contexts as Sonnenfeld (1985) summarized, "The Hawthorne studies yielded some insights into the psychological underpinning of institutional analysis and the implications of institutional factors on small group and individual behaviour. This more social-psychological perspective very much threatened the role of traditional sociology." (p. 126).

As Sonnenfeld (1985) explained, this perspective introduced a more social-psychological and institutional understanding of behaviour, indicating a critical leaving from traditional positivist paradigms and giving the way for more human-centred approaches in the social sciences.

### ***Theoretical critiques of positivism***

#### ***Guba on Trustworthiness***

Guba (1981) directly questioned the adequacy of positivist criteria for judging research quality. He wrote:

"...naturalistic inquiry is defined and differentiated from the rationalistic mode of inquiry commonly practiced in the past and still dominating today..." (p. 76)

Instead of internal validity and reliability in quantitative researches based on positivism and post-positivism, Guba (1981) proposed more context-sensitive and interpretive procedures such as credibility and transferability and recognized that understanding human experience requires attention to meaning, context, and multiple realities rather than relying only on objective measurement, which both broadened the methodological foundations of qualitative research but also reinforced the acceptability of naturalistic inquiry.

#### ***Lincoln & Guba on competing paradigms***

In *Naturalistic Inquiry*, Lincoln and Guba (1985) argued positivist and naturalist paradigm:

"Positivist paradigm: There is a single tangible reality "out there" fragmentable into independent variables and processes, any of which may be studied independently of the others; inquiry can converge onto that reality until, finally, it can be predicted and controlled. ...Naturalistic paradigm: There are multiple constructed realities that may be studied only holistically; inquiry into these multiple realities

will inevitably diverge so that prediction and control are unlikely outcomes, although some level of understanding may be achieved..." (p. 37)

Later, in their influential essay *Competing Paradigms in Qualitative Research*, they emphasized that positivism denies the role of human values and culture:

"...if a "real" world is assumed, then what can be known about it is "how things really are" and "how things really work." Then only those questions that relate to matters of "real" existence and "real" action are admissible; other questions, such as those concerning matters of aesthetic or moral significance, fall outside the realm of legitimate scientific inquiry..." (Lincoln & Guba, 1994, p. 108)

These critiques resonate directly with the lessons of the Hawthorne experiments, which showed that human behaviour cannot be understood in isolation from its social and cultural setting like experiments on animals, plants and matters in laboratory.

### ***Kurt Lewin and the invention of action research***

Kurt Lewin recognized that positivist approaches failed to capture the dynamics of human groups. He proposed action research as an alternative. In his seminal 1946 article, he wrote:

"...mere diagnosis -and surveys are a type of diagnosis- does not suffice. In intergroup relations as in other fields of social management the diagnosis has to be complemented by experimental comparative studies of the effectiveness of various techniques of change... The research needed for social practice can best be characterized as research for social management or social engineering. It is a type of action-research, comparative research on the conditions and effects of various forms of social action, and research leading to social action. Research that produces nothing, but books will not suffice..." (Lewin, 1946, p. 35- 37)

Lewin's model involved a cycle of planning, action, and fact-finding. Unlike the detached observation of positivism, action research required collaboration between researchers and participants. Marrow (1969) explained that Lewin "was to pioneer in a double sense and give a new turn to the theory and practice of the behavioural sciences" (p. 84).

By engaging participants as co-researchers, Lewin shifted the epistemological foundation of inquiry. Workers, students, or community members were no longer treated as passive "subjects" but as partners in problem-solving. Thus, by developing a more democratic, dynamic, and problem-solving orientation which continues to influence contemporary social and educational research, the detachment of positivism is questioned via action research.

### ***Experimental action research in contemporary context***

The fact that experimental action research has become a preferred methodology in modern social, behavioural, and health sciences are emphasized by Gunbayi (2025) since action research accepts complexity and includes participation. He summarizes that "By combining empirical data with experiential knowledge, action research enhances both the validity and applicability of findings in practice-based disciplines" (p. 6).

For instance, teachers and students co-create approaches to make better learning outcomes in education. Practitioners involve patients in shaping interventions in healthcare. Employees participate in diagnosing and solving workplace problems in organizational settings.

Action research integrates knowledge with action, respecting the lived realities of participants different from Comte's positivism assuming detached objectivity. Consequently, the principle of participation

both enriches the research process and supports meaningful and sustainable transformation in practical settings.

## Results and Discussion

The fundamental weakness of positivist methodology in the social sciences was discovered via Hawthorne studies: reducing human beings to subjects isolated from the meaning, context, and social dimensions that essentially shape behaviour. Comte's idea of a "science of society" modelled on physics (2009/1865), (2000/1896) was proved inadequate in practice in social sciences.

Criteria of trustworthiness that regards multiplicity, context, and values must be adopted to inquiries into human life as argued by Guba (1981) and Lincoln & Guba (1985, 1994). A methodological breakthrough, placing participants at the centre of knowledge production were offered via Kurt Lewin's discovery of action research.

In the preface of 'The practical theorist: The life and work of Kurt Lewin', Marrow (1969) stated that "No action without research; no research without action" (p. ix). This principle is adopted with action research by combining theoretical rigor with real-world change. The future of social research will not be in positivist reductionism but in participatory, experimental, and context-sensitive methodologies respecting individuals as participants and communities as stakeholders.

The influence of Auguste Comte's positive paradigm on social sciences and how this approach has been critiqued and transformed over time are summarized in this article. Primarily, positivism, trying to examine social phenomena like the natural sciences and find universal laws, has been questioned as a result of Hawthorne experiments as the complexity of human behaviour and the importance of social factors are ignored in these experiments. The assumption of objective reality was challenged and context-sensitive criteria such as credibility and transferability for validity, dependability and confirmability for reliability were emphasized by theorists such as Egon Guba and Yvonna S. Lincoln. Additionally, the purpose of social research has been shifted from passive observation to active collaboration and participatory methodologies integrating theory and practice with the development of approaches such as Kurt Lewin's action research. Collectively, these texts illustrate the paradigm shift in the social sciences from mechanistic, control-oriented approaches to human-centred, interpretive, and contextual approaches.

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### **Conflicts of interest**

No conflicts of interest are declared by the author.

### **Author Contribution**

Corresponding author Ilhan Gunbayi: Conceptualization, data refinement, research, methodology, original drafting, review, and editing

### **Conflict of Interest Statement**

This research has not received any specific grants from funding agencies in the public, commercial, or non-profit sectors.

### **Ethics Approval**

In the writing process of the study titled "**Rethinking positivism in social research: Lessons from the Hawthorne experiments and the rise of action research**", scientific, ethical and citation rules were followed; It is committed by the author of this study that no falsification has been done on the data collected. It accepts that "Journal of Action Qualitative & Mixed Methods Research and Editor" has no responsibility for all ethical violations that may be encountered, that all responsibility belongs to the author and that the study has not been submitted to any other academic publication environment for evaluation.

### **Institutional review board (IRB) approval**

Institutional Review Board (IRB) is not required for this research.

### **Data Availability Statement**

Anonymized data from this study can be used upon request [jaqmer.editor@gmail.com](mailto:jaqmer.editor@gmail.com)

## School administrators' views on effective school development: A case study

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**Abstract.** In this study, the aim was to identify the views of school principals in public schools in Muratpasa in Antalya regarding the concept of an effective school and to analyze their opinions on effective school development. Based on a qualitative research design, it was conducted using a holistic multiple-case study approach. Individual interviews were used as the data collection technique and descriptive analysis was employed to analyze the collected data. According to the findings, most school administrators were familiar with the concept of effectiveness; however, they tended to perceive it more as social events. The most significant characteristics of effective schools were emphasized as the quality of educational services and the sensitivity toward school climate and culture. It was highlighted that each school should have its own unique mission and vision. The importance of flexible discipline and the role of punishment and reward were emphasized with the necessity for effective schools to move beyond routine behaviors and provide students with diverse learning environments. Motivation plays a crucial role in meeting different expectations and positive reinforcement is achievable through positive communication. Finally, the school administrators indicated that the greatest barrier to becoming an effective school is the lack of supervision.

**Keywords:** Effective school, school administrator, case study

### Introduction

In an effective school, students' cognitive, affective, psychomotor, social, and aesthetic domains are supported, and a highly optimal learning environment is created. These schools are capable of generating differences, and these differences emerge from ideas. The main focus of school effectiveness is the ability of schools to independently make a change in student achievement. Effective schools provide students with appropriate materials, physical conditions, and all necessary resources to ensure their success. They contribute to students' development not only cognitively but also affectively (Özdemir, 2000).

An effective school enables all students to benefit from the opportunities offered to them to the maximum extent, meaning that the prepared program achieves its intended goals (Lezotte, 1991). Studies conducted from past to present reveal similarities in the dimensions of effective schools. According to Edmonds (1979), effective schools have five key characteristics: they should clearly define their instructional goals, conduct systematic evaluations both generally and specifically, ensure that all students are able to learn, maintain a safe atmosphere that encourages teaching and learning, and include principled educators (Edmonds, 1979). Conducting research in many schools across Asia, Cheng and Wong (1996) identified the following dimensions: community contribution, teacher professionalism, quality-oriented school structures, and high achievement expectations. Zigarelli (1996) examined six themes—qualified teachers, teacher participation and satisfaction, the leadership and communication

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skills of school administrators, strong institutional culture, positive school management relations, and high parental involvement—and tested their effects on student achievement (Zigarelli, 1996).

The teaching and learning environment, which is highly significant for an effective school, emerges as a result of the interaction between the organization and its surroundings, and this environment varies according to the climate of the organization. This environment—where information is communicated, students are active, and instructional activities take place—is the setting in which educational practices are carried out (Başaran, 1982). The responsibility of the school administrator is to create an effective and productive school environment, while teachers are responsible for creating an efficient and effective classroom environment. By establishing a calm, harmonious, and active atmosphere, teachers foster group awareness and participation among students. Such an environment becomes possible through the encouragement of the teacher and the participation of the students (Baştepe, 2009).

When considering the goals of an effective school, they are objectives that, like in any system, enable the school to maintain its existence. They address the questions, “Why does the school exist? What does the school produce in order to survive?” A school is established to provide education at a certain level within the education system, focusing on citizens of specific age groups. To continue its existence, the school produces educational services. At the same time, it produces materials and ideas that contribute to and promote education. In this way, it diversifies its organizational purpose (Başaran, 2000).

From the perspective of managerial goals, the aim is to ensure the school’s effectiveness. The degree to which organizational goals are achieved determines a school’s effectiveness. The level of effectiveness increases as the administration enhances the quantity and quality of the education provided by the school. Managerial goals include not only raising students according to predetermined timelines but also improving their competence. Therefore, an educational administrator must both expand access to education and enhance its quality (Başaran, 2000).

Regarding the educational goals of the school, these goals—defined as the qualities of behaviors intended to be instilled in students—essentially describe the ideal citizen to be educated. Identifying the characteristics students should acquire is seen as one of the major challenges in educational administration. With which behaviors should the student be equipped? Should the student be raised with the values of the past, the values of the present, or those required for future life? These questions must be carefully addressed, guided by research (Başaran, 2000).

Four key characteristics of effective schools can be listed as follows (Macgilchrist, 2004): student rights and responsibilities; student representation and engagement in learning; professional and highly qualified leadership and management; a focus on teaching and learning; and a learning organization in which school staff are willing to participate in learning and professional development programs. The foundation of research on effective schools consists of identifying factors related to the internal environment of the school.

When studies on ineffective schools are examined, it is evident that, just as in effective schools, the most salient issue is the administrator and their management style. Administrators working in ineffective schools are regarded as unsuccessful and inadequate because they are not sufficiently active in fulfilling their duties and responsibilities, lack instructional leadership skills, exhibit bureaucratic attitudes, and fail to establish institutional culture and policies (Baştepe, 2004). As in other organizations, determining the criteria of success in schools is particularly challenging. For this reason, Cameron argued that instead of trying to define effectiveness criteria, it is more meaningful to start from the indicators of ineffectiveness. These indicators include failure, organizational conflict, problems, errors, low performance, and issues arising from the ambiguity of duties and responsibilities of administrators, teachers, parents, and students. If such indicators are absent in a school, the school may be considered

effective. In cases where effectiveness criteria are not clearly defined, establishing criteria for school improvement becomes highly useful (Şişman, 2002).

The school is a social system with its own organizational climate and culture. Since the inputs and outputs of these organizations are people, organizational climate and culture hold great importance in institutions where human relations are central. The school administrator has the greatest responsibility in shaping this culture and climate. If the school administrator succeeds in creating an effective culture and climate, employee motivation increases and a healthy school environment emerges (Çelik, 2002).

Achieving educational goals is possible through instructional processes. Because teachers are the fundamental component of instruction, they must possess certain essential qualities. There is a close relationship between effective schools and effective teachers. In effective schools, teachers collaborate and work interactively, supported by school principals. They share the instructional strategies and materials they use in lessons. Their communication with students in the classroom is strong. The teacher's primary focus is learning, and teachers must also learn while they teach. Professional responsibilities include continual progress and staying updated in their field. Another important factor is communication: in the classroom, not only what is taught but how it is presented is highly significant. Effective teachers master their subject area, are skilled in classroom management, maintain high energy, communicate effectively with students, use their voice and gestures well, and present material with enthusiasm—even topics that may not initially seem interesting to students. Research shows a parallel relationship between personality traits and effective teaching (Polk, 2006).

Students are at the center of effective schools. The goal is for students with different academic abilities to reach predetermined standards. A student's social and socioeconomic background is not the only factor determining success. Teachers believe that every student can succeed and therefore maintain high expectations. They also see it as their duty to communicate these expectations to students. Students are willing to participate in social activities, and teachers and administrators encourage and guide them in this process (Şişman, 1996).

For families to be more responsive to problems that may arise in schools, they must share responsibility in education. The outcomes of school-family relationships directly affect student education; therefore, school administration should prioritize communication with parents. Compared to unsuccessful schools, successful schools are known to have stronger environmental and parental support and participation. This situation not only enhances success but also reduces disciplinary problems (Glass, Bjork & Brunner, 1992).

Schools exist within a particular social environment and are closely connected with that environment. Preparing the environment for learning and gaining the support of the external community contribute to making a school effective. A well-organized school environment is crucial for effective teaching. If there is disorder and disciplinary issues in a school, learning cannot occur sufficiently. Therefore, the aim of an effective school is to minimize, even if not entirely eliminate, such issues. Ensuring a minimum level of necessary facilities and resources is essential for an effective education system. Effective education systems are expected to provide basic health and safety needs for all students (Kemal & Karip, 1996).

Several models have been designed in the field of organization and management to determine organizational effectiveness. In the goal model, it is observed that schools have complex sets of goals, which may at times conflict with one another. Academic goals, vocational skill development goals, and political and economic goals vary depending on societies and their environments (Şişman, 2002).

According to the resource-input model, schools, like other organizations, require certain resources to achieve their goals. These include family-related resources, school resources, student resources, social

characteristics, and peer groups. The more resources a school provides, the more effective it becomes. In this model, the alignment between a school's inputs and outputs is crucial. The primary outputs are defined as the successes students achieve on various assessments (Şişman, 2002).

According to the process model, determining school effectiveness is based on examining in-school and in-class processes. In this model, the school is not perceived as an open system; rather, what happens inside the school is directly associated with students. In other words, there is a strong connection between events occurring within school boundaries and the level of school effectiveness. In-school processes consist of management, teaching, and learning processes (Şişman, 2002).

In the satisfaction model, the stakeholders related to the school include students, teachers, school administration, the school board, district and provincial education organizations, and families. According to this model, the extent to which these stakeholders' expectations are met determines school effectiveness. Recently, total quality management has become a popular approach in schools (Şişman, 2002).

According to the legitimacy (legality) model, due to recent societal changes, school environments have become more competitive. A competitive setting may be observed as schools seek to access more resources. The survival of schools is closely linked to being accepted by society; greater societal support enables schools to secure more resources. This model also emphasizes schools' responsibility toward the community (Şişman, 2002).

According to the organizational learning model, societal changes influence the school. If a school can adapt to its environment and contribute to the improvement of that environment, it may be considered effective. The model differs from others in its emphasis on learning behavior. It includes adapting to societal changes and needs, evaluating internal processes, examining the environment, and preparing school development plans. Schools are expected to keep pace with political, economic, and technological changes occurring in their surroundings. One limitation of the system is the inability to clearly define the relationship between organizational learning processes and school outcomes (Şişman, 2002).

According to the total quality management model, the primary purpose is to enhance school effectiveness. This model appears as a combination of the satisfaction, process, and organizational learning models. A school can only be effective if it meets the expectations of its stakeholders (Şişman, 2002).

Katz and Kahn's model is fundamentally based on the systems model and emphasizes negotiation among organizational members. The ratio of output to input in technical and economic terms indicates improvement in effectiveness. Political permeability reflects political influence and constitutes the political dimension of effectiveness, which is highly important for effective schools (Kahn & Katz, 1978).

The Hoy and Ferguson model is a synthesis of the systems model and the goal model. Although these models differ, Hoy and Ferguson argue that both address organizational behavior from either an open or closed perspective; therefore, they can be integrated. Organizational adaptation refers to alignment with internal and external forces. Organizational effectiveness concerns the achievement of internal goals. Organizational unity means the absence of internal conflict. Organizational commitment refers to motivation and dedication of members to the organization. According to Hoy and Ferguson, these dimensions relate not only to goals but also to the means for achieving them, maintain consistency, and provide theoretical guidance. Through empirical research, they tested the validity of the model and concluded that it is applicable (Hoy, 1985).

Cameron's model of organizational effectiveness was designed to examine school effectiveness. The criteria Cameron (1978) developed to measure school effectiveness focus not on school goals but on organizational characteristics (Şişman, 1996).

In Creemers' educational effectiveness model, the main variables include curriculum, quality of instruction, grouped procedures, and teacher behavior dimensions, with attention given to the alignment among these components (Şişman, 2002).

In Scheerens' school effectiveness model, the primary dimensions are content, school and classroom processes, and outputs (Şişman, 2002). Numerous models have been developed concerning organizational effectiveness, and the most important and widely applied ones are discussed above.

The aim of this study is to define the concept of an effective school based on the views of school administrators working in the Muratpasa district of Antalya and to identify what needs to be done to improve school effectiveness. For this purpose, the study seeks to answer the following questions: what the concepts of effectiveness and efficiency mean to administrators; how administrators define an effective school; how the process of structuring an effective school should be carried out; what practices are observed in effective schools; and what responsibilities stakeholders should fulfill.

Research on effective schools in Türkiye is limited in number. Therefore, empirical studies on this topic remain insufficient, which increases the importance of further research in this field. A review of quantitative studies reveals some common findings. First, managerial, organizational, and personal variables have been shown to be associated with school effectiveness. Additionally, studies investigating the relationship between school effectiveness and student achievement are scarce. It has been determined that the schools examined generally possess characteristics of effective schools. However, most studies have revealed insufficient cooperation between schools and parents or between schools and the community.

Second, qualitative findings focus on what can be done to enhance school effectiveness and emphasize the components of an effective school. Establishing a strong school culture and a positive school climate, supporting and developing teachers professionally, and improving the quality of classroom learning were identified as common themes. Finally, qualitative studies have highlighted key shared components related to school effectiveness, such as fostering a positive school culture and environment, supporting teachers' professional development, and enhancing the quality of teaching and learning processes. Overall, when these findings are considered together, it can be concluded that administrators, teachers, instructional processes, school culture and climate, and collaboration with parents play crucial roles in ensuring school effectiveness. In summary, it is emphasized that school effectiveness must be strengthened through continuous professional development, collaboration with the school community and wider environment, and activities aimed at improving student learning. Based on these common findings, it is observed that qualitative and mixed-method studies are limited, whereas quantitative studies dominate the field. Given that effectiveness is a construct with a strong qualitative dimension, future research should examine it more deeply using qualitative and mixed-method approaches (Polatcan & Cansoy, 2017).

Furthermore, it has been observed that researchers often rely on previously developed scales, that newly developed scales lack adequate attention to validity and reliability, that studies predominantly focus on public schools, that sampling diversity is insufficient, and that quantitative designs are mostly preferred. The studies reviewed are not large-scale or long-term projects (Turhan, Şener, & Gündüzalp, 2017).

Many new concepts and approaches have emerged in the field of education. These newly introduced concepts and approaches lead the education system toward change and restructuring. Therefore, new

meanings are increasingly attributed to the concept of an “effective school,” and the need for research in this area continues to grow rapidly.

School effectiveness plays a significant role in the development and progress of society. In this context, conducting research in this field is essential for accurately identifying existing problems and proposing solutions for improvement.

### **Methodology**

In this study, a qualitative research method based on interpretive paradigm (Gunbayi & Sorm, 2018) was employed. The main focus of qualitative research is to understand, explain, examine, explore, and clarify the conditions, emotions, perceptions, attitudes, values, beliefs, and experiences of a group of individuals (Çokluk & Şekercioglu, 2014). Since the research was conducted with school administrators working in various public schools in the Muratpasa district of Antalya who voluntarily participated in the study, a holistic multiple-case study design (Yin, 2017) -one of the qualitative research designs based on case study methodology—was used.

A case study is defined as “an intensive and holistic description or analysis of a single or bounded system. Understanding the case is a central issue in data analysis, and data are typically obtained through interviews, field observations, and documents” (Merriam, 2013). In a holistic multiple-case design, more than one case that can be perceived as a whole on its own is examined. Each case is studied holistically, and then the cases are compared with one another (Yin, 2017).

Yin (1984) describes case study as a research method used when the central questions of the study are “how” and “why,” when the researcher has little or no control over events, when the phenomenon is examined within its real-life context, and when the boundaries between the phenomenon and the context are not clearly evident (Yin, 1984).

### **Sampling**

The sampling of the study consisted of 15 school administrators selected through convenience sampling, one of the purposive sampling methods. Purposive sampling allows for an in-depth examination of cases that are believed to provide rich information. In this sense, purposive sampling methods are useful in many situations for exploring and explaining phenomena and events (Palys, 2008).

Due to confidentiality and ethical considerations, the names of the participants in the study group were not disclosed, and codes were used instead. Participants were coded according to the order in which they were interviewed as K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K12, K13, K14, and K15.

### **Data collection**

The data were collected through audio recordings and note-taking during the interviews. First, the recordings were reviewed and transcribed. The transcribed data were documented after all individual interviews had been completed. A descriptive analysis method (Gunbayi, 2023) was used in the data analysis process.

For this study, the researcher visited the schools of the participating administrators and conducted the interviews on-site. All interviews were audio-recorded and later transcribed by listening to the recordings. Prior to each interview, appointments were scheduled based on the availability of the participants. All interviews were conducted face-to-face. During the scheduling process and again before the interview began, participants were informed about the purpose of the study, the ethical principles the researcher would follow, and confidentiality procedures.

Throughout the interview, questions were posed in a conversational manner to help participants feel comfortable. Depending on the flow of the conversation, the order of the questions was occasionally adjusted. Feedback was provided according to the responses given, and an encouraging approach was maintained. Although participants were informed beforehand of the minimum estimated time required for answering the questions, no upper time limit was imposed to allow the conversation to reach saturation. Consequently, some interviews lasted approximately 30 minutes, while others extended up to 2 hours.

### ***Ethics statement***

During the interviews, participants were first reminded that ethical responsibility ultimately belonged to them, and they were treated with courtesy and respect throughout the process. Interviewers should demonstrate appreciation and gratitude toward participants for agreeing to contribute their individual insights and experiences to the study, and this attitude should be reflected in the interviewer's interactions (Creswell, 2018; Patton, 2018).

In preparing the interview questions, sufficient time was allocated to ensure that the items were comprehensive and did not involve personal or private information about the participants. The questions were piloted under the supervision of the thesis advisor. Care was taken to ensure that the questions were clear and answerable. It is essential that interview questions avoid excessive generalizations and maintain clarity (Merriam & Tisdell, 2015; Patton, 2018; Rubin & Rubin, 2012).

This research was conducted in accordance with ethical guidelines. Ethical approval was granted by the Akdeniz University Social and Human Sciences Scientific Research and Publication Ethics Committee (Decision No: 248, 30/11/2020)

### ***Rigour***

In this study, qualitative rigor based on credibility, transferability, dependability and confirmability (Lincoln & Guba, 1985; Gunbayi, 2024) was maintained throughout all stages of the research process. To ensure the reliability and accuracy of the study, methodological steps were carefully planned, systematically implemented, and thoroughly documented. From the design of the research to the analysis of the data, all phases were conducted in accordance with qualitative research standards; the literature was reviewed in detail, and the methods to be used were selected with great care. During the data collection process, school administrators were interviewed directly by visiting their schools, and all interviews were conducted face-to-face. Interview dates were arranged in advance based on the availability of the school principals, and at the beginning of each interview, participants were reminded of the purpose of the study, confidentiality principles, and the ethical guidelines that the researcher was committed to following. Semi-structured questions were posed in a conversational manner, creating a comfortable and open atmosphere for the participants.

All interviews were audio-recorded, and the recordings were later transcribed meticulously by the researcher. During the data analysis process, participants' responses were compared and grouped according to similarities, differences, and thematic patterns. The questions included in the semi-structured interview form were evaluated together with the experiences conveyed by the participants, and findings were used to generate conclusions and recommendations that aligned with the purpose of the study. In this way, the research process reflects the standards commonly emphasized in the qualitative research literature, including reliability, validity, data saturation, systematic documentation, and researcher neutrality.

### ***Data analysis***

In this study, comparisons were made, and consistencies and overlaps among the participants' responses were identified. Both the semi-structured interview form and the specific narratives shared by the participants were examined, and recommendations were developed based on the information obtained. In qualitative research, the goal is not to reach conclusions through numerical data, but rather to provide the reader with a descriptive and realistic portrayal of the phenomenon under investigation. Nevertheless, it is possible to conduct certain numerical analyses on data collected through qualitative methods (Gunbayi, 2023).

Data analysis begins with the interviews conducted with the participants. During the analysis process, the data are continuously documented and subsequently categorized. Interview transcripts are regularly revised throughout the process (Cohen, 2007).

From an epistemological perspective, this study is grounded in the interpretive (hermeneutic) paradigm. Since the research aims to reveal school administrators' views, interpretations, and experiences regarding effective schools, the process of knowledge production focuses on interpretation, meaning-making, and understanding social reality from the perspectives of the participants. Additionally, in the findings and discussion sections, the study incorporates a technical knowledge interest by offering practical recommendations for improving school effectiveness, and an emancipatory knowledge interest by identifying existing administrative and organizational issues in Türkiye and highlighting the need for transformation.

## Findings

After the analysis of the literature and data collection tools, the themes were categorized as stated in the research method. These themes are listed as follows: effectiveness and efficiency, effective school, structuring in an effective school, practices in an effective school, the roles of stakeholders, and models designed to improve the effective school.

All participants focused on the existence of a predetermined goal for effectiveness. Achieving these goals, which were decided with the participation of stakeholders, constitutes the basis of effectiveness.

*"According to my way of thinking, the concept of effective means being able to perform a given task in accordance with its purpose. In other words, it means performing the task with high performance and in the way that is expected." (K4,1)*

*"When we look at the literature, the indicator of being effective is the level of achieving the goals." (K6,1)*

For some school principals (K7, K10, K5), goals refer to the general aims of Turkish National Education, while for others (K6), they represent a developmental process related to self-actualization.

*"So if a school is an effective school, the concepts and goals it sets should be more universal. It should be a place where students can look more broadly, be freer, and develop themselves. Actually, the school should be such a place even before being an effective school. Those who can achieve this best — those who can reach these goals — are effective schools." (K6,1)*

*"A school that raises its students in line with the aims of Turkish national education, that prepares our children properly for future generations, and where teachers and staff are happy comes to my mind." (K7,1)*

Although more than half of the participants (11 participants) could not define efficiency, they expressed their opinions regarding the fulfillment of needs and its necessity.

*"To reach everyone: the student, the administrator, everyone. That is, to meet expectations, to ensure easy communication. To be able to meet expectations." (K1,1)*

*“Preparing the equipment in accordance with today’s conditions, being able to keep up with the expectations and developmental speed of our students especially in the information age. And being able to provide services that meet these expectations for our teachers and all staff in the school.” (K1,1)*

Eight participants emphasized the necessity and inevitability of change, stating that schools must adapt to changes in order to be effective.

*“When an effective school is mentioned, I understand a school that is effective in every sense—not only academically but also socially, artistically, and in sports. If a school adds value to its environment or neighborhood, it is an effective school. If I can influence the behavior of the students in this neighborhood, if I can — by saying I, of course I mean the school — lead teachers and students toward desired behaviors, then it is my effective school. If I add value to my environment... For example, if compared to the past I can add something positive; if I can reduce theft incidents, even simple ones; then I have begun to change something. Or if children greet each other in the neighborhood, use kind words, and there is no swearing, then it is effective.” (K9,1)*

Nine participants stated that mission and vision should be prepared in line with goals and that they are among the most important factors of an effective school. They also emphasized that mission and vision differ not only between rural and urban school contexts, but also significantly among schools within the same province.

*“When we think of schools that provide education in line with the goals stated in their mission and vision, such schools come to mind. In this sense, we can think of it as an educational model formed by conducting student-centered activities that highlight students.” (K3,1)*

*“A school is as good as its principal. If the principal can plan for the future... I have been an administrator for 20 years. I have seen many schools. For example, teachers who visit schools or work in different schools know this better, or they notice it better when administrators change. You look at it and see that some schools in Antalya that had strong vision and were effective suddenly move in a completely different direction. Why? Because they cannot carry the same momentum forward. Or the opposite happens: suddenly the school shines and moves forward. This happens due to the perspectives and efforts of the principal and the assistant principals.” (K2,1)*

According to 14 school administrators, student-centered activities constitute the foundation of an effective school. They emphasized the contribution of artistic, social, and cultural activities to student development and drew attention to the necessity of going beyond routine behaviors, critical thinking, and creative and developmental activities rather than solely focusing on academic achievement.

*“Children are mostly social, that is, in our school, for example, in terms of both clubs and individual sports, and in terms of individual abilities, there are many children who participate in activities with the support of parents and the school. These are more common in effective schools.” (K2,1)*

Eight participants stated that discipline, punishment, and reward in an effective school should be intertwined with a flexible learning environment, emphasized the importance of school climate and institutional culture, and referred to needs-based planning.

*“Successful staff should be rewarded. It creates a climate in the institution. It creates an institutional culture. You celebrate birthdays, when someone buys a house you buy a gift and bring it, when they are sick you visit them collectively. There is a ceremony in the school. You teach the new students a chant. The school has its own anthem. The school has its own climate. Just as a flower grows and flourishes in its own climate, a child also needs to have a climate in*

*the school they come to so that they can grow. Likewise, teachers should develop in this climate. Administrators should also grow in this climate.” (K4,1)*

Thirteen participants expressed the dimension of efficiency in effective schools by presenting their views on preparing students for higher levels of education, raising them in line with the aims of Turkish National Education, and using existing resources effectively without waste.

*“Yes, people say this is a good school, an effective school, and during registration periods they even try to change their home addresses to get into these schools. In such schools, bus services are more common. Parents are more involved. Students act according to their goals and objectives. Children are mostly social; in our school for example, in terms of clubs, individual sports, individual talents, there are many children who participate in activities with the support of their families and the school. In effective schools, this is more common. For example, last year we had about 12 to 15 medals individually, related to the individual efforts of students encouraged by their families. Therefore, if the administration is good in an effective school, if teachers are devoted to their work, if children are conscious and disciplined, and if the parent is also included in the process, an effective and disciplined school emerges gradually on its own.” (K2,1)*

Eight participants described the effective school as a place loved by students, parents, and teachers, where they can express themselves comfortably and freely state their needs.

*“If children greet each other in the neighborhood, address each other with kind words, and if swearing and similar behaviors do not exist, it is effective. Or at least let me say this: if children come to school willingly and happily, running to school, then I think I have started to become an effective school. My aim is to add value and make sure each day is not the same as the previous one.” (K9,2)*

Eight participants emphasized the importance of trust in the school, the development of a sense of belonging when needs are met, and the parallel increase in willingness to work as satisfaction rises, and they listed the contributions that happy staff and students make to the school. *“It needs to be in unity with parents. When needed, parents should come to the school willingly. For this to happen, parents must believe in school. Teachers and other staff must be happy. I already mentioned technical laws. Once these things begin, success will eventually come. Efficiency or effectiveness will be inevitable.” (K7,2)*

Ten participants stated that positive and optimistic thinking dominates in an effective school, emphasized the unnecessary nature of negative directives, and mentioned respect for individual rights and freedoms, more democratic and universal values.

*“Saying things like ‘I did it, so it’s done; I tell you to do it, so you will; you will follow the regulations’ actually prevents students from thinking freely. If a student comes here to learn and receive education, they should be able to ask questions, research, think, and direct their thoughts as questions to the other side. While doing so, they should not fear the administrator. They should not fear being scolded or punished. Administrators need to include the student in the process and support this.” (K3,2)*

Five participants emphasized the importance of mutual understanding in an effective school and expressed the necessity of communication.

*“They should not fear being scolded or punished. Administrators must include students in the process. I think administrators need to receive this training and look from the student’s perspective.” (K3,2)*

According to participants’ views, while structuring an effective school, goals must be achieved at the planned level, differences should be created during this process, positive reinforcement should be

prioritized, clear and understandable procedures, criteria, and principles should exist, and employees must continue learning to maintain this efficiency.

Eight participants spoke about the importance of fulfilling goals at the planned level and emphasized acting according to needs and opportunities.

*“Here we generally act according to the expectations of our students. We decide together. We plan according to what they want. We try to meet all the individual expectations of our students. Because as a group, each student is different, has different ideas and expectations. Therefore, we plan in a way that meets the needs of all students. We plan according to their needs in all subjects, including social areas.” (K1,3)*

Half of the participants emphasized the importance of schools going beyond routine behaviors, providing students with different learning environments, and carrying out extra work, stating that students’ desired changes and self-actualization depend on these differences. Descriptions such as “a school hungry for success, students who research and are active, a school that does not repeat itself” were prominent.

*“As I have said from the very beginning in the broadest sense, there are children and young people in an education system. They must actualize themselves, hold on to life, adapt to change, become global citizens, carry peace in their work, look at the world with peace, and stay away from poisonous thoughts such as discrimination and racism. This applies to all children in the world.” (K6,3)*

Half of the participants emphasized that motivation is important in meeting the different expectations and needs of stakeholders in an effective school, and that positive reinforcement can be achieved only through positive communication and cooperation.

Nine participants stated that in an effective school, goals are not achieved randomly, and that clear and explicit criteria are required according to the structure and mission-vision of the schools.

*“In an effective school, there must be criteria. There must be criteria for administrators, for students, for goals. Not randomly like ‘let’s start and see how it goes,’ but they need to be defined more clearly.” (K2,3)*

Seven participants emphasized the importance of being a learning organization so that teachers, administrators, and parents can keep up with the era, follow changes, and develop their own knowledge and skills.

Eight participants stated that there is a significant guidance need for appropriate educational and social activities required by students, and that guidance teachers and classroom teachers can support this, highlighting the importance of school administration guiding teachers.

Nine participants expressed that for schools to be effective, physical needs, classroom maintenance, and materials must be completed through cooperation with TSK, stakeholders, and collaboration. They emphasized the importance of meeting basic needs by mentioning institutional culture and school climate.

With the exception of four participants, eleven participants spoke about organizing task distribution and the importance of acting collectively in decision-making environments.

Participants described the importance of having qualified administrators and teachers, and an educational environment in which all stakeholders participate collaboratively. The vital importance of institutional culture is evident here.

All participants except one emphasized that in an effective school, decisions must be made collectively at every stage, and all stakeholders must participate collaboratively in all activities and processes. They stated that if even one stakeholder is missing, effectiveness cannot be achieved. Under this theme, many interrelated concepts were used by the participants, showing that all of them affect each other in a spiral manner: personnel relations (K4), proper functioning of the institution (K8), internal order (K6), good communication (K1), parents who support the school (K2), teachers acting as a bridge between parents and the school (K4), cooperating parents (K4), parents and cooperation (K5), parents who support the school (K7), institutional culture (K9).

**Table 1.** Themes that emerged in the content analysis

CATEGORIES	CODES
Effectiveness and Efficiency	Goal Orientation
	Needs
	Organizational Adaptation
	Vision and Mission
	Student-Centered Activities
	Flexible and Disciplined Environments
	Efficiency / Promoting Desired Behaviors
Effective School	Beloved School
	Happy Staff and Students
	Optimistic and Positive Attitudes
	Strong Empathy
Structuring in an Effective School	Achieving Planned Goals
	School that Makes a Difference
	Positive Reinforcement / Motivation
	Clear and Understandable Procedures / Criteria / Principles
	Learning Organization
Practices in an Effective School	Guiding School
	School that Meets Physical Needs and Deficiencies
	Human Resources / Organizing School
Roles of Stakeholders	Qualified Teachers and Administrators
	Sense of Participation / Organizational Culture

## Conclusion and Discussion

The first topic related to the themes and results emerging from the interviews is the concepts of effectiveness and efficiency. Barnard (1938) defined effectiveness as “the degree to which the organization achieves its goals” (Balci, 1993). It was observed that all participants were able to explain the concept of effectiveness; however, they confused the concept of efficiency with social activities. According to the participants, schools can be effective if they serve the goals formed with the participation of stakeholders who create the effective school.

In this study, although the participants’ definitions of efficiency did not align with the definitions in the literature, the fact that they expressed their views on the importance and necessity of needs supports the

idea that effectiveness is a concept related to efficiency. According to the participants, goals that allow students to adapt to life, express themselves, and acquire a profession lead student toward achievement and productivity. Additionally, according to the participants, meeting teachers' needs motivates them, makes them feel belonging to the institution, and creates a sense of being valued. Based on the idea that the education system is implemented through schools, the goals of education—and therefore of the school—can be summarized as raising good individuals, good citizens, good producers, and good consumers (Aydm, 2002). Considering this, it is clearly seen that being efficient actually serves being effective.

According to Hoy and Miskel (1996), the most crucial feature of an effective school is the level at which it achieves its purpose and its high capacity to adapt to the environment (Miskel & Hoy, 1996). In the project study titled *Indicators of the Turkish Education System and Effective Schools*, Bakay and Kalem (2009) concluded that the most important indicator of an effective school, according to teachers, was the effectiveness of school processes; and according to principals, it was school climate (Kalem & Bakay, 2009). In this research, it is also seen that participants' views on the characteristics of effective schools directly or indirectly show similarities to these features. In this regard, it can be stated that the most important characteristics of an effective school are first, delivering educational services in the best way; second, giving importance to school–environment relations; and third, giving importance to school climate and culture.

In an effective school, families are aware of and support the school's mission. They are offered opportunities by the school administration to contribute to achieving this mission (Balcı, 2001). The participants' belief that each school has its own unique mission and vision, their view that being effective and efficient can only be achieved through a vision and mission determined according to needs, and that including parents and other stakeholders in this process will increase the impact, overlaps with this point and clearly demonstrates the necessity of mission and vision.

One of the results emerging in this research is student-centered activities. The prerequisite for these activities is ensuring safety and making physical conditions suitable for students. A certain level of minimum resources and facilities must be provided for an effective education system. Schools with effective education systems must provide facilities and equipment that can meet basic health and safety needs for all students (Kemal & Karip, 1996). From this perspective, the participants' statements that physical needs, classroom maintenance, and materials must be completed through TSK, stakeholders, and cooperation for schools to be effective, and their emphasis on institutional culture and school climate in relation to meeting basic needs, support this idea.

It has been emphasized that teachers in successful schools devote more time to teaching, and that teachers and students in these schools participate in more academic activities than those in unsuccessful schools (Celep, 2000). From this perspective, the fact that participants presented their views on preparing students for higher levels of education, raising them in line with the aims of Turkish National Education, and using existing resources effectively without waste aligns with the productivity dimension of effective schools.

According to Karatepe, being in communication with stakeholders affects managerial effectiveness (Karatepe, 2005). Şişman mentioned optimistic and positive attitudes (Şişman, 2002). Gündüz and Balyer (2012) concluded that effective school principals manage conflicts effectively (Gündüz & Balyer, 2012). Considering these statements, it is seen that the participants' descriptions in this study—that all stakeholders should come to school willingly, that school should be a place where they can express themselves freely, that they feel happy and belong, that optimistic and positive environments exist, and that everyone understands each other and experiences strong empathy—are consistent with one another.

According to Koçak and Helvacı (2011), one of the areas in which school principals are effective is human resources management, and one dimension of human resources management is managing conflicts. According to these researchers, for school principals to be effective in the school environment and family dimension, they must introduce the school's mission very well to parents and the school community (Helvacı & Koçak, 2011). The emphasis on task distribution, organizing who will be where

and how, and acting collectively in decision-making environments in this study overlaps with these statements in the literature.

According to Peters and Waterman, excellent organizations are those in which both loose and tight characteristics coexist (Peters & Waterman, 1987). Accordingly, in this study, participants stated that discipline, punishment, and reward in an effective school should be intertwined with a flexible educational environment, emphasized the importance of school climate and institutional culture, and referred to needs-based planning.

Since the school fulfills the function of differentiating the individual through instruction, the attention of school administrators focuses on the demands of society, problems, children, students, parents, and staff (Açıklan, 1998). In this research, it was highlighted that going beyond routine behaviors, providing students with different learning environments, and conducting extra work are important for effective schools; participants concluded that students' desired changes and self-actualization depend on these differences. Descriptions such as “a school hungry for success, active students who research, a school that does not repeat itself” are prominent.

If the school administrator can create an effective culture and an effective school climate, they can increase teachers' motivation and contribute to the development of a healthy school identity (Çelik, 2002). In this context, this research emphasized that while meeting the different expectations and needs of stakeholders in an effective school, motivation is important, and positive reinforcement can be achieved through positive communication and cooperation.

Support from the environment, teacher professionalism, school orientation toward quality, and high expectations regarding achievement can be considered characteristics of effective schools (Girmen, 2006). In this research, participants similarly emphasized the importance of being a learning organization so that teachers, administrators, and parents can adapt to the era, follow changes, and develop their own knowledge and skills. It was concluded that effective schools focus on the necessity and inevitability of change and must adapt to changes to remain effective.

Student-centered activities constitute the foundation of an effective school. The contribution of artistic, sports, social, and cultural activities to student development, the importance of going beyond routine behaviors, critical thinking, and the necessity of creative and developmental activities rather than solely academic achievement were emphasized. Goals should be achieved at the planned level, and actions should be taken according to needs and opportunities. A significant need for guidance emerges for appropriate educational and social activities required by students, and this can be supported by guidance counselors and classroom teachers. Additionally, school administration should guide teachers as well.

Apart from the issues mentioned above, this study once again revealed the lack of supervision in organizations in Türkiye, and school administrators emphasized that the greatest deficiency on the way to becoming an effective school arises from this gap.

### ***Recommendations***

In relation to the school administrator dimension, administrators should visit classrooms and implement directive supervision by guiding teachers in areas where deficiencies are observed during lessons. Administrators should reward and encourage all kinds of success that occur in the school. More in-service training activities should be organized in line with needs to improve teachers' and administrators' insufficient knowledge, skills, and professional competencies; they should be convinced of the contributions of these programs, and support should be provided to ensure participation. An improvement is needed in reducing the bureaucratic workload of school administrators. Thus, school principals will be able to better organize, manage, and supervise instructional activities and devote more time to students and teachers. School principals should be appointed based on merit, selected according to specific criteria and principles, and subjected to routine evaluations throughout their service to measure their performance. School administration should possess characteristics such as being informative, sharing-

oriented, fair, adaptive to changes, capable of coordinating division of labor and duties effectively, able to foresee and solve problems, competent and knowledgeable, encouraging teamwork, responsive to staff needs, prioritizing employee satisfaction, leading the creation of more democratic learning environments, open to innovation, ready to generate different ideas, emotions, and concepts, able to utilize available resources efficiently without waste, and capable of going beyond routine behaviors. School principals should be equipped with the necessary knowledge, skills, and attitudes regarding instructional leadership.

In relation to the teacher dimension, teachers should maintain high expectations for students and be persuasive that students can succeed. They should be supported in their professional development and plan and use academic learning time effectively and efficiently. They should embrace the school climate jointly created by school stakeholders and remember that they are teachers of all students, not only successful and active ones. They should act in a student-centered way and, in addition to academic achievement, prepare activities in artistic, sports, cultural, and scientific fields according to students' interests and needs. They should be open to change and criticism, allow students to express themselves, work voluntarily and willingly while fulfilling their duties, create more free and human rights-respecting learning environments, possess strong empathy, trust the institution they work for, adapt to today's technologies and changes, organize extra developmental activities for students outside standard learning settings, genuinely make every effort, be devoted, guide students toward critical thinking, serve as a bridge between parents and students, and possess objective and fair characteristics.

In relation to the student dimension, students should be provided with guidance services to help them understand what is expected of them and to believe that they can succeed. Learning should be carried out in a cooperative environment distant from competition, and their expectations regarding achievement should be kept high. They should be encouraged regarding responsibility and taking on tasks and strengthened with alternative choices. Their correct and successful behaviors should be rewarded, and positive reinforcements should be applied to ensure continuity and to set an example for other students. Students should be evaluated frequently and systematically and should possess characteristics such as being orderly, rule-abiding, respectful, completing their work on time, curious, investigative, peaceful, and cooperative.

In relation to the school program and the teaching-learning process dimension; emphasis should be placed on activities designed to support students' academic, social, artistic, cultural, sports, and individual development, and the expectations and needs of students and parents should be prioritized in teaching-learning processes. Teaching-learning environments should possess features that facilitate effective teaching and learning and should be supported by educational technologies. Schools should have a strong physical structure capable of ensuring educational effectiveness. Collaboration among teachers, administrators, and students must be established in the school. It should not be forgotten that success in an effective school is the joint product of coordinated and effective efforts by students, parents, administrators, teachers, etc. Schools should focus on quality and equity. Many effectiveness models have been developed so far, and some of their assumptions differ from one another. Perhaps a synthesis of these models may lead to a more accurate definition of effectiveness. The teaching-learning environment should possess characteristics where flexible and disciplined settings coexist, more universal goals exist, students can think more freely, talents are discovered, students gain preliminary life experiences, order is present, student expectations are prioritized, employees and students are happy, the school is hungry for success, non-repetitive, structured according to specific criteria rather than randomly, trust-building, containing transparent processes, and responsive to needs.

In relation to the school culture and environmental dimension; an open school climate in which effective communication and interactions exist should be established, and opportunities should be provided for everyone to participate in decision-making processes on matters that concern them.

In relation to the school environment and parents dimension; attention should be given to school-environment relations, efforts should be planned to ensure that schools receive greater support from society, and environmental education activities should be organized to ensure school-parent closeness and harmony. Guidance activities should be conducted to ensure that parents are aware of what the school

expects from them and take responsibility accordingly. Encouraging activities, meetings, and events should be planned to increase parents' visits to the school, and their participation in decisions concerning the school and teaching-learning processes should be ensured.

The recommendations for further research in this field can be listed as follows: This study was conducted in the Muratpasa district of Antalya province. Effective school research should be carried out within a project, with a larger budget, over a longer period, in a more comprehensive manner, and with a larger team, and should also be conducted in other provinces for comparison. Because when the literature is examined, it is seen that more such research is conducted in metropolitan cities; however, in some smaller cities, no research has been conducted. Each dimension of effective schools should be addressed individually, and studies should be conducted both separately and together. Since there is an insufficient number of studies on school effectiveness and student achievement, this topic can be explored in particular. Effective school research has mostly been conducted quantitatively, and qualitative studies have been based on the views of administrators and teachers; therefore, it can be made more comprehensive by including parents and students as well. Effectiveness is a concept with a strong qualitative dimension; thus, more qualitative research can be conducted.

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I hereby declare, on my honor, that I wrote this master's thesis without resorting to any means or assistance that would violate scientific ethics and academic traditions, that the works I have benefited from consist solely of those listed in the references, and that I have properly cited them each time I made use of them. I acknowledge that, should the institute determine at any time that a situation contrary to this declaration has occurred, I will accept all ensuing ethical and legal consequences. Also this searching was attended the 6th International Conference on Global Practice of Multidisciplinary Scientific Studies, held on April 9-16, 2024/ Lisbon, Portugal as an oral presentation.

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### Conflicts of interest

No conflicts of interest are declared by the author.

### Author Contribution

Corresponding author Özlem Güngören Pazzanese: Conceptualization, data refinement, research, methodology, original drafting, review, and editing

Süleyman Karataş: Supervision, writing-reviewing and editing

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### Ethics Approval

In the writing process of the study titled " **School administrators’ views on effective school development: A case study**", scientific, ethical and citation rules were followed; It is committed by the author of this study that no falsification has been done on the data collected. It accepts that "Journal of Action Qualitative & Mixed Methods Research and Editor" has no responsibility for all ethical violations that may be encountered, that all responsibility belongs to the authors and that the study has not been submitted to any other academic publication environment for evaluation.

### Institutional review board (IRB) approval

Institutional Review Board (IRB) approval of this research was obtained from Akdeniz University Social Sciences Ethics Committee at the meeting of 20 decision numbered 244 on November 30<sup>th</sup>, 2020.

### Data Availability Statement

Anonymized data from this study can be used upon request [ozlemgungorenel@gmail.com](mailto:ozlemgungorenel@gmail.com)

## Thematic analysis in qualitative research: Steps, benefits, and challenges

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**Abstract.** This study examines the methodological structure, benefits, and challenges of thematic analysis through a comparative exploration of three case studies. Guided by three research questions, the study first clarifies the fundamental steps of thematic analysis, highlighting their importance for rigor and transparency in qualitative research. It then identifies the main advantages of this approach, including its flexibility, capacity to organize large volumes of data, ability to detect recurring patterns, and contribution to generating meaningful and theoretically grounded insights. The study also addresses key challenges, such as coding subjectivity, ambiguity in theme definition, and the risk of oversimplifying complex data, emphasizing the need for reflexivity, systematic documentation, and iterative theme review to ensure validity and reliability. Integrating theoretical perspectives with practical examples from multiple case studies demonstrates that thematic analysis remains a robust and adaptable methodological tool across diverse research contexts. This integrative approach highlights the method's capacity to generate rich, nuanced insights while maintaining analytical rigor.

**Keywords:** Qualitative research, thematic analysis, research contexts, interpretive inquiry, theoretical perspectives, empirical insights

### Introduction

Thematic analysis is a central approach in qualitative research, widely used to identify, analyze, and report patterns (themes) within textual or narrative data. This methodology is not limited to describing data, but allows for in-depth interpretation, offering insights into underlying meanings, relationships, and structures present in participants' experiences, perceptions, or practices (Braun & Clarke, 2021; Kiger & Varpio, 2020; Thomas & Harden, 2008). Nowell et al. (2017) add that one of the most valuable aspects of thematic analysis is its flexibility. Thematic analysis can be applied in various disciplinary contexts, from social sciences, psychology, education, and health to organizational and entrepreneurship studies (Byrne, 2022; Kushnir, 2025; Pepper et al., 2023; Raimi et al., 2023).

In the context of qualitative research, we can consider that thematic analysis plays multiple roles. First, it functions as a data organization tool. Researchers often deal with significant volumes of interviews, transcripts, documents, or field observations. Thematic analysis reduces this complexity by grouping information into meaningful categories. This not only facilitates understanding but also creates a structure that guides the interpretation and presentation of results. Second, Pearson et al. (2025) point out that thematic analysis serves as a means of revealing implicit meanings. By identifying recurring patterns, the researcher can infer cultural norms, shared values, or underlying social processes that would not be evident through simple quantitative or descriptive approaches. For example, in studies on entrepreneurship such as those conducted by Kurteshi & Almeida (2025), thematic analysis can reveal how personal experiences and collaborative networks shape collective or individual entrepreneurial identity. Third, Sundler et al. (2019) confirm that this approach contributes to the robustness and validity of qualitative research. Through rigorous and systematic data coding, thematic analysis ensures that emerging themes are not merely superficial interpretations but grounded representations of the data. In

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addition, thematic analysis allows for the triangulation of information from different sources, reinforcing the credibility of the findings (Ahmed, 2024; Carter et al., 2014; Farquhar et al., 2020; Jonsen & Jehn, 2009). Finally, the importance of thematic analysis in communication and transmission of results cannot be overlooked. Wilson (2025) notes that by structuring the results around clear and articulated themes, it becomes easier for the reader to understand the findings and relate them to the existing literature, facilitating the construction of theoretical knowledge.

This study is justified for several reasons related primarily to methodological gaps, scientific rigor, and the practical applicability of qualitative research. First, although thematic analysis is widely used, there is still a diversity of interpretations and applications of the methodology. Many researchers apply thematic analysis inconsistently, with varying levels of rigor, coding, and theme definition. This variability can compromise the credibility of empirical studies, making it difficult to establish clear methodological standards. Thus, conducting a systematic study on the steps, benefits, and challenges of thematic analysis contributes to standardizing practices. The aim is to provide clear, well-founded, and critically informed guidance for researchers across different fields, positioning the paper as a methodological contribution that strengthens analytical rigor rather than as a source of new theory. Second, there is a need for a critical understanding of the benefits and limitations of thematic analysis. Although valued for its flexibility and ability to extract meaning from complex qualitative data, the methodology also presents challenges, such as subjectivity in coding, the risk of oversimplifying data, and difficulties in defining themes. A study focused on this topic allows us to identify these limitations and propose mitigation strategies. Furthermore, qualitative research is rapidly expanding in various fields, and the data obtained is often complex and dense. In this context, understanding how to apply thematic analysis in a structured and systematic way is essential for transforming raw data into useful knowledge. Finally, the study is necessary to strengthen the methodological literacy of researchers, especially those who are new to qualitative research.

In the context of this study, three relevant research questions are formulated, each aligned with one of the central elements of the study: methodological procedures, advantages, and difficulties of thematic analysis. The research questions include:

*RQ1: What are the fundamental steps of thematic analysis in qualitative research?*

This question explores the methodological structure of thematic analysis, one of the central focuses of the study. Understanding the steps (e.g., from familiarization with the data, through coding, to the definition and revision of themes) is crucial to ensuring rigor and consistency in qualitative research. Clearly identifying these steps allows researchers to apply thematic analysis in a systematic and transparent manner, avoiding arbitrary interpretations of the data.

*RQ2: What are the main benefits of using thematic analysis in qualitative studies?*

This question investigates the advantages of thematic analysis, such as the ability to identify recurring patterns, organize large volumes of data, reveal underlying meanings, and contribute to the construction of theoretical knowledge. Exploring the benefits helps justify the methodological choice by showing how this approach adds value to the research.

*RQ3: What challenges do researchers face when applying thematic analysis, and how can these be mitigated?*

This question addresses a critical dimension of the study by examining the difficulties inherent in thematic analysis, such as subjectivity in coding, ambiguous definition of themes, or the risk of oversimplifying the data. Identifying these challenges and discussing mitigation strategies is essential to increase the validity and reliability of the results produced by applying thematic analysis.

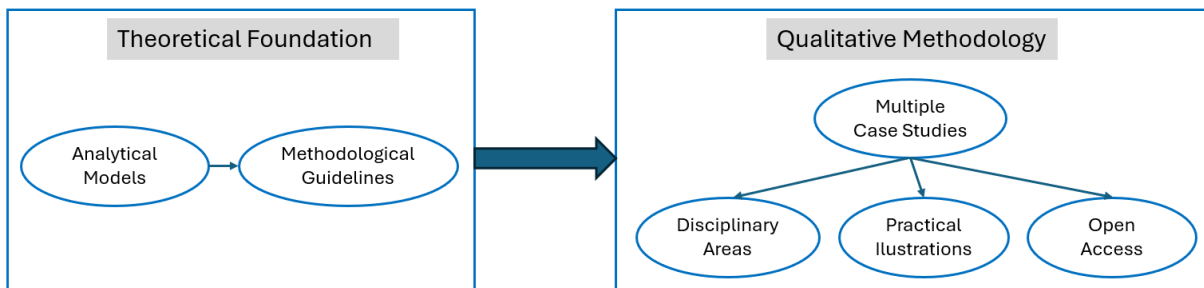
The rest of this paper is organized as follows: it begins by presenting the methodology adopted in this study and presents the three case studies that are used as a reference for applying the three research

questions. After that, the results are presented, organized according to the research questions. Next, the discussion of the results is explored, seeking to highlight the innovative and distinctive aspects of the results found. Finally, the main results are summarized and suggestions for applying the thematic analysis are provided.

## Methodology

This study sought to complement a solid theoretical approach based on an analysis of literature in the field with the inclusion of a qualitative methodological approach supported using multiple case studies and practical examples. This methodological option is particularly appropriate when the objective is to understand an analytical process in depth, as it is experienced in real research contexts, allowing us to capture the complexity, the decisions involved, and the variations in the application of the method (Bartlett & Vavrus, 2016; Ridder, 2017). Furthermore, the choice of case studies makes it possible to analyze thematic analysis as it occurs in concrete situations. For example, this analysis aims to include projects carried out in different disciplinary areas, studies with different types of data, or investigations conducted by teams with different levels of experience. This diversity aims to offer a comparative view of how the steps of thematic analysis are operationalized in practice, from familiarization with the data to the review and definition of themes. The aim is that by observing the process as it unfolds, it will be possible to identify nuances that are not explicitly stated in methodological manuals, such as adaptations made by researchers, difficulties encountered throughout the stages, and strategies used to ensure rigor and thematic consistency. At the same time, the use of practical examples from the selected cases adds an illustrative and pedagogical dimension to the study. These examples demonstrate how methodological decisions are made at different stages, clarifying how themes emerge, how codes are constructed, and how interpretations are articulated with empirical evidence. Furthermore, the examples make tangible the benefits associated with thematic analysis and also the mitigation strategies that have been adopted in practice.

Figure 1 summarizes the various phases of the project. In the first phase, a theoretical foundation for thematic analysis is established, considering seminal studies in this field to analytically characterize its model and identify methodological guidelines. After that, a qualitative methodology is applied, which involved the selection of multiple case studies involving various disciplinary areas, presenting real cases of thematic analysis application, and made available to the community under an open access license.



**Figure 1.** Phases of the methodological process

The identification and collection of case studies followed a structured strategy to ensure both sufficient analytical depth and empirical relevance. The choice of three areas (i.e., social sciences, education, and entrepreneurship) allows for different modes of thematic analysis to be captured, justified by their consolidated tradition of qualitative research and the diversity of phenomena they study, thus enriching the understanding of the steps, benefits, and challenges of the method. The strategy began with the definition of selection criteria to ensure comparability and, at the same time, the necessary variety. Each case must explicitly use thematic analysis, document the analytical process in detail, and have been developed recently, allowing current practices to be captured. Thus, only case studies published in the last three years (i.e., 2023 to 2025) were considered. In addition, each area should represent a distinct

data production context, reflecting the breadth of applications of the method: in-depth interviews in the social sciences, student narratives or pedagogical practices in education, and reports from entrepreneurs, institutional documents, or field diaries in entrepreneurship. This diversity ensures that thematic analysis is observed in heterogeneous scenarios, revealing both its potential and its limitations.

Finally, it is important to justify the three areas chosen for the case studies. The justification for including the industrial engineering and social sciences lies in the fact that they are a field where thematic analysis has a long tradition and where complex and subjective phenomena are often addressed (Anderson et al., 2021; Khan et al., 2021; Roopa et al., 2024; Zougris, 2025). This allows us to observe the method applied to topics such as identities, social relations, cultural practices, or individual perceptions, offering rich examples of interpretive coding. The field of education, in turn, presents contexts where thematic analysis is used to understand pedagogical experiences, learning processes, and school dynamics, allowing us to observe how the method adapts to institutional contexts and data from participants with different levels of reflective literacy (Ceylan & Çomoğlu, 2022; Kamran et al., 2024; Veres et al., 2025; Xu & Zammit, 2020). Finally, entrepreneurship is an emerging field in qualitative research, especially in the exploration of entrepreneurial narratives, identity creation processes, and team dynamics (Bürger & Volkmann, 2020; Duong et al., 2025; Toledano & Horie, 2025). Including it broadens the scope of the study and demonstrates the versatility of thematic analysis in applied and practice-oriented domains.

Table 1 provides a brief overview of the case studies included in this manuscript. Information was collected on the objectives, main results achieved, and contributions made by these studies. Sovacool et al. (2023) falls within the intersection of the fields of industrial engineering and social sciences; Cibu et al. (2025) is related to the field of education; while Sampaio & Sebastião (2024) focuses on the field of entrepreneurship.

**Table 1.**

Overview of the case studies included in this research

Study	Purpose	Findings	Contributions
Sovacool et al. (2023)	The study aims to synthesize theories and frameworks on industrial socio-technical change for a low-carbon future.	The study identifies 88 distinct theories related to industrial decarbonization and socio-technical change across approximately 71 years of literature.	The study provides a foundation for researchers addressing industrial decarbonization across theoretical traditions.
Cibu et al. (2025)	The study aims to provide a comprehensive, systematic review of scientific literature on the use of large language models (LLMs) in education.	The authors analyzed 507 documents from 322 sources, identifying dominant themes in LLM research in education through topic modeling and thematic mapping.	The main contribution is to offer a structured “map” of LLM applications in education, identifying which areas already have greater scientific output and which topics are emerging.
Sampaio & Sebastião (2024)	The article provides a thematic analysis of social innovation and entrepreneurship literature, examining publications, emerging themes, trends, and discourse over time.	The database used involved 6,646 publications (obtained via Web of Science) related to the topic during the period studied. Among the central themes identified were Sustainability, Social Enterprise, and Co-Creation.	The study offers a systematic, longitudinal overview of social innovation and entrepreneurship research since 2012, highlighting evolving themes.

## Findings

**RQ1: What are the fundamental steps of thematic analysis in qualitative research?**

Table 2 provides a comparative table summarizing the phases of thematic analysis as applied in the three referenced studies. Because each article structures its analysis slightly differently, the table synthesizes their methodological steps into comparable stages. In considering the phases of thematic analysis, we followed the proposal presented by Braun & Clarke (2006) and Maguire & Delahunt (2017), which are generally consistent and argue that the process begins with the researcher familiarizing themselves with the data, followed by an iterative process of generating initial codes and subsequently refining and stabilizing the themes, culminating in the production of the analytical report. This model follows the principles of continuous reflexivity as proposed by Pearson et al. (2025), which involves critically reflecting on analytical decisions, the researcher's position, interpretive coherence, and the impact of these factors on the construction of themes.

**Table 2.**

Phases of thematic analysis in the three studies

Phases	Sovacool et al. (2023)	Cibu et al. (2025)	Sampaio & Sebastião (2024)
1. Familiarization with the Data	Full review of conceptual frameworks and typologies on sociotechnical and low-carbon transitions; iterative reading of selected theoretical sources.	Comprehensive reading of studies included in the systematic review; initial annotation of how LLMs are used in education.	In-depth reading of the literature corpus on social innovation and social entrepreneurship, including historical and conceptual contributions.
2. Data Collection & Extraction	Extraction of definitions, model components, transition mechanisms, and assumptions from the frameworks and typologies.	Systematic extraction of metadata, methodological features, educational applications, and LLM use-cases.	Extraction of textual segments relating to themes, discourses, evolution of terminology, and research approaches.
3. Initial Coding	Coding of elements such as transition drivers, system components, innovation pathways, theoretical orientations.	Coding of educational purposes, LLM functions, learning outcomes, benefits, risks, and pedagogical implications.	Coding of themes such as social value creation, innovation processes, entrepreneurship models, actor roles, and contextual factors.
4. Searching for Themes	Grouping coded elements into higher-level categories: conceptual foundations, industrial transition mechanisms, typology patterns.	Clustering codes into topics (e.g., assessment, tutoring applications, content generation, ethical issues). Topic analysis complemented thematic grouping.	Categorizing codes into major themes: discursive evolution, recurring research topics, emerging trends in social innovation and entrepreneurship.
5. Reviewing & Refining Themes	Refinement to ensure coherence among frameworks; comparison of overlapping constructs and theoretical gaps.	Validation of topics/themes across included studies; merging overlapping categories and removing weak or inconsistent themes.	Refinement of themes to account for disciplinary overlaps; ensuring thematic patterns accurately represent discourse in the field.
6. Defining & Naming Themes	Final labeling of meta-themes (e.g., “industrial sociotechnical pathways,” “low-carbon transition mechanisms,” “framework typologies”).	Naming final themes and subthemes that represent the types of educational applications and associated outcomes.	Naming core themes that capture the landscape of social innovation and social entrepreneurship scholarship.
7. Producing the Report	Integrating themes into a narrative describing how theories of sociotechnical change are structured and how	Reporting thematic/topic clusters, illustrating patterns in LLM educational use and research gaps.	Producing a thematic map of research evolution, highlighting discursive patterns, trends, and knowledge gaps.

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they inform low-carbon transitions.

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Although the three studies share the overarching goal of using thematic analysis to analyze the data, each conceptualizes and applies thematic analysis in ways that reflect its epistemological stance and intended contribution.

In Sovacool et al. (2023), thematic analysis is conceptualized primarily as a method for synthesizing conceptual frameworks and typologies. The data are not empirical texts or interview transcripts, but theoretical models related to sociotechnical and low-carbon transitions. Consequently, thematic analysis functions as a tool for structuring the theoretical landscape, identifying recurring conceptual building blocks, and clarifying how frameworks approach transition mechanisms. The process is therefore more conceptual and integrative than interpretive. The authors use thematic analysis to group theoretical constructs, detect overlaps, and reveal inconsistencies across industrial transition theories. Themes emerge from comparing underlying assumptions, mechanisms, and structural elements of existing frameworks. Thematic analysis becomes a way to industrialize theories, which is a method of turning fragmented conceptual contributions into a coherent meta-perspective. It is more deductive than inductive because the analytical units (e.g., framework structures, definitions, mechanisms) are already conceptually articulated in the literature.

In Cibu et al. (2025), thematic analysis is embedded within a systematic review workflow and is combined with topic modeling. Here, thematic analysis is conceptualized as a dual-purpose technique: (i) to qualitatively interpret the patterns generated by computational topic analysis, and (ii) to frame emerging categories of how LLMs are used in educational contexts. This hybrid approach reflects a more method-driven and exploratory conceptualization of thematic analysis. The authors treat themes as patterns of application, benefit, concern, or pedagogical role across the reviewed studies. The analysis is semi-inductive: themes arise from the reviewed corpus but are guided by research questions about educational uses and implications. Thematic analysis in this context is also descriptive and classificatory. Its function is to map the field, rather than to interpret deeply or theorize.

Sampaio & Sebastião (2024) use thematic analysis in a more interpretive and discourse-oriented way. The focus is not only on identifying major research themes but also on tracing the discursive evolution of concepts within social innovation and social entrepreneurship. Here, thematic analysis is conceptualized as a method for uncovering how ideas, narratives, and theoretical constructs evolve over time. The process is more inductive and interpretatively rich compared to the previous case studies. The authors treat the literature corpus almost like a qualitative dataset, analyzing how different streams of thought have shaped the field. Themes represent discourses, conceptual trajectories, and research perspectives, making thematic analysis a tool for interpreting meaning and justifying discursive positioning. Thus, the analysis is closer to qualitative interpretivism than the structured synthesis of Sovacool et al. (2023) or the exploratory mapping of Cibu et al. (2025).

***RQ2: What are the main benefits of using thematic analysis in qualitative studies?***

Table 3 provides a comparative table summarizing the main benefits of using thematic analysis in each of the three referenced studies. The three case studies demonstrate the versatility and utility of thematic analysis in different contexts and with different analytical goals.

**Table 3.**

Main benefits of thematic analysis in the three studies

Study	Main Benefits of Thematic Analysis
Sovacool et al. (2023)	<ul style="list-style-type: none"> <li>- It allowed for the systematization and comparison of various scattered theoretical frameworks on socio-technical transition.</li> <li>- It facilitated the identification of recurring conceptual patterns among models and typologies.</li> </ul>

	<ul style="list-style-type: none"> <li>- It made it possible to map gaps, inconsistencies, and overlaps between approaches.</li> <li>- It contributed to organizing the theoretical field and providing an integrated view of theories on low-carbon industrial change.</li> <li>- It helped clarify mechanisms and structural components of existing theories.</li> </ul>
Cibu et al. (2025)	<ul style="list-style-type: none"> <li>- Assisted in the qualitative interpretation of patterns identified by automatic topic analysis.</li> <li>- Enabled the grouping of educational uses of LLMs in a coherent and understandable way.</li> <li>- Facilitated the synthesis of an emerging field, still poorly structured in the literature.</li> <li>- Enabled the identification of benefits, challenges, risks, and pedagogical opportunities associated with the use of LLMs.</li> <li>- Increased the clarity and interpretive depth of the mapping carried out by the study.</li> </ul>
Sampaio & Sebastião (2024)	<ul style="list-style-type: none"> <li>- It enabled the exploration of the discursive and conceptual evolution of the field over time.</li> <li>- It allowed the identification of trends, currents of thought, and dominant discourses in social innovation and social entrepreneurship.</li> <li>- It contributed to a deeper understanding of how ideas are articulated and transformed in literature.</li> <li>- It helped reveal relationships between themes, highlighting theoretical tensions and convergences.</li> <li>- It provided a solid foundation for building a holistic and critical view of the field.</li> </ul>

In Sovacool et al. (2023), thematic analysis is primarily leveraged to systematize and organize theoretical frameworks related to sociotechnical change and low-carbon transitions. The method allows the authors to identify recurring conceptual elements across diverse models, clarify the mechanisms and components of each framework, and map overlaps and gaps. In this context, the benefit lies in providing a cohesive and integrative overview of a fragmented theoretical landscape, enabling scholars to see patterns and inconsistencies across existing frameworks.

In Cibu et al. (2025), thematic analysis functions as a bridge between quantitative topic modeling and qualitative interpretation. Here, its benefits are more exploratory and classificatory: it enables the grouping of different educational applications of large language models (LLMs) into meaningful categories, identifies pedagogical benefits and risks, and synthesizes insights from a rapidly evolving research field. Thematic analysis enhances the clarity and interpretability of computational patterns, making complex data accessible for conceptual discussion and practical recommendations.

In Sampaio & Sebastião (2024), thematic analysis is applied in a more interpretive and discourse-oriented manner. It facilitates the identification of evolving themes and discourses in literature, helping to trace the development of ideas, highlight trends, and reveal tensions and convergences in research perspectives. The primary benefit here is the ability to construct a deep, holistic understanding of how the field has developed conceptually and discursively. Furthermore, it provides insights into both the substance and trajectory of scholarly debate.

***RQ3: What challenges do researchers face when applying thematic analysis, and how can these be mitigated?***

Table 4 summarizes the main challenges of applying thematic analysis in the three case studies and suggests mitigation strategies for each. The challenges are based on how thematic analysis was used in different contexts (e.g., theoretical, empirical, and discourse-based).

**Table 4.**

Challenges and mitigation strategies of thematic analysis

Study	Main Challenges	Mitigation Strategies
Sovacool et al. (2023)	<ul style="list-style-type: none"> <li>- Difficulty in comparing complex theoretical frameworks due to the diversity of concepts and terminology.</li> <li>- Risk of oversimplifying theoretical nuances.</li> </ul>	<ul style="list-style-type: none"> <li>- Develop clear coding and categorization criteria prior to analysis.</li> <li>- Use multiple reviewers to validate the interpretation of themes.</li> </ul>

	- Possible bias on the part of the researcher when interpreting and grouping conceptual elements.	- Maintain detailed documentation of analytical decisions to ensure traceability.
Cibu et al. (2025)	- High volume of data from systematic reviews, making manual coding difficult. - Risk of subjective interpretation of patterns identified by topic analysis. - Difficulty in integrating qualitative and quantitative results.	- Apply digital support tools to organize and code data (qualitative analysis software). - Perform triangulation between codes, topics, and authors to increase reliability. - Establish clear operational definitions for each theme before interpretive analysis.
Sampaio & Sebastião (2024)	- Topics may be vague or overlapping, making it difficult to clearly define them. - Investigator's interpretive bias when analyzing discourses and trends. - Rapid evolution of the field may quickly render topics outdated.	- Implement iterative review and refinement of themes throughout the process. - Use codes and themes defined reflectively, documenting analytical decisions. - Complement analysis with recent literature and multiple sources to maintain relevance.

In Sovacool et al. (2023), the thematic analysis dealt with complex and varied theoretical frameworks, which posed challenges in comparing heterogeneous concepts and terminologies. A significant risk is the oversimplification of theoretical elements, which can lead to the loss of important nuances in the different approaches. In addition, the interpretation and grouping of conceptual elements may reflect the researcher's bias, influencing the way themes are constructed. To mitigate these challenges, the authors applied clear criteria for coding and categorization, involved multiple reviewers in validating interpretations, and documented all analytical decisions in detail, ensuring traceability and consistency.

In Cibu et al. (2025), challenges arise from the high volume of data from a systematic review and integration with automatic topic analysis. Manual coding becomes more laborious, and there is a risk of subjective interpretation of the patterns extracted by quantitative methods. In addition, integrating qualitative and quantitative results in a coherent manner can be complex. To reduce these risks, researchers used digital qualitative analysis tools, operationally defined the themes before interpretation, and applied triangulation by crossing codes, topics, and authors, increasing reliability and interpretive clarity.

In Sampaio & Sebastião (2024), the main challenges relate to the interpretative and discursive nature of the data. Themes can be diffused or overlapping, and researchers run the risk of interpretative bias when analyzing discourses and research trends. Furthermore, the field is dynamic and rapidly evolving, which can quickly render themes outdated. Mitigating these challenges includes iterative review and continuous refinement of themes, reflective and documented definition of codes and categories, and incorporation of recent literature and multiple sources, ensuring relevance and rigor.

## Discussion

Thematic analysis emerges as a versatile and widely applicable methodological tool in scientific research. It has stood out for its usefulness in organizing, interpreting, and synthesizing complex qualitative data, whether empirical or theoretical. In the three case studies analyzed, it is clear that the application of this approach provides significant benefits, although the nature of these benefits varies according to the type of data and the objective of the research. An area common to all studies is the ability of thematic analysis to identify recurring patterns and structure knowledge in a coherent manner, which is in line with studies in the field such as Ayre & McCaffery (2022) and Fryer (2022). In Sovacool et al. (2023), this benefit manifests itself in the systematization of dispersed theoretical frameworks, allowing for an integrated understanding of different approaches to the low-carbon socio-technical transition. In Cibu et al. (2025), thematic analysis enables the organization of educational applications

of LLMs, transforming complex data into interpretable categories. In Sampaio & Sebastião (2024), thematic analysis allows the tracking of discursive evolution and the identification of emerging trends in the field of social innovation and social entrepreneurship.

Another important convergence across the reviewed studies lies in the capacity of thematic analysis to systematically identify conceptual gaps and underexplored domains within complex research fields. Sovacool et al. (2023) illustrate this potential by mapping overlaps and omissions across competing theoretical models, thereby clarifying areas of conceptual redundancy and fragmentation. Similarly, Cibu et al. (2025) employ thematic analysis to expose research blind spots in the application of large language models in education, highlighting uneven thematic coverage and emerging but insufficiently theorized topics. Sampaio and Sebastião (2024) further demonstrate the method's value by uncovering dominant narratives, latent tensions, and shifts in academic discourse over time. Taken together, these studies show that thematic analysis functions not only as a descriptive synthesis tool but also as an interpretive mechanism that enables theory refinement and agenda-setting. This convergence is consistent with recent methodological literature, which increasingly recognizes thematic analysis as a rigorous and flexible approach for synthesizing large volumes of qualitative data, facilitating cross-study comparison, and advancing cumulative knowledge development (Cotton et al., 2024).

Despite the convergences, there are also significant divergences related to the nature of the data analyzed and the degree of interpretation involved. In Sovacool et al. (2023), the analysis is mainly deductive and conceptual, centered on existing theoretical structures, while in Cibu et al. (2025), it is semi-inductive, combining quantitative methods (i.e., topic modeling) with qualitative interpretation. In Sampaio & Sebastião (2024), the approach is clearly inductive and interpretive, focused on discursive analysis and the identification of emerging trends. These differences reflect an intrinsic flexibility of thematic analysis but also point to distinct challenges: the need for clear criteria and multiple validation in Sovacool et al. (2023), the integration of qualitative and quantitative data in Cibu et al. (2025), and the risk of interpretive subjectivity in Sampaio & Sebastião (2024). These disciplinary differences help explain why varying levels of interpretive richness are not only present but necessary. In more theory-driven domains such as entrepreneurship and sustainability studies, interpretive richness is often constrained in favor of conceptual precision and comparability, placing greater emphasis on reflexive rigor through transparent coding rules, cross-validation, and systematic justification of thematic boundaries. In educational and discursive contexts, however, richer interpretation is required to account for contextual nuance, evolving meanings, and actor perspectives, making reflexive rigor less about limiting interpretation and more about critically engaging with the researcher's positionality, assumptions, and interpretive choices throughout the analytical process.

Regarding the challenges of applying thematic analysis, all three case studies confront issues that may affect methodological rigor and analytical reliability, particularly in relation to interpretive bias, reflexivity, and consistency in coding decisions. Interpretive bias is inherent to thematic analysis, as researchers must make successive judgments about what constitutes a relevant code or theme, how categories are constructed and refined, and how patterns are ultimately endowed with meaning. However, what differentiates a merely descriptive application of thematic analysis from a theoretically grounded one is the extent to which this interpretive process is made explicit and critically reflected upon.

In Sovacool et al. (2023), this challenge is especially salient given the analysis of complex and heterogeneous theoretical frameworks. Concepts that appear similar across models often carry distinct epistemological assumptions and normative implications, requiring a reflexive analytical stance to avoid premature aggregation or conceptual flattening. The transition from textual comparison to higher-order theoretical insight thus depends on the researchers' ongoing negotiation between abstraction and contextual sensitivity, a process that is not fully transparent but is central to the credibility of the findings.

In Cibu et al. (2025), the reflexive challenge emerges at the intersection of automated and human-led analysis. While quantitative topic modeling provides an initial structuring of the data, the subsequent

qualitative interpretation of these outputs requires the researcher to actively mediate between algorithmic patterns and theoretical relevance. This interpretive layer introduces subjectivity, as decisions about how to label, merge, or prioritize topics inevitably reflect the researchers' assumptions about what constitutes meaningful educational innovation. A more explicit discussion of how these interpretive choices were interrogated, validated, or revised would strengthen the analytical depth and transparency of the study.

In Sampaio and Sebastião (2024), where thematic analysis is embedded in a discursive and interpretive research tradition, reflexivity becomes even more central. Themes emerge through iterative and critical readings of texts, and judgments regarding relevance, salience, and tension are closely tied to the researchers' positionality and theoretical orientation. Here, the analytical journey from data to insight is less linear and more dialogical, underscoring the need to explicitly articulate how interpretive decisions evolved over time and how alternative readings were considered or bracketed.

These three cases illustrate that the core methodological challenge of thematic analysis lies not only in coding consistency but in making reflexive processes visible through which raw data are transformed into meaningful and theoretically grounded insights. Addressing this challenge requires greater emphasis on reflexive practices (e.g., documenting analytical iterations, justifying thematic boundaries, and critically engaging with one's own assumptions) thereby enhancing the explanatory power and transparency of thematic analysis in complex research contexts.

Finally, current literature such as Finlay (2021) and Fuchs (2023) emphasizes that the reliability of thematic analysis strongly depends on the adoption of methodological strategies that increase transparency, consistency, and reflective rigor. Among these strategies, detailed documentation of the process is essential: recording how codes were defined, how themes were formed, what decisions were made, and for what reasons allows for traceability and analytical justification, serving as a basis for peer review and partial replicability of the study. Iterative review of themes is another essential practice according to Williams & Moser (2019). By repeatedly reviewing the data and themes, the researcher ensures that the themes consistently reflect the content of the dataset, avoiding the formation of superficial or incoherent categories. Moreover, validation by multiple reviewers, when applied, reduces the risk of subjective interpretation, as it allows different perspectives on codes and themes to be compared. The aim is to promote consensus or identify differences that can enrich the analysis.

## **Conclusion**

Thematic analysis proves to be a flexible and effective methodological approach in qualitative research, adaptable to different types of data and research objectives. The comparison between the three case studies shows that, despite epistemological differences, all studies follow similar phases: familiarization with the data, initial coding, identification and refinement of themes, definition and naming, and production of the analytical report. This process is aligned with theoretical models in the field and incorporates continuous reflexivity, allowing researchers to critically evaluate their interpretive decisions. The benefits of thematic analysis include the organization and systematization of knowledge, the identification of recurring patterns and gaps in literature, and the production of interpretable categories.

## **Recommendations**

The comparative analysis of the three case studies provides more than general advice on thematic analysis. Effectively, it offers concrete, empirically grounded guidance that enhances methodological literacy across disciplines. Furthermore, this study highlights not only the procedural steps but also the reflexive reasoning and interpretive choices necessary for robust application.

First, structured planning of coding schemes emerges as a critical skill for researchers seeking methodological rigor. Sovacool et al. (2023) demonstrate that in highly conceptual or theory-heavy

datasets, developing detailed coding tables and pre-defined yet flexible categories allows analysts to preserve conceptual nuance while enabling cross-framework comparison. In Cibu et al. (2025), initial coding had to accommodate patterns identified through automated topic modeling, illustrating the importance of balancing deductive structure with inductive responsiveness. These examples translate into a practical lesson for methodological literacy: researchers must cultivate the ability to anticipate data complexity and design coding strategies that are both systematic and adaptable.

Second, iterative theme review is shown to be an essential analytical competency. In Sampaio & Sebastião (2024), repeated engagement with the literature allowed the identification of emerging, central, and declining themes over time, while in Sovacool et al. (2023), iterative comparison ensured conceptual consistency across overlapping theoretical models. These processes exemplify a core aspect of methodological literacy: understanding that theme refinement is not a mechanical step but an interpretive skill requiring judgment, attention to nuance, and alignment with research objectives.

Third, methodological literacy involves mastering triangulation and collaborative validation. Cibu et al. (2025) highlight the integration of automated and human-coded analysis, demonstrating how cross-validation strengthens the credibility of findings. Similarly, the scale and diversity of datasets in the other two studies suggest the value of involving multiple reviewers to manage interpretive bias. These examples underscore that methodological literacy encompasses both the technical ability to implement analytic procedures and the critical awareness of how researcher choices influence outcomes.

Finally, reflexivity is emphasized across all cases as a foundational competence. Sampaio & Sebastião (2024) show that reflexive engagement enables analysts to navigate interpretive subjectivity in discursive data, while Sovacool et al. (2023) illustrate how transparency in framework selection and synthesis supports conceptual coherence. The lesson for researchers is that methodological literacy includes cultivating an explicit, ongoing reflective stance, which includes several phases such as documenting decisions, revisiting assumptions, and situating interpretations within both theoretical and disciplinary contexts.

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**Conflicts of interest**

No conflicts of interest are declared by the author.

**Author Contribution**

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**Ethics Approval**

In the writing process of the study titled "**Thematic analysis in qualitative research: Steps, benefits, and challenges**", scientific, ethical and citation rules were followed; It is committed by the author of this study that no falsification has been done on the data collected. It accepts that "Journal of Action Qualitative & Mixed Methods Research and Editor" has no responsibility for all ethical violations that may be encountered, that all responsibility belongs to the author and that the study has not been submitted to any other academic publication environment for evaluation.

**Institutional review board (IRB) approval**

Institutional Review Board (IRB) approval is not required for this research.

**Data Availability Statement**

Anonymized data from this study can be used upon request [almd@fe.up.pt](mailto:almd@fe.up.pt)

## Adaptation, validity and reliability of hypoglycemic confidence scale into Turkish: Mixed methods research

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**Abstract.** This study aimed to evaluate the validity and reliability of the Turkish version of the Hypoglycemic Confidence Scale (HCS) and to examine its applicability through qualitative analysis. A mixed-methods embedded design with embedded instrument development and validation variant was used for scale adaptation and validation. The sample consisted of 301 individuals with diabetes attending the endocrinology outpatient clinic of a university hospital. Data were collected using a sociodemographic form, the HCS, the Hypoglycemia Fear Scale, and a semi-structured interview form. Quantitative analyses included descriptive statistics, correlation analysis, Cronbach's alpha, exploratory and confirmatory factor analyses. Qualitative data were analyzed using thematic and descriptive methods. As a result, it was found that the Turkish version of the HCS is a valid and reliable instrument for assessing confidence in managing hypoglycemia among individuals with diabetes. The integration of qualitative findings further supports its clinical applicability. The scale may be useful in nursing education and counseling interventions aimed at strengthening hypoglycemia management confidence.

**Keywords:** Diabetes Mellitus, hypoglycemia, psychometrics, reliability, scale adaptation, self-confidence, validity

### Introduction

Diabetes is a complex metabolic condition that has increased markedly across the globe, reducing quality of life and creating substantial economic pressures on health systems (International Diabetes Federation [IDF], 2025; World Health Organization [WHO], 2016). Today, diabetes stands among the foremost causes of illness and death and represents one of the most expensive challenges in global health (Bommer et al., 2018). Recent estimates show that approximately 589 million adults aged 20–79 are affected by diabetes, a number projected to rise to 853 million by 2050 (IDF, 2025). Such projections highlight the urgency of considering diabetes not merely as an individual medical issue but as a critical public health concern with far-reaching systemic consequences.

Hypoglycemia is among the most common acute complications of diabetes and may carry life-threatening risks for people with either type 1 or type 2 diabetes (American Diabetes Association [ADA], 2024). Studies suggest that nearly 45% of people with type 2 diabetes encounter hypoglycemic episodes, whereas those with type 1 diabetes may experience mild events approximately twice a week, with severe hypoglycemia reported in up to 30% of cases (Davies et al., 2022). Defined by plasma glucose levels falling below 70 mg/dL, hypoglycemia may lead to a wide range of problems such as cognitive

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impairment, behavioral changes, cardiac arrhythmia, visual disturbances, and in severe cases, fatal events (Cryer, 2011; Sircar et al., 2016; Türkiye Endokrinoloji ve Metabolizma Derneği [TEMED], 2020).

The consequences of hypoglycemia go beyond physical health, giving rise to major psychological and social difficulties, including anxiety, social withdrawal, reduced self-assurance, and depressive symptoms (Brown et al., 2019; Seaquist et al., 2013). Therefore, effective diabetes care should address not only blood glucose regulation but also the development of a sense of safety and confidence in dealing with possible hypoglycemic episodes. In this context, hypoglycemic confidence appears as a key psychological concept, representing individuals' self-efficacy and emotional strength in managing risks linked to hypoglycemia (Polonsky et al., 2017).

This study was conducted to adapt the Hypoglycemic Confidence Scale (HCS), first developed by Polonsky et al. (2017), into Turkish and to examine its validity and reliability. Furthermore, a complementary qualitative approach was integrated to examine the practical relevance and contextual applicability of the scale in real-life experiences.

## **Methodology**

This research used a mixed-methods embedded design with embedded instrument development and validation variant, focusing on scale adaptation and validation within a broader framework to provide a comprehensive evaluation via quantitative step based on functionalist paradigm of post-positivism and qualitative phase based on interpretive paradigm of post-modernism (Gunbayi, 2020).

## **Sampling**

The study was conducted between October 2019 and April 2020 at the Endocrinology and Metabolic Diseases Outpatient Clinic of Akdeniz University Hospital. The participants were adults aged 18–65 years who had been diagnosed with Type 1 or Type 2 diabetes for at least one year, were using insulin or a combination of insulin and oral antidiabetic medications, had no known psychiatric or cerebral disorders, were literate, and voluntarily agreed to participate in the study.

A priori power analysis was performed using G\*Power 3.1.9.2 software with a 95% confidence level ( $\alpha = 0.05$ ), 95% statistical power, and an effect size of 0.3, which indicated that a minimum of 254 participants would be required. In validity and reliability studies, it is generally recommended that the sample size be five to ten times the number of items (Esin, 2018). The measurement instrument examined in the study was the Hypoglycemic Confidence Scale (HCS), which consists of nine items.

However, in psychometric research, a sample of fewer than 200 participants is considered inadequate, and at least 300 participants are recommended to ensure a stable and valid factor structure (Şencan, 2005; Gregoire, 2017). Based on these recommendations, a purposive sampling method with a criterion-based approach was employed, and a total of 301 individuals diagnosed with diabetes were included in the quantitative section of the study.

Qualitative data were collected from 12 participants selected using the same criterion-based purposive sampling approach. The data collection process continued until no new data or emerging themes were identified, indicating that thematic saturation had been reached (Creswell & Creswell, 2017).

## **Data collection and analysis**

Quantitative data were analyzed using IBM SPSS Statistics for Windows, Version 25.0, and confirmatory factor analysis was performed with AMOS 21.0. The significance level was set at  $p < 0.05$ . Normality was assessed using skewness and kurtosis values. Descriptive statistics (mean, standard deviation, frequency, percentage), exploratory and confirmatory factor analyses, item–total correlations,

and Cronbach's alpha coefficients were calculated. The Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity were used to evaluate the suitability of the data for factor analysis. Item discrimination was examined using independent samples *t*-tests comparing the upper 27% and lower 27% groups (Tavşancıl, 2010).

Test–retest reliability of the HCS was evaluated using the Pearson correlation coefficient. To assess temporal stability, the scale was re-administered to 75 participants approximately 2 weeks after the first administration. Qualitative data were analyzed thematically and descriptively using NVivo 12 software. Interview recordings were first subjected to descriptive analysis to summarize participants' expressions and provide an overall understanding of their experiences. Subsequently, codes were derived inductively from the data, and thematic analysis was conducted by two independent researchers using NVivo 12 software. Inter-coder reliability was established through comparison and discussion of independently generated codes, and consensus was reached on all themes.

### ***Ethics statement***

Permission to adapt and use the Hypoglycemic Confidence Scale (HCS) was obtained from the original developer, Dr. William H. Polonsky, prior to initiating the study. Ethical approval for the study was obtained from the university's ethics committee (Approval Date: 16.01.2019, No: 53). Institutional permission was also granted (Approval Date: 28.02.2019, No: E.28583). All participants provided written informed consent prior to data collection.

## **Findings**

### ***Participant characteristics***

The study included 301 adults diagnosed with Type 1 or Type 2 diabetes, aged between 18 and 65 years (mean age =  $51.31 \pm 11.83$ ). Of the participants, 55.1% were female and 44.9% were male. Most participants were married (82.7%) and had health insurance coverage (92.7%). Regarding educational background, 60.8% had completed high school, 26.6% held a bachelor's degree, and 12.6% had postgraduate education. A total of 42.2% were employed, while 57.8% were not working. In terms of clinical characteristics, 19.3% had Type 1 diabetes and 80.7% had Type 2 diabetes, with a mean disease duration of  $13.45 \pm 8.21$  years. Of the participants, 27.6% reported a previous hospitalization due to diabetes-related complications. Regarding treatment, 62.8% were using insulin and oral antidiabetic medications, while 37.2% were using insulin only.

### ***Adaptation of the hypoglycemic confidence scale into Turkish***

The adaptation of the Hypoglycemic Confidence Scale (HCS) into Turkish was carried out in two stages:

- Assessment of psycholinguistic properties (language adaptation)
- Assessment of psychometric properties (validity and reliability analyses)

### ***Language adaptation***

The adaptation process followed the translation and cultural adaptation procedures recommended by the World Health Organization and the International Test Commission guidelines (Gregoire, 2017; World Health Organization [WHO], 2019). This included forward

translation, expert panel review, back translation, pre-testing and cognitive interviews, development of the final version, and documentation.

### *Psychometric properties of the hypoglycemic confidence scale*

#### *Validity analyses of the hypoglycemic confidence scale*

The validity of the Hypoglycemic Confidence Scale (HCS) was evaluated through assessments of linguistic, content, criterion-related, and construct validity, as well as findings from individual interviews. Following the translation and adaptation procedures recommended by the World Health Organization, the final version of the scale was obtained. To establish content validity, expert opinions were obtained from 13 professionals (academics, physicians, and nurses). Content validity was evaluated using the Davis technique. The clarity scores for the items ranged between 0.84 and 1. According to Davis, the content validity index (CVI) should exceed 0.80. In this study, all item-level CVI scores were above 0.80, and the overall CVI was calculated as 0.95 (Davis, 1992).

Criterion-related validity of the HCS was established through item analysis based on extreme group means and concurrent validity. Table 1 presents the results of the independent samples t-test and item-total correlation values, indicating item discrimination power. A minimum item-total correlation value of 0.40 is required for adequacy (Şencan, 2005). All items showed item-total correlation values between 0.53 and 0.80. Based on these results, it can be concluded that all items were significantly related to the overall scale.

To determine item discrimination, raw scores were ranked from highest to lowest, and the mean scores of the lower 27% and upper 27% of participants were compared using an independent samples t-test. The difference in mean scores between these groups was statistically significant ( $p < 0.05$ ), indicating satisfactory item discrimination (Table 1).

Concurrent validity was assessed using the Hypoglycemia Fear Survey (HFS), originally developed and psychometrically validated by Gonder-Frederick et al. (2011) and later adapted into Turkish by Erol (2009). A significant, moderate, and negative correlation was found between participants' HCS scores and their HFS scores ( $r = -0.557$ ,  $p < 0.001$ ), supporting concurrent validity.

Construct validity of the HCS was evaluated through confirmatory factor analysis (CFA) based on a theoretical single-factor model. The Kaiser–Meyer–Olkin (KMO) value was 0.913, which is considered “excellent” for conducting factor analysis (Tavşancıl, 2010). Additionally, Bartlett’s test of sphericity was statistically significant ( $p < 0.001$ ), confirming the suitability of the data for factor analysis. Confirmatory factor analysis further verified the single-factor structure of the 9-item scale (Figure 1). Model refinement was performed by correlating error terms with high modification indices (MI). Goodness-of-fit indices indicated good model fit:  $\chi^2/df = 2.303$ , GFI = 0.955, AGFI = 0.955, CFI = 0.971, NFI = 0.950, TLI = 0.960, IFI = 0.971, and RMSEA = 0.066 (Table 3).

#### *Reliability analysis of the hypoglycemic confidence scale*

Table 4 presents the means, standard deviations, and Likert scale distribution for the Turkish version of the HCS. The item means ranged from  $1.97 \pm 0.98$  to  $3.25 \pm 0.83$ . None of the items had a standard deviation of zero. The overall mean score for participants diagnosed with either Type 1 or Type 2 diabetes was  $2.76 \pm 0.65$ , with a minimum and maximum score range of 1.05 to 4.00. An item-total correlation coefficient is considered acceptable when it is positive and greater than 0.25 (Şencan, 2005). As shown in Table 5, item-total correlation coefficients ranged between 0.53 and 0.80. A Cronbach’s alpha coefficient between 0.80 and 1.00 indicates high internal consistency (Tavşancıl, 2010). The Cronbach’s alpha for the HCS was calculated as 0.88, demonstrating that the scale has a high degree of

reliability. No substantial changes were observed in the overall reliability when any individual item was removed; therefore, no items were excluded from the final version of the scale.

For test–retest reliability, the HCS was re-administered to 75 participants after a two-week interval. Test–retest findings demonstrated strong temporal stability ( $r = 0.794$ ,  $p < 0.001$ ). Cronbach’s alpha at retest was 0.85, indicating maintained internal consistency.

### ***Evaluation of the HCS validity through qualitative data***

To assess the construct validity of the Hypoglycemic Confidence Scale (HCS), semi-structured interviews were conducted with participants regarding their experiences and perceptions of hypoglycemic confidence. Qualitative findings confirmed that participants’ narratives aligned closely with the intended constructs of the HCS, offering strong support for the scale’s content and structural validity. The interviews revealed clear congruence between participants’ interpretations and the theoretical framework underpinning each item. Through thematic analysis of the interview transcripts, five main themes and 21 subthemes were identified (Table 6). These themes reflect core dimensions of hypoglycemic confidence in daily life.

#### ***Main Theme 1: Feeling safe***

Taking precautions “For example, we went to Ankara recently with my wife. I made sure to take precautions.” (Participant 8)

Hypoglycemic confidence during sleep

“If my blood sugar is above a certain level, I don’t eat before bed. But if it’s low, I have a snack just in case.” (Participant 11)

Hypoglycemic confidence in social settings

“I already tell my friends what to do in emergencies. They know what’s needed.” (Participant 12)

Measuring blood glucose

“The moment I feel safest is when I measure my blood sugar. That numerical value tells me.” (Participant 2)

Hypoglycemic confidence when alone

“As long as I have my glucagon and glucometer, I feel safe—being alone or in a social setting doesn’t change that.” (Participant 12)

“I eat. I mean, I’m home alone... if they can’t reach me...” (Participant 11)

#### ***Main Theme 2: Avoiding serious problems related to hypoglycemia***

Trying to balance blood glucose

“I reduce the insulin a bit or eat something sugary. That’s how we manage.” (Participant 1)

Maintaining a careful diet

“I’m very careful about what and when I eat and drink. That’s why I rarely experience hypoglycemia.” (Participant 9)

Trusting healthcare professionals

“I’m always under control. I go to the doctor, I get checked regularly. They warn me if there’s an issue.” (Participant 9)

Experience and confidence

“I trust myself. After 13–14 years, I can tell when my blood sugar is dropping.” (Participant 1)

Fear of hypoglycemia

“What I fear most is low blood sugar. I don’t really care if it’s 300. But when it’s low, I struggle.” (Participant 8)

### ***Main Theme 3: Recognizing and managing hypoglycemia***

Sensing the onset hypoglycemia

“I can easily tell when it drops. I sweat heavily. Right away, I know and take action.” (Participant 2)

Having self-confidence

“I can recognize the symptoms, so I feel confident about responding.” (Participant 6)

Utilizing technology

“I trust it because I use specific technology. It generally guides me, shows whether it’s going to rise or fall.” (Participant 12)

Keeping/consuming sugary foods

“I always carry sugar somewhere easy to reach. Just in case.” (Participant 5)

### ***Main Theme 4: Continuing life despite risks of hypoglycemia***

Restriction of daily life

“I wanted to be a football player. I had the talent, but because of this disease, it didn’t happen. We tried alternative paths.” (Participant 12)

Impact of hypoglycemia on social life

“You feel like you’re a half-person... Your social life weakens. I can’t act like a normal person.” (Participant 8)

Trying to keep blood glucose levels high

“I don’t let it drop. I keep it high because I believe it’s safer. The intervention when it’s high is easier than when it’s low.” (Participant 2)

Experiencing exhaustion

“You go weak, your hands and feet fail. It’s terrible.” (Participant 9)

“You’re drained. Nothing’s left.” (Participant 1)

Receiving education

“After the training I received, I’m no longer a new patient. I’ve had diabetes for 10–11 years now.” (Participant 4)

### ***Main Theme 5: Confidence from and in close relatives to manage hypoglycemia***

Relatives’ Trust in the individual

“I think they trust me. I’ve had extreme lows, highs, and after seven years of dealing with this, I believe I have control. They trust me.” (Participant 5)

### Individual's trust in relatives

“My only security is having my wife by my side. She knows my condition and checks on me at night. That's how we try to stay safe.” (Participant 9)

The qualitative findings revealed a strong conceptual consistency between the Hypoglycemic Confidence Scale (HCS) and participants' lived experiences. The theme of *feeling safe* overlapped with the first five items, which assess confidence in managing hypoglycemia during exercise, sleep, driving, social situations, and when alone. The theme of *avoiding serious problems* was associated with the sixth item, while *recognizing and managing hypoglycemia* corresponded to the seventh, both reflecting self-efficacy in prevention and early intervention. The theme of *continuing life despite risks* aligned with the eighth item, whereas *confidence from and in close relatives* was linked to the ninth item. These findings strongly support the content and construct validity of the HCS.

### Discussion

Although previous Turkish adaptations of the Hypoglycemic Confidence Scale have been conducted for specific diabetic populations—Type 1 (Şahin, 2019) and Type 2 diabetes (Büyükkaya Besen & Dervişoğlu, 2021)—the present study differs in scope and methodology. It includes both Type 1 and Type 2 diabetes patients, applies updated international adaptation guidelines, and incorporates a mixed-methods design that combines quantitative psychometric testing with qualitative validation. This broader and more integrative approach enhances the methodological rigor and practical applicability of the Turkish version for diverse clinical contexts.

Hypoglycemia, as an acute complication of diabetes, negatively impacts patients and their families in physical, psychological, and social aspects. Such adverse consequences also interfere with diabetes management and diminish both patients' and families' sense of confidence in coping with the disease (Ahola et al., 2016; Gonzalez et al., 2016; Herbert et al., 2015). Assessing the level of hypoglycemic confidence is thus an essential element of diabetes self-management. Identifying this level allows for the development of targeted strategies aimed at strengthening quality of life and, more importantly, improving hypoglycemic control (Polonsky et al., 2017). In this section, the findings from the Turkish adaptation and psychometric testing of the Hypoglycemic Confidence Scale (HCS) are discussed in relation to validation studies conducted in different cultural contexts.

#### *Validity of the Turkish version of the HCS*

Exploratory factor analysis revealed that the single factor accounted for 52% of the total variance. Subsequent confirmatory factor analysis supported the adequacy of this structure and demonstrated good overall model fit. This finding is consistent with the original validation by Polonsky et al. (2017), where the single factor accounted for 51–74% of the variance across different diabetic populations. Similar one-dimensional structures were also reported in Turkish validation studies by Şahin (2019) and Büyükkaya Besen and Dervişoğlu (2021). In the present study, factor loadings ranged from 0.50 to 0.87, aligning closely with the original findings (0.50–0.92). The model fit indices ( $\chi^2/df = 2.303$ , GFI = 0.955, AGFI = 0.955, CFI = 0.971, RMSEA = 0.066) further confirmed the structural validity of the scale within the Turkish sample.

Criterion validity was evaluated using the Hypoglycemia Fear Survey (HFS) as a benchmark. A significant, moderate, and negative correlation was found between HCS and HFS scores, indicating that higher confidence was associated with lower fear of hypoglycemia. This relationship supports the scale's criterion validity and is consistent with the original and cross-cultural validations. In the Brazilian adaptation (Pastore, 2020) and in Polonsky et al.'s study (2017), similar negative correlations between confidence and fear were observed. These findings collectively confirm that the HCS demonstrates stable

construct and criterion validity and that the association between confidence and fear remains consistent across different cultural contexts.

### ***Reliability of the Turkish version of the HCS***

Reliability analyses indicated that the Turkish version of the HCS is a consistent and stable measure. The Cronbach's alpha coefficient was 0.88, demonstrating strong internal consistency. This value is comparable to those reported in the original study (0.87–0.95) and in the Brazilian adaptation (0.84) (Polonsky et al., 2017; Pastore, 2020). Similar reliability coefficients were also observed in previous Turkish studies, ranging between 0.81 and 0.86 (Büyükkaya Besen & Dervişoğlu, 2021; Şahin, 2019). These findings suggest that the internal consistency of the scale remains stable across different cultural contexts.

Item–total correlations were satisfactory, and no item removal improved the overall reliability, indicating homogeneity among the scale items. The mean total score in the present study ( $2.76 \pm 0.65$ ) was slightly lower than that reported in the original validation study (3.05–3.09) (Polonsky et al., 2017), which may reflect contextual differences across samples. Test–retest findings further supported the temporal stability of the scale ( $r = 0.794$ ). Overall, these results demonstrate that the Turkish version of the HCS is both internally consistent and stable over time.

### ***Qualitative validity of the hypoglycemic confidence scale***

The qualitative analysis provided additional support for the content and construct validity of the Turkish HCS. Participants clearly understood the items and expressed experiences consistent with the intended constructs of the scale. Thematic analysis identified five main themes—feeling safe, avoiding serious problems, recognizing and managing hypoglycemia, continuing life despite risks, and confidence from and in close relatives—which directly correspond to the nine HCS items. This conceptual overlap reinforces the scale's ability to capture real-world experiences of confidence in hypoglycemia management.

Participants' narratives reflected both emotional and behavioral dimensions of hypoglycemic confidence. Fear of hypoglycemia emerged as a prominent emotional response, often linked to previous negative experiences or concerns about nocturnal events. As one participant explained, "I once experienced hypoglycemia while sleeping and lost consciousness. Since then, I always check my blood sugar before bed." Similar concerns were documented by Brown et al. (2019), who found that nocturnal fear strongly influenced self-monitoring behaviors. Despite these fears, participants demonstrated a clear sense of self-efficacy: "After 13–14 years, I can tell when my blood sugar drops." This aligns with another study that highlighted experience and reflection as important contributors to hypoglycemic confidence (Brown et al., 2019).

Social and familial support also played a crucial role. Participants described reassurance in knowing that spouses or relatives could assist when needed: "My only trust is in my husband being with me. He knows my condition and checks on me at night." Such findings correspond with evidence showing that social support enhances self-efficacy and glycemic control in diabetes (Whittemore et al., 2018; Shao et al., 2017). Education further strengthened confidence; individuals who received structured diabetes training reported greater competence in recognizing and managing hypoglycemia, underscoring the link between knowledge and empowerment.

### **Limitations**

This study was conducted in a university hospital setting, which may limit the generalizability of the findings to different healthcare contexts. Although test–retest reliability was evaluated over a two-week interval, longer-term stability of hypoglycemic confidence was not assessed. In addition, the data were based on self-report measures. While the mixed-methods design strengthened the overall evaluation of the scale, qualitative data were obtained from a smaller subgroup of participants.

## Conclusion

The Turkish version of the Hypoglycemic Confidence Scale (HCS) demonstrated high internal consistency and sound construct and criterion validity, indicating that it is a reliable and valid measure for assessing confidence in hypoglycemia management. Qualitative findings further reinforced the conceptual validity of the scale, showing that participants' lived experiences were consistent with the theoretical constructions underlying the items. This integration of quantitative and qualitative evidence indicates that the Turkish HCS is both psychometrically sound and experientially meaningful. The validated HCS provides researchers and healthcare professionals with a practical, evidence-based tool to assess patients' confidence in managing hypoglycemia and to design targeted educational or counseling interventions that support self-management. Future studies with larger and more diverse samples are recommended to confirm its clinical applicability and to explore changes in confidence following structured educational programs.

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## Appendix

**Table 1.**

*Item analysis results of the hypoglycemic confidence scale items*

n=301	Item-Total Score Correlation	Mean ± SD	P-Value
HIGO1	0,679	3,60±0,56 1,90±0,82	0,001
HIGO2	0,535	2,78±0,95 1,23±0,53	0,001
HIGO3	0,662	3,64±0,54 1,94±0,79	0,001
HIGO4	0,720	3,67±0,47 2,04±0,83	0,001
HIGO5	0,797	3,59±0,49 1,46±0,63	0,001
HIGO6	0,569	3,25±0,78 1,74±0,69	0,001
HIGO7	0,532	3,88±0,33 2,63±0,95	0,001
HIGO8	0,607	3,58±0,65 1,83±0,80	0,001
HIGO9	0,592	3,85±0,36 2,40±0,92	0,001

**Table 2.**

*Exploratory factor analysis results of the hypoglycemic confidence scale (n=301)*

Factors and Items	Explained Variance (%)	Eigenvalue (Λ)	Factor Loading
<i>FI:</i>			
HIGO5	52,351	4,712	0,862
HIGO4			0,803
HIGO1			0,769
HIGO3			0,754
HIGO8			0,696
HIGO9			0,683
HIGO6			0,656
HIGO2			0,631
HIGO7			0,619

**Table 3.**

*Fit Indices of the confirmatory factor analysis model for the hypoglycemic confidence scale (n = 301)*

Goodness-of-Fit Indices	Criteria for Excellent Fit	Criteria for Acceptable Fit	Before Modification	After Modification
CMIN/df	≤ 3	3–5	3.308	2.303
GFI	≥ 0.95	≥ 0.90	0.932	0.955
AGFI	≥ 0.95	≥ 0.90	0.887	0.955
CFI	≥ 0.97	≥ 0.95	0.947	0.971
RMSEA	≤ 0.05	0.05–0.08	0.088	0.066
NFI	≥ 0.95	≥ 0.90	0.926	0.950
TLI	≥ 0.95	≥ 0.90	0.929	0.960
IFI	≥ 0.95	≥ 0.90	0.947	0.971

Note. CMIN/df = chi-square divided by degrees of freedom; GFI = Goodness-of-Fit Index; AGFI = Adjusted Goodness-of-Fit Index; CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation; NFI = Normed Fit Index; TLI = Tucker–Lewis Index; IFI = Incremental Fit Index. Fit criteria were interpreted according to commonly accepted structural equation modeling guidelines (Hu & Bentler, 1999; Kline, 2016).

**Table 4.**

*Distribution of item means and standard deviations for the turkish version of the hypoglycemic confidence scale (n=301)*

Items	Not Confident at All n (%)	Slightly Confident n (%)	Somewhat Confident n (%)	Very Confident n (%)	Mean	SD
1	33 (10,96)	48 (15,95)	158 (52,49)	62 (20,60)	2,83	0,88
2	130 (43,19)	68 (22,59)	84 (27,91)	19 (6,31)	1,97	0,98
3	28 (9,30)	56 (18,60)	140 (46,51)	77 (25,58)	2,88	0,89
4	25 (8,31)	37 (12,29)	168 (55,81)	71 (23,59)	2,95	0,83
5	55 (18,27)	58 (19,27)	138 (45,85)	50 (16,61)	2,61	0,97
6	47 (15,61)	94 (31,23)	119 (39,53)	41 (13,62)	2,51	0,92
7	17 (5,65)	24 (7,97)	127 (42,19)	133 (44,19)	3,25	0,83
8	43 (14,29)	81 (26,91)	108 (35,88)	69 (22,92)	2,67	0,98
9	20 (6,64)	30 (9,97)	123 (40,86)	128 (42,52)	3,19	0,87

**Table 5.**

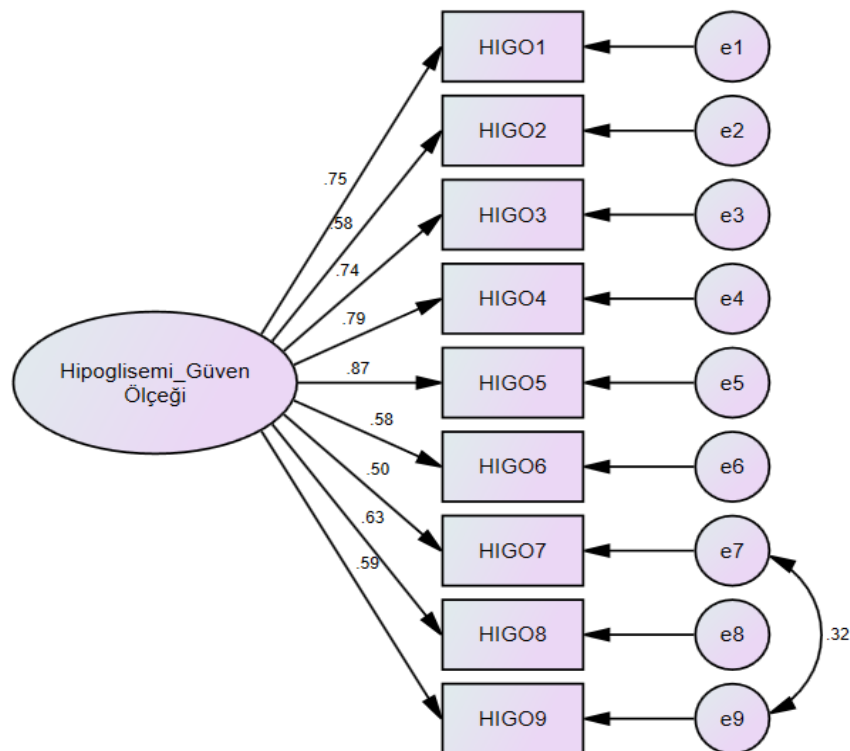
*Distribution of item-total correlations of the hypoglycemic confidence scale (n=301)*

	Item-Total Score Correlation	Cronbach's Alpha if Item Deleted
HIGO1	0,68	0,86
HIGO2	0,53	0,88
HIGO3	0,66	0,87
HIGO4	0,72	0,86
HIGO5	0,80	0,86
HIGO6	0,57	0,87
HIGO7	0,53	0,88
HIGO8	0,61	0,87
HIGO9	0,59	0,87
		General: 0,88

**Table 6.**

*Main Themes and Sub-Themes of the Study*

Main Themes	Sub-Themes
1. Feeling Safe	<ul style="list-style-type: none"> <li>• Taking Precautions</li> <li>• Hypoglycemic Confidence During Sleep</li> <li>• Hypoglycemic Confidence in Social Settings</li> <li>• Measuring Blood Glucose</li> <li>• Hypoglycemic Confidence When Alone</li> </ul>
2. Avoiding Serious Problems Related to Hypoglycemia	<ul style="list-style-type: none"> <li>• Trying to Balance Blood Glucose</li> <li>• Maintaining a Careful Diet</li> <li>• Trusting Healthcare Professionals</li> <li>• Experience and Confidence</li> <li>• Fear of Hypoglycemia</li> </ul>
3. Recognizing and Managing Hypoglycemia	<ul style="list-style-type: none"> <li>• Sensing the Onset of Hypoglycemia</li> <li>• Having Self-Confidence</li> <li>• Utilizing Technology</li> <li>• Keeping/Consuming Sugary Foods</li> </ul>
4. Continuing Life Despite the Risks of Hypoglycemia	<ul style="list-style-type: none"> <li>• Restriction of Daily Life</li> <li>• Impact of hypoglycemia on social life</li> <li>• Trying to Keep Blood Glucose Levels High</li> <li>• Experiencing Exhaustion</li> <li>• Receiving Education</li> </ul>
5. Confidence From and in Close Relatives to Manage Hypoglycemia	<ul style="list-style-type: none"> <li>• Family Members' Trust in the Individual</li> <li>• The Individual's Trust in Family Members</li> </ul>



**Figure 1.** Diagram of the Confirmatory Factor Analysis of the Hypoglycemic Confidence Scale

**Conflicts of interest**

No conflicts of interest are declared by the author.

**Author Contribution**

Fatma Betül Özdemir: Conceptualization, data refinement, research, methodology, original drafting, review, and editing

Corresponding author Leyla Muslu: Conceptualization, data refinement, research, methodology, original drafting, review, and editing

Nusret Yılmaz: Supervision, writing-reviewing and editing

**Conflict of Interest Statement**

This research has not received any specific grants from funding agencies in the public, commercial, or non-profit sectors.

**Ethics Approval**

In the writing process of the study titled " **Adaptation, validity and reliability of hypoglycemic confidence scale into Turkish: Mixed methods research**", scientific, ethical and citation rules were followed; It is committed by the author of this study that no falsification has been done on the data collected. It accepts that "Journal of Action Qualitative & Mixed Methods Research and Editor" has no responsibility for all ethical violations that may be encountered, that all responsibility belongs to the authors and that the study has not been submitted to any other academic publication environment for evaluation.

**Institutional review board (IRB) approval**

Institutional Review Board (IRB) approval of this research was obtained from Akdeniz University ethics committee (Approval Date: 16.01.2019, No: 53).

**Data Availability Statement**

Anonymized data from this study can be used upon request, [leylamuslu@akdeniz.edu.tr](mailto:leylamuslu@akdeniz.edu.tr)

## Alignment of the Turkish 11th grade philosophy skill-based activity book with Bloom's revised taxonomy

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**Abstract.** This study examines the alignment of the assessment tools included in the 11th Grade Philosophy Skill-Based Activity Book prepared by the Turkish Ministry of National Education with the Cognitive Process Dimension of Bloom's Revised Taxonomy (BRT). Conducted within a qualitative research framework using document analysis, the study analyzed all 115 assessment tools in the book without sampling, treating each question as an independent unit of analysis. The tools were coded according to the six cognitive process categories of BRT: remembering, understanding, applying, analyzing, evaluating, and creating. Inter-coder reliability was calculated as .91, indicating a high level of consistency. The findings reveal that assessment tools are predominantly concentrated at the understanding level (44%), while the applying level is represented at a limited rate (4%). Although 38% of the questions correspond to higher-order cognitive processes, sub-dimension diversity within these levels appears open to further development. In particular, the absence of the "organizing" sub-dimension in analyzing and the "planning" sub-dimension in creating suggests that higher-order cognitive processes could be structured in a more balanced and comprehensive manner. Overall, the cognitive distribution of the assessment tools may be further enhanced in line with the higher-order thinking skills emphasized in policy documents. Strengthening constructive alignment among curriculum goals, instructional practices, and assessment tools is recommended to improve the effectiveness of skill-based assessment.

**Keywords:** Bloom's revised taxonomy, philosophy education, skill-based assessment, cognitive process dimension, constructive alignment

### Introduction

Learning approaches adopted in Turkey in recent years have shifted from a traditional understanding that transfers information passively toward a constructivist perspective that focuses on how the learner derives meaning from information (Lipman, 2003). In this approach, knowledge is not presented to the learner as a ready-made and immutable content; instead, the individual reconstructs knowledge in line with their existing experiences and cognitive schemas. Therefore, the learning process is not regarded as a mere receptive mechanism, but as an active, interpretive, and meaning-based mental activity.

Instructional programs based on a "ready-made information" approach, which aims to transfer information to individuals without questioning, do not produce permanent and functional learning. The essential goal should be for the student not to memorize information, but to be able to analyze it, evaluate it, and transfer it to new situations. Indeed, the fundamental aim of the contemporary educational approach is not to raise individuals who store information, but to raise individuals who can interpret and use the information they have learned and ultimately produce a product from this information (Ercan & Çıldır, 2024).

Education does not only equip the individual in an academic sense; it is a process that prepares them for the requirements of the age, provides cognitive and social skills, and develops individual awareness. In

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this respect, education is not merely a tool for acquiring knowledge or specializing in a field. It is also a developmental area where the individual shapes their cultural and social identity and gains the basic skills necessary to sustain their life. As Immanuel Kant emphasized, a human being can only realize their potential through education; they can construct themselves by revealing and developing their natural talents. Within this framework, education can be considered one of the fundamental pillars of the individual's process of liberation and self-actualization.

The individual is the primary subject of both education and philosophy. The educational process aims not only to transfer knowledge but also to develop the individual's capacity for thinking, questioning, and meaning making. In this context, there is a necessary and dynamic relationship between education and philosophy. An educational understanding devoid of philosophical foundations may lose its direction in determining its aims, grounding its values, and making sense of learning processes (Dewey, 1916). The philosophy of education guides teaching processes by providing a theoretical framework for why, how, and in line with which values education should be conducted (Noddings, 2018).

A child's skills in reasoning, imagining, and making sense of the world they live in are of decisive importance for both cognitive and affective development. Supporting critical thinking, analytical reasoning, and problem-solving skills at an early age strengthens the individual's lifelong learning capacity (Lipman, 2003). Therefore, introducing children to philosophical inquiry from a young age contributes to their intellectual independence. Rather than offering ready-made answers, philosophy education instills the habit of asking questions; thus, the individual develops the skill to evaluate and analyze the problems they encounter through reason.

Indeed, contemporary educational approaches emphasize that learning is not only a cognitive process but also a process of meaning-making (Bruner, 1996). The active participation and curiosity of the student play a central role in the meaning-making process. The practice of philosophical thinking keeps the student's curiosity alive and contributes to the development of intrinsic motivation for learning. Just as sports are indisputably important for physical development, reading, understanding, and questioning activities are equally necessary for mental development. An individual who gains the habit of philosophical thinking becomes stronger not only in terms of academic success but also in terms of the potential to lead a conscious, questioning, and happy life (Splitter & Sharp, 1995).

In conclusion, the relationship between education and philosophy forms the basis of the holistic development of the individual. Education finds its direction through the theoretical and ethical foundations it receives from philosophy; philosophy, in turn, is concretely reflected in social life through education. This mutual interaction is indispensable for raising thinking and responsible individuals.

### **The Relationship Between Technology and Education**

In our age, where science and technology surround our daily lives, individuals can instantly encounter different cultures, places, and information sources by transcending physical boundaries. While digital environments and virtual spaces expand the individual's field of experience, they also accelerate the processes of accessing information. However, this speed brings the risk of bypassing the meaning-making stages of information superficially. For this reason, the contemporary understanding of education must treat technology not only as a tool for accessing information but as a component of the process of meaning-making, questioning, and critical evaluation (Selwyn, 2016).

The widespread use of virtual environments allows the individual to observe realities outside their own living space, and this situation reshapes the individual's perception of space, identity, and social belonging. Individuals growing up within digital culture are exposed to multiple stimuli, which affects the functioning of cognitive processes (Prensky, 2001). Therefore, the stages of thinking and learning processes cannot be evaluated independently of the digital transformation. For educational systems to adapt to this change, they must develop skills such as critical thinking, media literacy, and digital competence from an early age (UNESCO, 2018).

In this context, the role of technology in education is not merely a matter of instrumental use; it is also related to pedagogical foundations. Technology integration does not produce healthy results without considering students' developmental stages, levels of cognitive readiness, and learning tasks. The justification and criticism of technology use in education gain meaning only when evaluated within the framework of developmental theories and the psychology of learning (Kozma, 2003). In this way, technology can transform from being a superficial element that accelerates the learning process into a pedagogical tool that supports critical and in-depth thinking.

In conclusion, the relationship between technology and education is a mutual interaction. Education should use technology consciously and purposefully to develop the individual's critical thinking capacity, and technology should be structured in a way that supports the cognitive and ethical development targeted by education.

Adolescence is a developmental stage in which the individual experiences significant transformations both biologically and psychosocially. During this period, while the individual tends to establish closer relationships with the opposite sex, the need for emotional attachment and acceptance increases significantly. Although family support maintains its importance, the influence of peer groups becomes more dominant in shaping the adolescent's behavior (Steinberg, 2014). Peer acceptance, social status, and group belonging are among the factors that directly affect the adolescent's self-perception.

In this process, the individual gives more importance to their outward appearance, lifestyle, and social image; in parallel, the level of fragility may also increase. Sensitivity to the evaluations of others rises, and self-worth is often shaped by external feedback. According to Erikson's (1968) theory of identity, the adolescent period is defined as the stage of "identity versus role confusion." In this stage, while searching for an answer to the question "Who am I?", the individual tends to construct their identity through the distinction of self-other-others. While constructing their living space on the axis of "self" and "others," they are in a search for belonging on the one hand, and they try to develop a unique identity by striving not to be the "other" on the other hand.

Adolescence is also a period when abstract thinking skills become prominent. According to Piaget's (1972) theory of cognitive development, individuals at this stage transition to the "formal operational" stage, gaining the capacity to think about possibilities, engage in hypothetical reasoning, and perform critical evaluations. Despite this cognitive progress, emotional sensitivity and peer pressure play a strong role in guiding behavior. Peer solidarity is as much a prominent risk area of this period as peer bullying and social exclusion (Santrock, 2020).

In this context, families and educational institutions should adopt a guiding approach that considers the adolescent's developmental characteristics, rather than trying to take their increasing desire for independence completely under control. Since the fundamental aim of education is to develop desired behaviors in the individual and support social adaptation (Senemoğlu, 2023), these aims must be structured in harmony with the adolescent's identity search and emotional sensitivity. Otherwise, the individual may turn to different forms of belonging by producing alternative "objects of desire" to the desired behaviors.

Particularly, philosophy education provided during this period can serve a functional role in supporting the individual's abstract thinking capacity and identity search. Philosophical inquiry contributes to the adolescent's making sense of the relationship they establish both with themselves and with others. However, the attainment of this education is closely linked to the relationships the adolescent establishes with their social environment and the dynamics of belonging. Therefore, educational content and methods should be designed by considering the cognitive, emotional, and social characteristics of the adolescent period.

At this exact point, the function of philosophy education becomes more visible in the period of adolescence, when abstract thinking skills develop significantly. Philosophical thinking enables the individual not only to acquire knowledge but also to make sense of, question, and evaluate the social

structure they live in by developing a critical distance. The conscious internalization of social norms and values becomes permanent only by questioning and justifying their foundations. For this reason, philosophy education does not aim for the individual to experience a passive process of adaptation, but rather to develop a grounded sense of belonging

The scope and implementation of philosophy education in Turkey are determined within the framework of the curriculum prepared by the Ministry of National Education. In the current Secondary Education Philosophy Course Curriculum, published based on the decisions of the Board of Education and Discipline, the aims of the course, its content structure, and the principles of assessment and evaluation are defined in detail (Ministry of National Education [MoNE], 2023). Accordingly, students are introduced to the philosophy course in the 10th grade and complete their education with the course given in the 11th grade.

When the program structure is examined, it is seen that a more conceptual and problem-based approach is adopted in the 10th grade. The units "Recognizing Philosophy," "Thinking with Philosophy," "Basic Topics and Problems of Philosophy," and "Philosophical Reading and Writing" aim for the student to meet philosophical thinking methods and acquire basic concepts (MoNE, 2023). In contrast, the historical approach comes to the fore in the 11th-grade program; under the headings of "6th Century BC – 2nd Century AD Philosophy," "2nd Century AD – 15th Century AD Philosophy," "15th Century – 17th Century Philosophy," "18th Century – 19th Century Philosophy," and "20th Century Philosophy," the main discussions of the periods and the views of philosophers are handled (MoNE, 2023). This structuring aims to create a conceptual infrastructure in the 10th grade and to provide an understanding of the historical development of philosophical thought in the 11th grade (Ministry of National Education [MoNE], 2023).

### **Preparing Effective Assessment Tools**

Changing instructional programs adopt an assessment and evaluation understanding that aims to evaluate learning outcomes not only through cognitive products but also through performance indicators in the learning process. In this approach, the student's capacity to reproduce, transfer, and use information in different contexts comes to the fore. While traditional assessment tools (multiple-choice tests, short-answer exams, etc.) are functional in determining gains at the level of basic knowledge and comprehension, they may remain limited in measuring behaviors involving high-level mental processes such as problem-solving, critical thinking, decision-making, and creative thinking (Anderson & Krathwohl, 2001; Nitko & Brookhart, 2014). Therefore, contemporary assessment approaches bring performance-based and process-oriented evaluation tools more to the agenda.

The question, one of the fundamental components of active learning environments, is a strategic tool that activates the learner's cognitive activity. The quality of the question determines which level of the thinking process the student will be directed toward. Appropriately structured questions trigger high-level mental operations such as analysis, synthesis, and evaluation, increasing the student's active participation and supporting meaningful learning (King, 1995). In this context, asking questions is not just a technique that functions as a knowledge check, but also a pedagogical intervention that structures learning.

The process of preparing effective questions has the quality of a cognitive strategy. This is because the teacher performs conceptual analysis, considers cognitive levels, and designs the assessment tool according to a certain thinking stage while constructing questions suitable for learning goals. In this respect, the question-writing process requires high-level thinking (Brookhart, 2010). Furthermore, asking questions also performs a metacognitive function to the extent that it allows the student to monitor and regulate their own thinking process. Through the qualified questions directed at them, the student realizes what they know or do not know, reviews their thinking strategies, and can regulate their learning (Schraw & Moshman, 1995).

In contrast, research shows that questions in classroom applications remain largely at a low cognitive level. It is stated that a significant part of the questions asked by teachers is directed toward factual

information and the level of remembering, while questions requiring analysis, evaluation, and creative production are used to a limited extent (Temur& Aşık, 2023). This situation makes it difficult to measure and develop the high-level skills targeted in the instructional process.

The concept of high-level skill is defined as an upper category covering processes such as critical thinking, high-level cognitive processes, problem-solving, reasoning-based thinking, or creative thinking (Anderson & Krathwohl, 2001). Measuring these skills requires not only determining the correct answer but also evaluating the student's reasoning process, the form of justification, and the capacity for conceptual association. Therefore, developing teachers' question-writing competencies, diversifying assessment tools according to cognitive levels, and expanding performance-based evaluation applications are of critical importance for the formation of an assessment-evaluation culture compatible with the goals of contemporary instructional programs.

One of the most effective theoretical frameworks developed to classify cognitive skills systematically and make them measurable is Bloom's Taxonomy. The original taxonomy, developed under the chairmanship of Benjamin Bloom, was designed as a multi-layered model involving the classification of intellectual skills within the context of six cognitive difficulty processes (Bloom et al.,1956). This model envisages learning outcomes to be handled within a sequence of mental operations progressing from simple to complex. In the original classification, low-level cognitive processes were determined as knowledge, comprehension, and application; high-level processes were determined as analysis, synthesis, and evaluation. Due to the hierarchical structure, each upper stage assumes that the cognitive operations in the lower stages have been performed. Therefore, a student performing tasks at the application level is considered to have realized the knowledge and comprehension levels.

The fundamental function of the taxonomy is to ensure that instructional goals are clearly defined and assessment tools are structured in accordance with these goals (Krathwohl, 2002). This model, used for many years as a reference point in the development of instructional programs and the preparation of exam questions, has provided teachers with a systematic framework to lead their students to higher intellectual skills (Anderson & Krathwohl, 2001). However, the transformation experienced in the forms of information production and use in the 21st century necessitated the reconceptualization of cognitive processes (Trilling & Fadel, 2009).

In this direction, the taxonomy was updated and transformed into a two-dimensional structure by a working group chaired by Lorin Anderson and David Krathwohl (Anderson & Krathwohl, 2001). The revised model provided a more analytical classification by separating the "knowledge dimension" (factual, conceptual, procedural, and metacognitive knowledge) and the "cognitive process dimension." At the terminological level, the names were transformed into verb forms; thus, the aim was to define learning outcomes through observable performance indicators (Krathwohl, 2002).

In the revised taxonomy, the cognitive process dimension is structured as follows:

1. Remembering: Retrieving relevant knowledge from long-term memory. It includes the subcategories of recognizing and recalling.
2. Understanding: Determining the meaning of instructional messages, including oral, written, and graphic communication. It covers sub-skills such as interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
3. Applying: Carrying out or using a procedure through performing or implementing.
4. Analyzing: Breaking material into constituent parts and detecting how the parts relate to one another and to an overall structure or purpose. It includes the sub-dimensions of differentiating, organizing, and attributing.
5. Evaluating: Making judgments based on criteria and standards. The subcategories of checking and critiquing are located at this level.
6. Creating: Putting elements together to form a novel and functional whole; reorganizing elements into a new pattern or structure. It involves generating, planning, and producing (Anderson & Krathwohl, 2001).

In the revised taxonomy, replacing the synthesis stage with the "creating" level reflects the emphasis on the importance of productivity and original design in the information age (Forehand, 2010). This change aims for students not only to reorganize existing information but to put forward new and functional wholes. Thus, the taxonomy provides a more functional framework for measuring high-level cognitive processes such as critical thinking, problem-solving, and creative production (Brookhart, 2010).

The updated structure of the taxonomy necessitates a balanced distribution of questions according to cognitive levels in assessment-evaluation processes. Research shows that questions directed toward high-level cognitive processes increase students' cognitive flexibility and transfer skills as much as their academic success (Haladyna, 1999; Nitko & Brookhart, 2014). In this context, Bloom's Taxonomy and its revised model are considered not only for the classification of instructional goals but also as a design tool to raise pedagogical quality.

In conclusion, the systematic measurement of cognitive skills and the integration of high-level thinking processes into the instructional process become possible through taxonomic frameworks. The Revised Bloom's Taxonomy provides a comprehensive model that grounds the critical, analytical, and productive thinking skills required by the contemporary educational understanding at both conceptual and applied levels.

### ***Purpose of the research***

This research aims to evaluate the assessment tools included in the Philosophy 11th Grade Skill-Based Activity Book, which was prepared by the Ministry of National Education (MoNE) in accordance with the new generation assessment and evaluation approach. The assessment tools within this skill-based activity book are taken as the primary criteria for evaluation. Bloom's Revised Taxonomy (BRT) will be utilized to determine the cognitive process dimension of these tools.

### **Methodology**

This research was conducted based on interpretive paradigm and systematic analysis variant of systematic review design within the scope of qualitative research methods. Systematic analysis is a method involving the collection, analysis, and interpretation of written and digital materials containing data related to the research problem (Bowen, 2009). In this method, the researcher treats existing documents as primary data sources and analyzes their content, structure, and contextual characteristics in line with specific theoretical criteria (Karasar, 2024).

During the research process, access was provided to all assessment tools within the skill-based activity book, and the data set was formed in its entirety. Every question in the study was examined individually, and each was treated as an independent unit of analysis. Purposive sampling approach was used.

In conclusion, this study constitutes a theoretically grounded systematic analysis of the documents in which all questions in the skill-based activity tool are examined comprehensively and systematically. The research process is based on a holistic rather than a selective examination, providing a comprehensive and technical evaluation of the cognitive structures of the assessment tools.

### ***Sampling***

The Philosophy 11th Grade Skill-Based Activity Book, prepared by the Ministry of National Education and provided for the use of 11th-grade students, constitutes the primary data source of this research. The assessment tools related to 21 learning outcomes defined within the scope of 5 units and 55 topics in the book were included in the research.

In this direction, a total of 155 skill-based assessment tools developed by philosophy teachers for the relevant learning outcomes were examined in detail. Each assessment tool was handled individually; the

question stems, instructions, the measurement format used (open-ended, multiple-choice, structured response, etc.), the targeted cognitive process level, and the relationship established with the learning outcome were analyzed. Thus, both the compliance of the assessment tools with the outcomes specified in the curriculum and their distribution in terms of cognitive levels were systematically evaluated.

All research materials used in the study were obtained from digital documents published on the official website of the Ministry of National Education. No sampling method was employed in the data acquisition process; all assessment tools in the book were accepted as the study population and analyzed holistically. In this regard, the research bears the character of a census based on comprehensive document analysis.

### ***Data collection***

All research materials used in the study were obtained from digital documents published on the official website of the Ministry of National Education. The Philosophy 11th Grade Skill-Based Activity Book was downloaded and examined in its entirety. Access was provided to all assessment tools within the book, and the data set was formed without exclusion.

Every question in the activity book was accepted as a document to be analyzed. The question stems, instructions, response formats, and curriculum-related contextual elements were systematically reviewed and recorded for analysis.

### ***Ethics statement***

The Philosophy 11th Grade Skill-Based Activity Book examined in this study was downloaded and reviewed from the publicly and freely accessible address of the Ministry of National Education's website ([https://ogmmateryal.eba.gov.tr/panel/upload/etkilesimli/kitap/beceri\\_temelli/11/felsefe/index.html](https://ogmmateryal.eba.gov.tr/panel/upload/etkilesimli/kitap/beceri_temelli/11/felsefe/index.html), Access Date: 25.03.2024). Therefore, ethics committee approval was not required. All processes of the research were carried out in accordance with ethical rules.

### ***Rigor***

In this research, validity and reliability were handled in line with the qualitative research paradigm and evaluated beyond the classical quantitative understanding of reliability. In ensuring validity and reliability, the criteria of credibility, transferability, dependability, and confirmability put forward by Lincoln and Guba (1985) were taken as a basis.

To increase the credibility of the research, the analysis process was structured clearly and systematically. The cognitive process dimension of Bloom's Revised Taxonomy was used as the theoretical framework; coding criteria were determined before the analysis, and each question was evaluated according to these criteria. Questions were classified not only according to superficial action verbs but by considering the type of cognitive operation, level of reasoning, and depth of mental demand expected from the student. Thus, it was aimed to prevent superficial classification errors. The coding process was carried out independently by the researcher and two subject matter experts; questions evaluated differently were discussed until a consensus was reached. This practice contributed to the purification of the analysis process from subjective interpretations.

To ensure the dependability of the research, all methodological processes were reported in detail. The nature of the data source, the unit of analysis, the coding process, decision-making criteria, and classification principles were clearly defined. This detailed description increases the replicability of the study by other researchers in a similar manner. Inter-coder reliability was calculated with the formula suggested by Miles and Huberman (1994). As a result of the calculation, the reliability coefficient was found to be .91. Considering that values of .80 and above are accepted as sufficient, this ratio indicates that the coding process is highly consistent.

The confirmability of the research was ensured by basing the findings directly on the documents and justifying the interpretations based on the data. Coding decisions were systematically recorded and compared with expert evaluations. Thus, an effort was made to minimize the effect of researcher subjectivity.

The transferability of the study was supported by a detailed description of the research context. The nature of the document examined, the grade level, the number of units and learning outcomes, and the number of assessment tools were clearly stated. These detailed contextual explanations offer the possibility of comparison and interpretation for future research on similar instructional materials.

### *Data analysis*

The data analysis in this research was carried out within the framework of the documents by using systematic content analysis techniques. Systematic analysis is the analysis written materials containing information about the phenomenon or phenomena intended to be researched (Bowen, 2009). Accordingly, the assessment tools examined within the scope of the research were analyzed using descriptive and categorical content analysis methods.

Within the scope of the research, an evaluation of the assessment tools under the heading of "activities" in the 11th Grade Philosophy Course Curriculum was performed. In the analysis process, not only the question texts but also the general objectives of each unit, the relevant learning outcomes, and the cognitive processes targeted by the activities were taken into account. Thus, the assessment tools were handled with a holistic approach in the context of the learning outcomes envisaged by the curriculum. This approach enabled the evaluation of the curriculum-assessment alignment (Anderson & Krathwohl, 2001).

The examined assessment tools were coded based on the Cognitive Process Dimension of Bloom's Revised Taxonomy (BRT). According to BRT, the cognitive process dimension consists of six basic stages: remembering, understanding, applying, analyzing, evaluating, and creating (Anderson & Krathwohl, 2001). During the coding process, each question was classified by considering:

- The action verbs used in the question stem,
- The type of mental operation expected from the student,
- The level of cognitive depth required by the question,
- The nature of the relevant learning outcome in the curriculum.

The coding process was conducted in two stages. In the first stage, all questions were subjected to pre-coding by the researcher. In the second stage, independent coding was performed by a subject matter expert on BRT; the resulting codes were compared, and items with consensus and disagreement were identified. The inter-coder reliability was calculated using the formula suggested by Miles and Huberman (1994).

It is stated in the literature that the stages in the cognitive process dimension of BRT exhibit a hierarchical structure, with a degree of difficulty progressing from lower-level cognitive operations to higher-order thinking skills (Amer, 2006). However, it is emphasized that this hierarchical structure does not contain rigid boundaries and that there may be transitions and overlaps between cognitive processes. Therefore, during the classification process, coding was not done based solely on superficial action verbs; the level of mental operation requested from the student was taken as the basis. Particularly, the soft transitions between the analyzing, evaluating, and creating stages were examined in detail, and controversial items were decided upon in line with expert opinion.

After the completion of the coding process, the number of questions falling into each cognitive level was calculated as frequency (f) and percentage (%) values and presented in tables. Through these

descriptive statistics, the cognitive levels at which the assessment tools were concentrated were revealed, and the extent to which they overlapped with the curriculum's goal of developing higher-order thinking skills was evaluated.

The findings were interpreted in terms of the alignment between the cognitive goals envisaged by the curriculum and the cognitive level distribution of the assessment tools; specifically, the extent to which higher-order thinking skills (analyzing, evaluating, creating) were represented in the assessment tools was discussed within an analytical framework.

## Findings

In this section, the findings regarding the identification of the assessment tools in terms of the Cognitive Process Dimension of Bloom's Revised Taxonomy (BRT) are presented. The findings are illustrated through tables and graphs.

**Table 1.**

*Classification of Assessment Tools in the 11th Grade Philosophy Activity Book According to the Cognitive Process Dimensions of BRT*

Cognitive Process Dimension	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Total Number of Questions
1. Remembering	7	2	2	1	3	15
1.1. Recognizing	7	2	2	0	3	
1.2. Recalling	0	0	0	1	0	
2. Understanding	15	12	9	6	9	51
2.1. Interpreting	6	0	1	0	0	
2.2. Exemplifying	0	1	0	0	0	
2.3. Classifying	2	0	0	0	0	
2.4. Summarizing	0	0	0	1	0	
2.5. Inferring	5	8	3	0	8	
2.6. Comparing	2	2	2	2	0	
2.7. Explaining	0	1	3	3	1	
3. Applying	1	3	1	0	0	
3.1. Executing	0	3	1	0	0	
3.2. Implementing	1	0	0	0	0	
4. Analyzing	5	4	3	3	5	20
4.1. Differentiating	4	4	3	3	4	
4.2. Organizing	0	0	0	0	0	
4.3. Attributing	1	0	0	0	1	
5. Evaluating	3	2	3	3	0	11
5.1. Checking	2	2	2	0	0	
5.2. Critiquing	1	0	1	3	0	
6. Creating	4	3	2	1	3	13
6.1. Generating	4	2	2	1	3	
6.2. Planning	0	0	0	0	0	
6.3. Producing	0	1	0	0	0	
<b>Total Number of Questions</b>	<b>35</b>	<b>26</b>	<b>20</b>	<b>14</b>	<b>20</b>	<b>115</b>

A total of 115 assessment tools were examined within the scope of the research. The distribution of assessment tools across the cognitive process dimensions is as follows: remembering ( $f = 15, 13.0\%$ ),

understanding ( $f = 51, 44.3\%$ ), applying ( $f = 5, 4.3\%$ ), analyzing ( $f = 20, 17.4\%$ ), evaluating ( $f = 11, 9.6\%$ ), and creating ( $f = 13, 11.3\%$ ). This distribution indicates that the assessment tools are significantly concentrated in the understanding stage, which constitutes approximately 44% of the total. Conversely, the applying stage is represented by a limited rate of 4%, pointing to a significant imbalance among cognitive processes.

### ***Structural Analysis of Cognitive Process Stages***

The majority of the assessment tools in the remembering stage were coded in the "recognizing" sub-dimension. The limited representation of "recalling" suggests that students are expected to perform selective recognition rather than free recall. In the understanding stage, a significant portion of the tools is clustered under "inferring." This finding shows that the tools prioritize establishing relationships between concepts and revealing implicit meanings. However, the limited representation of sub-dimensions like summarizing and classifying indicates an uneven distribution of cognitive diversity within this level.

The applying stage is the weakest in terms of both frequency and sub-dimension diversity. Almost all tools fall under "executing," while "implementing" is nearly non-existent. This suggests that while there is a demand for processing information within specific procedures, the cognitive demand for transferring knowledge to new and original situations remains very limited. In the analyzing stage, the majority of tools are clustered under "differentiating," with no tools found in the "organizing" sub-dimension. This shows that students are expected to break a text or argument into its components but are not required to reconstruct the structural relationships between these components. In the evaluating stage, most tools are in the "checking" sub-dimension, while "critiquing" has more limited representation. Finally, in the creating stage, most tools were coded as "generating," while "planning" was never encountered. This suggests that the procedural and strategic dimensions of creative thinking are not sufficiently included, and the level of creating is narrowed down to merely producing a specific product.

### ***Overall Trend in Lower and Higher-Order Skills***

When remembering, understanding, and applying are considered lower-order skills, and analyzing, evaluating, and creating are considered higher-order skills within the BRT framework, it is observed that 62% of the assessment tools correspond to lower-order processes, while 38% correspond to higher-order processes. However, qualitative analysis reveals that the higher-order categories remain limited in terms of sub-dimension diversity. Specifically, the absence of "organizing" in analysis and "planning" in creating indicates that the structural integrity of higher-order cognitive processes is not fully represented in the assessment tools.

## **Discussion**

In this study, the questions developed by the Turkish Ministry of National Education (MoNE) within the framework of the skill-based assessment approach were analyzed based on the cognitive process dimension of the Revised Bloom's Taxonomy (BRT). The findings reveal a structural misalignment between the policy-level emphasis on higher-order thinking skills and the actual cognitive demands reflected in assessment practices. This discrepancy reflects a broader issue frequently discussed in recent educational reforms in Türkiye, particularly in relation to the transition toward competency-based curricula (MoNE, 2023).

### ***Interpretation of Findings within the Theoretical Framework***

From the perspective of Messick's (1995) unified theory of construct validity, an assessment instrument should adequately represent the theoretical construct it claims to measure. Skill-based assessment, by definition, encompasses higher-order cognitive processes such as analyzing, evaluating, and creating.

However, the findings indicate that these processes are either underrepresented or entirely absent. This leads to a construct underrepresentation problem, thereby weakening the validity of the assessment practices.

Similarly, Stein and Smith (1998) argue that the level of cognitive demand is determined not by the contextual richness of a task but by the type of mental operations required from students. In line with this argument, although many items analyzed in this study are embedded in rich textual contexts, they predominantly require lower-level processes such as recalling or making explicit inferences. This suggests that contextual complexity has been mistakenly equated with cognitive depth. Recent studies on digital and text-based assessment practices also emphasize that surface-level complexity does not necessarily translate into deeper cognitive engagement (Ercan & Çıldır, 2022; OECD, 2021).

### ***Pedagogical Interpretation of Cognitive Imbalance***

One of the most striking findings of the study is the concentration of items within specific sub-dimensions, particularly “making inferences,” and the complete absence of others such as “organizing” and “planning.” This imbalance can be interpreted from multiple pedagogical perspectives.

First, lower and mid-level cognitive processes are generally easier to operationalize and score in large-scale assessments (Popham, 2017). As a result, item writers may tend to favor these types of questions due to practical constraints. Second, the dominance of high-stakes examinations within the Turkish education system may reinforce a preference for easily measurable outcomes, thereby discouraging the inclusion of complex cognitive tasks (Kumandaş & Kutlu, 2014).

Findings from studies conducted in Türkiye on textbook analyses and assessment practices also support this pattern. Research indicates that instructional materials across different subject areas tend to emphasize lower-order cognitive skills, with limited representation of higher-order thinking processes (Çepni et al., 2001; Demir & Dinar, 2006). Therefore, the imbalance identified in this study may reflect a systemic tendency rather than a subject-specific issue.

However, from the perspective of philosophy education, this imbalance is particularly problematic. Philosophy inherently requires students to construct arguments, organize their thoughts coherently, and engage in reflective and critical inquiry. As emphasized by Lipman (2003), philosophical inquiry is fundamentally linked to reasoning, questioning, and structured thinking. The absence of “organizing” and “planning” sub-dimensions indicates that students are not being assessed on their ability to develop structured philosophical arguments. Consequently, assessment practices may reduce philosophy education to recognizing or reproducing ideas rather than producing and evaluating them.

### ***Evaluation of Instructional-Assessment Alignment***

According to Biggs’ (1996) theory of constructive alignment, effective teaching requires consistency between learning outcomes, instructional activities, and assessment methods. The findings of this study suggest that such alignment has not been fully achieved. Although the curriculum emphasizes higher-order thinking skills, these are not sufficiently reflected in assessment tools.

Recent research on curriculum implementation in Türkiye highlights similar inconsistencies between intended and implemented curricula, particularly in the context of competency-based education reforms (Ercan & Çıldır, 2024; MoNE, 2023). This suggests that the issue extends beyond item-writing techniques and reflects a broader systemic challenge.

Achieving true alignment requires coordinated efforts across multiple components of the educational system, including curriculum design, textbook development, teacher training, and assessment practices. Without such systemic coherence, the goal of fostering higher-order thinking skills is unlikely to be realized in practice.

### ***Implications for Philosophy Education***

The findings of this study have direct implications for philosophy education. The limited representation of higher-order cognitive processes restricts students' opportunities to engage in essential philosophical practices such as argument construction, critical evaluation, and reflective thinking.

In particular, the absence of "organizing" and "planning" dimensions is critical. These processes are central to philosophical writing and reasoning, as they enable students to structure arguments, justify claims, and engage in disciplined thinking. Their exclusion from assessment practices may lead to a narrowing of the curriculum and a superficial engagement with philosophical content.

Moreover, recent discussions on 21st-century skills and digital literacy emphasize the importance of higher-order thinking competencies such as problem-solving, critical thinking, and metacognition (OECD, 2021; Voogt & Roblin, 2012). The findings of this study suggest that current assessment practices may not adequately support the development of these competencies within philosophy education.

### **Conclusion and Recommendations**

In conclusion, the cognitive process distribution of the analyzed questions does not fully align with the higher-order thinking goals emphasized in policy documents. A significant proportion of the items remains concentrated in lower-level cognitive processes, indicating a gap between the intended and implemented curriculum.

To address this issue, several recommendations can be proposed. First, assessment designers should be supported with clear guidelines and professional development opportunities focused on developing higher-order cognitive items. Second, textbooks and instructional materials should incorporate more activities that require organizing, planning, and argumentation. Third, teacher education programs should emphasize the integration of higher-order thinking skills into both instruction and assessment processes.

Ultimately, establishing a sustainable skill-based assessment approach requires a comprehensive and systemic alignment among curricula, instructional practices, and assessment tools. Without such alignment, the discrepancy between the rhetoric and practice of assessment is likely to persist.

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### **Conflicts of interest**

No conflicts of interest are declared by the author.

### **Author Contribution**

Corresponding author Mustafa Sekban: Conceptualization, data refinement, research, methodology, original drafting, review, and editing.

Güçlü Şekercioğlu: Supervision, writing-reviewing and editing

### **Conflict of Interest Statement**

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### **Ethics Approval**

In the writing process of the study titled "**Alignment of the Turkish 11th grade philosophy skill-based activity book with Bloom's revised taxonomy**", scientific, ethical and citation rules were followed; It is committed by the author of this study that no falsification has been done on the data collected. It accepts that "Journal of Action Qualitative & Mixed Methods Research and Editor" has no responsibility for all ethical violations that may be encountered, that all responsibility belongs to the author and that the study has not been submitted to any other academic publication environment for evaluation.

### **Institutional review board (IRB) approval**

Institutional Review Board (IRB) is not required for this research.

### **Data Availability Statement**

Anonymized data from this study can be used upon request [sekbanmustafa@hotmail.com](mailto:sekbanmustafa@hotmail.com)