

Program Development Studies for Undergraduate Courses in Turkey: A Systematic Review

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ABSTRACT

This study examines the process of program development for undergraduate-level courses in Turkey, focusing on the methodologies, models, and practices employed in curriculum design. The research adopts a systematic review approach to analyze 25 graduate theses published between 2010 and 2023, sourced from the Council of Higher Education (YÖK) Thesis Center. The findings reveal that the majority of studies (80%) were doctoral theses, reflecting the comprehensive and long-term nature of program development. Methodologically, qualitative (40%) and mixed methods (52%) were more prevalent than quantitative approaches (8%), highlighting the complexity of educational research. The most commonly used program design model was Demirel's Educational Program Development Model (DEPGEM), favored for its alignment with the Turkish education system. Studies were conducted across various disciplines, with education faculties (48%) being the most prominent, followed by health sciences (20%), fine arts (12%), and tourism (8%). Program evaluation was included in 48% of the studies, with pilot applications used in only 28%, indicating a need for more robust evaluation practices. Needs analysis was conducted in 76% of the studies, often involving multiple stakeholders such as experts, students, and industry representatives. Objectives were frequently based on Bloom's taxonomy (44%), though 56% of studies lacked clarity in defining objectives. The study concludes that program development in Turkey is increasingly adopting systematic and student-centered approaches, but greater methodological rigor and interdisciplinary collaboration are needed. Recommendations include the integration of technology, the use of mixed methods, and adoption of both local and international models to enhance the quality and effectiveness.

Keywords: Curriculum Desing, Curriculum Research, Systematic Review, Undergraduate Education.

INTRODUCTION

The term "curriculum" originates from the Latin word meaning "racecourse," metaphorically comparing the educational process to a race. Today, curriculum is fundamentally defined as a set of educational plans. However, this concept has been interpreted differently by various scholars. Schubert (1987) views curriculum as a product of society, emphasizing its primary purpose as transforming society. As a field of study, curriculum is grounded in philosophical, historical, psychological, and social foundations, serving as a tool to explore, develop, and interpret educational ideas. Simultaneously, it functions as a system for organizing educational processes and, as a subject area, refers to the content of a specific discipline (Ornstein & Hunkins, 2018). Curriculum is often utilized as a plan or written document that outlines desired objectives. In line with humanistic thought, Caswell and Campbell (1935) define curriculum as all the experiences students undergo under the guidance of teachers. This definition treats the student as a holistic being. The complex nature of curriculum has shifted the focus from what it is to what it does, what it should do, and how it should be developed.

In the curriculum development process, three fundamental approaches stand out: subject-centered, studentcentered, and problem-centered. Each approach shapes curriculum design by emphasizing different elements. For instance, in student-centered approaches, the curriculum is structured around the needs of students (Ornstein & Hunkins, 2018). Curriculum development has been shaped by various models since the early 20th century, with Ralph W. Tyler's model recognized as one of the most influential works in this field. Curriculum models are generally classified as technical/scientific (positivist) and non-technical/post-positivist approaches. While technical approaches advocate for a systematic, step-by-step design of the curriculum, post-positivist approaches emphasize student-centeredness and process-oriented practices (Ornstein & Hunkins, 2018). Humanist theories, in particular, have gained prominence within post-positivist approaches.

In Turkey, curriculum development efforts have paralleled global trends but have faced interruptions due to the



country's political and social dynamics. In the early years of the Republic, curriculum development was carried out in the form of listing courses, while scientifically based curricula began to be developed after the 1950s. The 1968 curriculum is considered a significant turning point in this regard. However, since the 1980s, standardization in curriculum development processes has not been achieved, and different models have continued to be used (Demirel, 1992; Gözütok, 2003). The curriculum is one of the cornerstones of the education system, with a complex structure encompassing both theoretical and practical dimensions. Although curriculum development efforts in Turkey have encountered various challenges throughout history, more systematic and student-centered approaches are increasingly being adopted today. In this process, it is of great importance to consider local needs alongside global trends.

Program development is a comprehensive and dynamic process that forms the foundation of educational programs. This process begins with the determination of the program's objectives and includes the design and implementation of necessary content, teaching-learning strategies, and assessment methods to achieve these objectives. Program development represents a continuous cycle of improvement and refinement rather than a static structure (Demirel, 2005; Erden, 1998; Erişen, 1997; Lunenberg, 2011). Sağlam (2011) explains this process primarily through the stages of planning, implementing, and evaluating the program, while Yaşar (2014) addresses program development under two main headings: creating a new program and improving an existing one. In this context, the program development process encompasses both the design, implementation, and evaluation of new programs and the identification and improvement of shortcomings in existing programs.

In the program development process, the fundamental steps of planning, implementation, and evaluation stand out. However, Thijs and Akker (2009) explain this process through a cyclical model, emphasizing the stages of analysis, design, development, implementation, and evaluation. In this cyclical process, the current situation is first analyzed, and needs are identified. Subsequently, in the design phase, objectives and content are determined, while in the development phase, this design is transformed into a feasible product. The evaluation phase, central to the process, involves analyzing the outcomes of implementation and improving the program (Thijs & Akker, 2009). Program development plays a critical role in providing quality education that supports students' personal, academic, and professional growth. Ishemo et al. (2012) outline the primary objectives of program development as follows: (1) providing educators with a clear roadmap to ensure alignment between teaching and learning processes and objectives, (2) disseminating knowledge to society and cultivating informed individuals, (3) facilitating the transfer of knowledge and expertise across generations, (4) equipping individuals and communities with the knowledge and skills to adapt to changing conditions, and (5) enabling individuals to achieve their goals and contribute to society.

The planned and effective progression of the teaching-learning process is only possible with well-designed curricula. Therefore, the development of discipline-specific curricula is of great importance for educational institutions to achieve their goals (Yazıcı & Koca, 2014). Ertürk (1998) defines the program development process as a continuum consisting of planning, designing, piloting, evaluating, revising, and disseminating stages. At each stage, systematic steps are taken to enhance the program's effectiveness, and the program is continuously improved. This process highlights the dynamic and variable nature of educational programs (Ertürk, 1998). In conclusion, program development is one of the cornerstones of the education system, ensuring the creation of effective, sustainable, and student-centered educational programs. This process requires a comprehensive approach that encompasses both the design of new programs and the improvement of existing ones.

Among program development models, the Tyler Model, Taba Model, Taba-Tyler Model, Systems Approach Model, Eisner Program Development Model, Kerr Model, the Ministry of National Education (MEB) Program Development Model, and Demirel's Program Development Model have the following characteristics: The Tyler model is one of the most well-known approaches in curriculum development. According to Tyler (2014), four fundamental questions should be asked when developing a curriculum or instructional plan: (1) What educational objectives should the school achieve? (2) What educational experiences should be provided to achieve these objectives? (3) How can these educational experiences be organized most effectively? (4) How can it be determined whether the objectives have been achieved? These questions form the four main components of an educational program (Ornstein & Hunkins, 2009). In the Tyler model, general objectives are determined based on data derived from society, the individual, and the subject area. These objectives are filtered through educational philosophy and learning psychology to transform them into specific instructional goals, and the process is completed through the selection, organization, guidance, and evaluation of learning experiences. The Taba model, on the other hand, adopts an inductive approach and offers a seven-stage process aimed at fostering students' comprehension and critical thinking skills (Laanemets & Kalamees-Ruubel, 2013; Olivia, 1997). The process begins with identifying needs and includes stages such as formulating objectives, selecting and organizing content, determining learning experiences, evaluating learning outcomes, and checking the relationships among program



components. The Taba-Tyler model can be defined as a rational planning model that places the student at the center of the teaching-learning process. This hybrid model combines Taba's inductive approach with Tyler's views on program components, incorporating the common aspects of both approaches in program development processes (Erişen, 1997).

The systems approach model, developed by Wulf and Schave (1984), suggests that teachers can also develop curricula. The model consists of three main components: problem definition, identification and evaluation of needs and content, and evaluation. The evaluation process is present at every stage, but the model is noted to focus predominantly on the evaluation dimension (Demirel, 1992). The Eisner program development model emphasizes that five fundamental dimensions must be considered in the education system: objectives, structure, curriculum, pedagogy, and evaluation (Eisner, 1991). The objectives dimension involves determining the core values of education, while structure pertains to the organization of schools and time management. The curriculum aims to facilitate students' interaction with fundamental knowledge and skills, while pedagogy emphasizes the effectiveness of the teaching process. Finally, evaluation should not only involve grading students but also serve as a tool for school improvement.

The Kerr model addresses the program development process through four main components: objectives, knowledge, learning experiences, and evaluation (Kerr, 1968). In the model, the selection and organization of content based on objectives is a critical stage, and it emphasizes that knowledge construction requires consistency, repetition, and organization. Learning experiences encompass the interaction between students and environmental factors, and this process is influenced by the school's organizational structure and teacher-student relationships. Evaluation involves assessing the feasibility of objectives, the appropriateness of content and methods, and measuring student achievement (Ishemo et al., 2012).

The MEB Program Development Model, developed by the Turkish Ministry of National Education in 2004, is influenced by the Taba and Tyler models but stands as an original model (Uzunboylu & Hürsen, 2012). While adopting a student-centered approach, the model also incorporates a subject-centered perspective in determining objectives (Demirel, 2006). Progressing from general objectives to skills and outcomes, the model emphasizes interdisciplinary connections and material development. Demirel's Program Development Model provides a framework aimed at enhancing the quality of teacher training. Initially structured around three main stages, the model was expanded over time into a structure comprising five sections and fifteen steps. While it shares similarities with the Taba-Tyler and MEB program development models, it differs in terms of planning, pilot applications, and evaluation processes. The model, which has a cyclical structure, highlights the importance of establishing R&D units and ensuring continuity in the program development process.

Curriculum development efforts vary significantly across countries, often reflecting different educational philosophies, cultural values, and technological advances. For example, Finland's curriculum framework emphasizes student autonomy, interdisciplinary learning, and the integration of digital tools, contrasting with the more centralized and subject-focused approaches seen in countries such as South Korea (Sahlberg, 2015). Similarly, the United States has increasingly adopted competency-based curricula that focus on mastering skills rather than time spent in classrooms; this trend has influenced educational reforms in countries such as Australia and Canada (Patrick, Kennedy, & Powell, 2013). These global trends highlight the importance of aligning curriculum development with both local needs and international best practices. In the European context, the European Union's emphasis on lifelong learning and digital competence has led to the integration of technologyenhanced learning strategies into national curricula. For example, Estonia's 'Digital Turn' initiative has embedded coding and computational thinking into its curriculum from primary school, reflecting a broader trend to prepare students for a digital economy (European Commission, 2020). Similarly, Singapore's curriculum reforms have focused on developing 21st-century skills such as critical thinking, creativity, and collaboration, which are increasingly seen as essential in a globalized world (Tan, 2017). These examples highlight the transformative potential of aligning curriculum development with global education priorities. Moreover, the role of educational technology in curriculum development has been a focus of international discourse. In the United Kingdom, the integration of artificial intelligence and adaptive learning platforms into the curriculum has been shown to personalize learning experiences and improve student outcomes (Luckin et al., 2016). Meanwhile, in Japan, the government's 'GIGA School Program' aims to provide every student with a digital device and high-speed internet, reflecting a commitment to using technology for equal access to education (MEXT, 2021). These initiatives demonstrate how technology can act as a catalyst for curriculum innovation on a global scale.

In contrast, developing countries often face challenges in aligning their curricula with global trends due to resource constraints and infrastructure limitations. For example, lack of access to digital tools and internet connectivity in many African countries has hindered the adoption of technology-focused curricula (Unwin et al., 2020). However,



initiatives such as Kenya's Digital Literacy Program, which aims to integrate tablets into primary education, demonstrate the potential to overcome these barriers through targeted investments and partnerships (Kozma & Vota, 2014). These examples highlight the need for context-sensitive approaches to curriculum development that balance global trends with local realities. Studies also demonstrate the increasing importance of sustainability education in curricula worldwide. Countries such as Sweden and Germany have integrated environmental literacy and the sustainable development goals (SDGs) into their national curricula, reflecting a broader commitment to addressing global challenges (UNESCO, 2017). Similarly, New Zealand's curriculum provides a model for incorporating local values into global frameworks by emphasizing local knowledge and cultural sustainability (Ministry of Education, New Zealand, 2020). These examples demonstrate how curricula can serve as vehicles for promoting both global citizenship and local identity.

Educational technology is increasingly playing a significant role in curriculum development processes. The rapid advancement of technology has necessitated that educational systems adapt to these changes. Educational technology not only serves an instrumental function in curriculum design but also has a transformative impact on learning processes. Particularly in the digital age, the ways in which students access information and their learning styles have evolved, requiring curricula to be designed with technology integration in mind (Selwyn, 2016). Educational technology enriches both content delivery and learning experiences in the curriculum development process. For instance, online learning platforms, virtual reality applications, and artificial intelligence-supported learning systems provide learning environments tailored to students' individual needs (Bates, 2015). These technologies enhance student engagement while enabling teachers to monitor and assess student performance in real time. Additionally, educational technology allows curricula to become more flexible and dynamic, enabling them to adapt more quickly to rapidly changing knowledge and skill requirements (Kirkwood & Price, 2014). In Turkey, the integration of educational technology into curriculum development processes is also increasing. Initiatives such as the FATIH Project have encouraged the strengthening of technological infrastructure in schools and the use of digital content (MEB, 2012). However, in this process, technology should not be viewed merely as a tool but as a transformative element in learning processes. The effective use of educational technology can make curricula more inclusive, accessible, and student-centered (Altun & Ates, 2018).

When the literature review focuses on program development studies for undergraduate-level courses, it becomes evident that there is no comprehensive compilation on this topic. To address this gap, a systematic review method has been adopted, aiming to provide a broad perspective on all studies conducted on program development at the undergraduate level. This approach seeks to contribute significantly to the body of knowledge in the field by offering a comprehensive overview of these studies.

METHODOLOGY

This study aims to comprehensively examine the process of research conducted in the field of program development for undergraduate-level courses, from its structuring to its conclusion. To achieve this goal, the systematic review method has been adopted. A systematic review is a methodological approach that involves identifying, selecting, critically analyzing, and systematically collecting and examining data from relevant studies to reassess a specific research question (Millar, 2004; Littell, Corcoran, & Pillai, 2008; Torgerson, 2003). Systematic reviews play a significant role in literature review processes due to their characteristics of objectivity, comprehensiveness, and replicability. Such studies, by clearly specifying the methods and study selection criteria, allow other researchers to easily replicate them and verify the results. For these reasons, systematic reviews are considered a critical tool for generating robust evidence (Hemingway & Brereton, 2009; Moula & Goodman, 2009). Millar (2004) emphasizes that systematic review studies should follow specific stages. These stages include clearly defining the research purpose, selecting studies based on predetermined criteria, outlining the key characteristics of the selected studies, and analyzing the findings from these studies to draw conclusions. In this study, the systematic review method has been chosen, aiming to conduct a detailed analysis of the examined research and to explore the data in a multidimensional and in-depth manner. The primary objective of this research is to identify and comprehensively evaluate studies conducted on program development for undergraduate-level courses in Turkey. Within this framework, the design of this research has been constructed by considering these principles.

Data Collection Process

The Council of Higher Education (YÖK) Thesis Center database was preferred to access the studies included in the review. The primary rationale for this choice is that program development processes, which are the focus of this review, are extensively addressed in graduate thesis research. Program development studies involve comprehensive and long-term sequential stages, such as needs analysis, program design, implementation, and evaluation. Therefore, the YÖK Thesis Center, which houses a large number of graduate theses, was deemed a suitable and reliable source for accessing such studies.



The data collection process was conducted between January 10, 2025, and January 15, 2025. No year restrictions were applied during the search, and the keyword "program development" was used to identify relevant studies. The initial search yielded 76 theses, which were then filtered under the "Education and Training" category, resulting in the identification of 57 theses deemed relevant. During the literature review process, the abstracts of the accessed studies were thoroughly examined by the researchers, and studies aligned with the objectives of the review were systematically recorded in a digital format using the "Year-Author(s)-Type" structure. The synthesis and categorization of the selected studies were carried out based on specific thematic criteria. Initially, a preliminary classification was made based on the educational level (undergraduate, graduate, etc.) and disciplinary focus (natural sciences, social sciences, engineering, etc.) of the studies. Subsequently, the stages of the program development process addressed by the studies (planning, design, implementation, evaluation) were analyzed, leading to a second round of categorization. Additionally, a detailed classification was performed by considering the methodologies used in the studies (quantitative, qualitative, mixed methods) and the program development models employed (Tyler, Taba, Taba-Tyler, etc.). Following the evaluations, it was determined that 22 theses did not focus on program development for an undergraduate-level course and were therefore excluded from the study. As a result, 25 theses were included in the review. The detailed flow chart of the search process is presented in Figure 1.

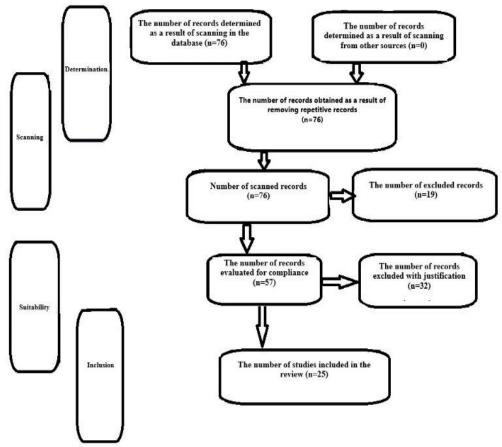


Figure 1: Search Process Diagram (Moher, D., Liberati, A., Tetzloff, I, Altman, D. G. and PRISMA Group, 2009, s. 1009).

FINDINGS

Research Types

Within the scope of the review, the focus was on graduate thesis studies conducted in the field of program development. According to the data presented in Figure 2, out of the 25 studies included in the review, 20 were doctoral theses (80%), and 5 were master's theses (20%). The fact that the majority of the research was published in the format of doctoral theses is considered a significant finding. This outcome can be interpreted as being related to the comprehensive and long-term nature of program development studies.



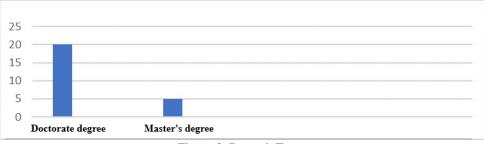


Figure 2. Resarch Types

Publication Years of the Studies

A comprehensive literature review was conducted on the YÖK Thesis Center database without any year restrictions. As a result of the examination, it was determined that the studies analyzed were published between 2010 and 2023. However, it was observed that studies were not published every year within this time frame. A column chart showing the distribution of studies by year is presented in Figure 3. Based on the graphical analysis, the earliest study on program development for an undergraduate-level course was found to have been published in 2010. Furthermore, when the publication density of the studies was examined, it was concluded that the highest number of studies, totaling 5, were conducted in 2019. These findings provide a significant perspective on the temporal distribution of studies in this field.

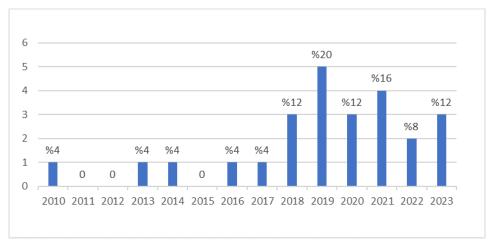


Figure 3. Publication Years of the Studies

Research Methods

When examining the methodological distribution of the 25 studies included in the review, it was found that 2 studies used quantitative methods (8%), 10 studies used qualitative methods (40%), and 13 studies employed mixed methods (52%). Among the studies using quantitative methods, one utilized the survey technique, while the other applied an experimental model. Of the studies conducted with qualitative methods, 3 were based on case study, 2 on survey models, and 2 on action research methods. The detailed distribution of the methods used in the studies is presented in Figure 4.

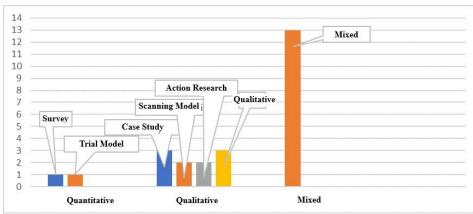


Figure 4. Research Methods

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Program Design Models Used in the Studies

It was found that the program design models used in the studies were not explicitly stated in every study. However, among the studies that specified a design model, the most commonly used model was DEPGEM, which was employed in 8 studies. Other design models were used only once each, including the Taba Model, Multidimensional Contemporary Teaching Model, Oliva Program Development Model, Taba-Tyler and Systems Model, Outcome-Based Design Model, ADDIE Model, Learning Trajectories in Education Model, and Taba-Tyler along with Kern and Posner Models. The program design models are presented in Figure 5.

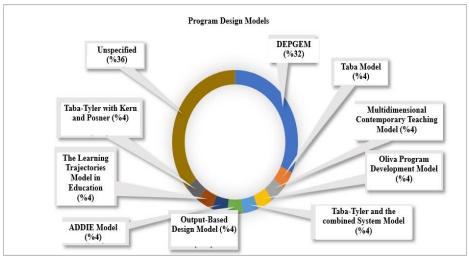


Figure 5. Program Design Models Used in the Studies

Faculties Where the Studies Were Conducted, Pilot Applications, and Program Evaluation Studies

When examining the faculties and departments where the studies were conducted, it was observed that the studies were distributed across various academic disciplines. According to the findings, 12 studies (48%) were carried out within education faculties, 5 studies (20%) in health sciences faculties, 3 studies (12%) in fine arts faculties, and 2 studies (8%) in tourism faculties. Additionally, other studies were conducted in institutions such as architecture faculties (4%), the International Baccalaureate Diploma Program (4%), and state conservatories (4%). When examining the disciplinary distribution of studies conducted within education faculties, it was found that 3 studies were in primary school teaching, 3 in Arabic language education, 2 in music education, 1 in social studies teaching, and 1 in preschool teaching, while 2 studies and departments where the studies were conducted is presented in Figure 6. These findings reveal that the studies exhibit interdisciplinary diversity and that education faculties stand out as a prominent focus in this field.

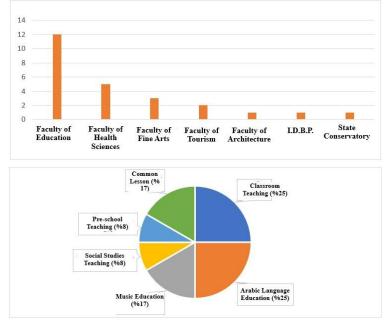


Figure 6. Faculties Where the Studies Were Conducted



In the studies conducted, it was found that a total of 12 studies (48%) included a program evaluation phase. Among these studies, 7 relied solely on the opinions of field experts, while 2 evaluated only student feedback. On the other hand, in 3 studies, data obtained from both experts and students were analyzed together. The details are presented in Figure 7. Additionally, it was concluded that only 7 of the studies examined (28%) conducted pilot applications to measure the effectiveness of the program. These findings reveal diversity in the involvement of different stakeholder groups in program evaluation processes and the use of pilot applications.

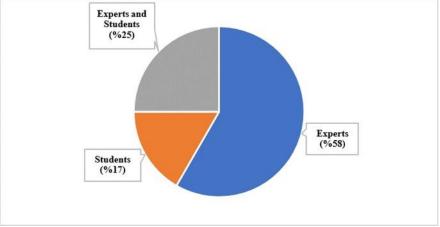


Figure 7. Program Evaluation Phase

Needs Analysis Studies in the Research

The analysis of the 25 studies examined in this research revealed that 6 studies (24%) did not include any needs analysis, while 19 studies (76%) conducted a needs analysis. When examining the methodological approaches of the studies that performed a needs analysis, it was found that 2 studies relied solely on a literature review, 1 study utilized only expert opinions, and 5 studies determined needs solely through student participation. Additionally, 5 studies involved both experts and students, while 4 studies consulted expert and student opinions in addition to conducting a literature review. Furthermore, 2 studies included the opinions of experts, students, industry representatives, and competent professionals in the needs analysis process. These findings demonstrate the diversity of needs analysis methods and the inclusion of different stakeholder groups in the process. The relevant data are presented in Figure 8.

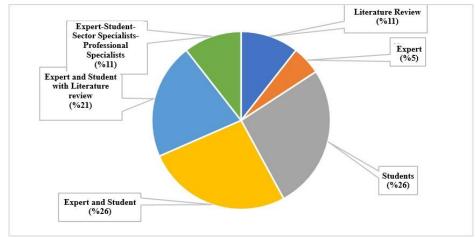


Figure 8. Needs Analysis Studies in the Research

Determination of Objectives in the Research

When analyzing the approaches to determining objectives within the scope of the examined studies, it was found that in 11 studies (44%), the objectives were formulated based on Bloom's taxonomy. On the other hand, in 14 studies (56%), no information regarding the taxonomy of objectives was available. This indicates that the objective-setting process was not clearly defined in these studies or that there was a methodological gap in this regard. The relevant data are presented in Figure 9.



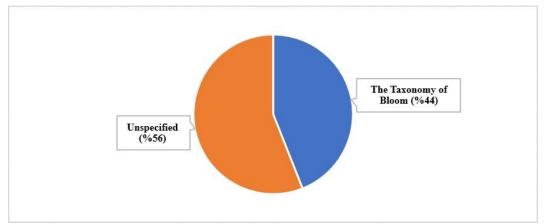


Figure 9. Determination of Objectives in the Research

CONCLUSION AND DISCUSSION

The fact that the majority of the research was published in the format of doctoral theses can be considered a significant finding in the literature. This outcome can be interpreted as being related to the comprehensive and long-term nature of program development studies. Program development processes typically involve detailed needs analysis, objective setting, content design, implementation, and evaluation stages, making it a natural tendency for such studies to be addressed within comprehensive academic works like doctoral theses (Demirel, 2015; Posner & Rudnitsky, 2006). Similarly, in the Turkish literature, it is observed that program development studies are predominantly concentrated in graduate theses. Particularly, doctoral theses in the field of educational sciences serve as an important resource for providing theoretical and practical contributions to program development processes (Şimşek, 2004; Erden, 2011). This can be explained by the interdisciplinary approach required for program development studies and the need for a long-term research process (Taba, 1962; Ornstein & Hunkins, 2018). Additionally, in foreign literature, program development studies are often addressed in doctorallevel research. For example, the program development model proposed by Tyler (1949) emphasizes the need for such studies to be conducted systematically and comprehensively. Similarly, Fullan (2007) highlights that educational reforms and program development processes should be approached with a long-term perspective. In this context, it can be said that doctoral theses provide a suitable research format for program development studies. In conclusion, the concentration of program development studies within doctoral theses can be associated with the complexity and comprehensiveness of this process. Since such studies require in-depth research both theoretically and practically, doctoral theses are considered an appropriate platform to meet this need.

When analyzing the methodological distribution of the 25 studies included in the review, it was found that 2 studies used quantitative methods (8%), 10 studies used qualitative methods (40%), and 13 studies employed mixed methods (52%). These findings indicate that qualitative and mixed methods are more commonly preferred in educational research. Among the studies using quantitative methods, one utilized the survey technique, while the other applied an experimental model. Of the studies conducted with qualitative methods, 3 were based on case study, 2 on survey models, and 2 on action research methods. This distribution demonstrates that various methods are used in educational research and that different approaches are adopted depending on the nature of the research questions (Creswell & Creswell, 2018; Büyüköztürk et al., 2020). The preference for the survey technique in quantitative studies can be associated with the opportunity to collect data from large samples and perform statistical analyses (Fraenkel, Wallen, & Hyun, 2019). Studies using experimental models are important for examining causal relationships and obtaining valid results through controlled experiments (Cohen, Manion, & Morrison, 2018). The adoption of different approaches such as case study, survey models, and action research in qualitative studies is significant for in-depth examination of research questions and consideration of contextual factors (Yıldırım & Simsek, 2018; Merriam & Tisdell, 2016). Particularly, action research stands out as a method that allows researchers to actively engage in the process in practice-oriented studies (Stringer, 2014). The predominance of mixed methods studies can be explained by the ability to combine quantitative and qualitative data to achieve more comprehensive and holistic results (Johnson & Onwuegbuzie, 2004). Mixed methods offer advantages in educational research by integrating different data sources and examining research questions from multiple dimensions (Creswell & Plano Clark, 2018). In conclusion, the methodological distribution of the examined studies highlights the prominence of qualitative and mixed methods in educational research. This can be associated with the complex and multidimensional nature of educational processes. The lower preference for quantitative methods can be interpreted as an indicator of the need for contextual and qualitative data over numerical data in educational research (Merriam, 2009; Patton, 2015).



It was found that the program design models used in the studies were not explicitly stated in every study. This indicates a lack of methodological transparency in program development processes. However, among the studies that specified a design model, the most commonly used model was Demirel's Educational Program Development Model (DEPGEM), which was employed in 8 studies. This model is frequently preferred due to its suitability for the Turkish education system and the systematic structure of its stages (Demirel, 2015). Other design models were used only once each, including the Taba Model, Multidimensional Contemporary Teaching Model, Oliva Program Development Model, Taba-Tyler and Systems Model, Outcome-Based Design Model, ADDIE Model, Learning Trajectories in Education Model, and Taba-Tyler along with Kern and Posner Models. The diversity of these models demonstrates the adoption of different approaches in program development processes (Ornstein & Hunkins, 2018; Posner & Rudnitsky, 2006). The widespread use of DEPGEM can be explained by its suitability for the Turkish education system and its ease of application by teachers and program development experts (Demirel, 2015). The lower preference for other models may be associated with their limited recognition in the local context or the complexity of their implementation (Simsek, 2004). For example, classical models such as the Taba Model and Tyler Model, while important for their goal-oriented approach in program development, are less preferred today due to the need for more flexible and dynamic models (Taba, 1962; Tyler, 1949). More structured and phased models like the ADDIE Model are frequently used, particularly in technology-enhanced learning environments. This model stands out for its systematic approach to program development through the stages of analysis, design, development, implementation, and evaluation (Branch, 2009). Similarly, the Outcome-Based Design Model is preferred in higher education programs for its focus on learning outcomes (Spady, 1994). Newer models, such as the Learning Trajectories in Education Model, are notable for their emphasis on individualized learning processes and flexible program design tailored to student needs (Simon & Tzur, 2004). However, the fact that this model was used only once in the examined studies suggests that it has not yet gained widespread adoption. In conclusion, the findings regarding the use of program design models reveal that local models like DEPGEM are prominent in program development studies in Turkey, while internationally recognized models are occasionally preferred. This highlights the need to adopt models that are both aligned with local needs and compatible with universal standards (Erden, 2011; Fullan, 2007).

When examining the faculties and departments where the studies were conducted, it was observed that the studies were widely distributed across various academic disciplines. According to the findings, 12 studies (48%) were carried out within education faculties, 5 studies (20%) in health sciences faculties, 3 studies (12%) in fine arts faculties, and 2 studies (8%) in tourism faculties. Additionally, other studies were conducted in institutions such as architecture faculties (4%), the International Baccalaureate Diploma Program (4%), and state conservatories (4%). This distribution demonstrates that program development studies are not limited to educational sciences but adopt an interdisciplinary approach (Demirel, 2015; Ornstein & Hunkins, 2018). Within education faculties, 3 studies were in primary school teaching, 3 in Arabic language education, 2 in music education, 1 in social studies teaching, and 1 in preschool teaching, while 2 studies were designed to encompass all departments within the education faculty. These findings highlight the central role of education faculties in program development studies and the focus on teacher training processes in this field (Erden, 2011; Simsek, 2004). Studies conducted in health sciences faculties are important for updating vocational training programs and developing curricula that meet the needs of the healthcare sector (Harden, 2001). Studies in fine arts and tourism faculties demonstrate the adoption of creative and flexible approaches in program development processes, reflecting the practical nature of these fields (Eisner, 2002; Tribe, 2002). Studies conducted in architecture faculties, the International Baccalaureate Diploma Program, and state conservatories emphasize the interdisciplinary and international dimensions of program development processes. In particular, the International Baccalaureate Program serves as an important example for developing curricula aligned with global standards (Hill, 2012). In conclusion, the fact that program development studies are conducted in various faculties and departments underscores the need for an interdisciplinary approach and the adoption of customized models to meet the unique needs of each field. This highlights the importance of addressing program development processes in both local and universal contexts (Fullan, 2007; Posner & Rudnitsky, 2006).

It was found that 12 studies (48%) included a program evaluation phase. This finding demonstrates that the evaluation stage is recognized as an important component of program development processes. However, the fact that evaluation processes were addressed in only about half of the studies indicates the need to increase awareness and implementation levels of this stage (Demirel, 2015; Stufflebeam & Shinkfield, 2007). In 7 of these studies, only the opinions of field experts were consulted, while in 2 studies, only student feedback was evaluated. Consulting field experts is an important step in ensuring the theoretical and pedagogical validity of the program (Erden, 2011). On the other hand, studies that used student feedback provide valuable data on how the program is perceived by its users and its contribution to learning processes (Patton, 2015). Additionally, in 3 studies, data from both experts and students were analyzed together. The use of multiple data sources makes program evaluation processes more comprehensive and reliable (Creswell & Plano Clark, 2018). This approach also allows for a



balanced evaluation of both the theoretical and practical dimensions of the program (Fullan, 2007). It was also found that only 7 studies (28%) conducted pilot applications to measure the effectiveness of the program. Pilot applications play a critical role in testing the feasibility and effectiveness of programs (Posner & Rudnitsky, 2006). However, the limited use of such applications in the studies suggests that pilot testing should be more widely adopted in program development processes (Taba, 1962). These findings reveal diversity in the involvement of different stakeholder groups and the use of pilot applications in program evaluation processes. However, it is clear that evaluation processes need to be addressed more systematically and comprehensively. In particular, the adoption of mixed methods that combine quantitative and qualitative data can provide a more holistic evaluation process (Johnson & Onwuegbuzie, 2004). In conclusion, involving field experts, students, and other stakeholders in program evaluation processes enhances the validity of the program both theoretically and practically. Additionally, the more widespread use of pilot applications will be an important step in testing the feasibility and effectiveness of programs (Stufflebeam & Shinkfield, 2007).

The analysis of the 25 studies examined in this research revealed that 6 studies (24%) did not include any needs analysis, while 19 studies (76%) conducted a needs analysis. This finding aligns with studies emphasizing that needs analysis is a critical step in program development processes. For instance, Demirel (2012) states that the success of the program development process begins with a needs analysis and that skipping this stage can negatively impact the program's effectiveness. Similarly, Witkin and Altschuld (1995) highlight that needs analysis plays a crucial role in designing educational programs that align with the target audience's requirements. When examining the methodological approaches of the studies that performed a needs analysis, it was found that 2 studies relied solely on a literature review, 1 study utilized only expert opinions, and 5 studies determined needs solely through student participation. These findings demonstrate the diversity of needs analysis methods. In particular, literature reviews are frequently preferred due to their systematic approach (Given, 2008). However, it is also emphasized that needs analyses based solely on literature reviews may lead to practice-oriented shortcomings (English & Kaufman, 1975). Additionally, 5 studies involved both experts and students, while 4 studies consulted expert and student opinions in addition to conducting a literature review. This aligns with studies showing that the use of multiple data sources enhances the validity and reliability of needs analysis (Stake, 2010). Furthermore, 2 studies included the opinions of experts, students, industry representatives, and competent professionals in the needs analysis process. This finding is supported by studies demonstrating that adopting a multi-stakeholder approach in needs analysis increases the inclusivity and applicability of the program development process (Porche, 2004; Demirel, 2006). In conclusion, these findings reveal the diversity of needs analysis methods and the inclusion of different stakeholder groups in the process. This underscores the importance of needs analysis in program development processes and the necessity of a multidimensional approach.

When analyzing the approaches to determining objectives within the scope of the examined studies, it was found that in 11 studies (44%), the objectives were formulated based on Bloom's taxonomy. Bloom's taxonomy is a widely used model in educational programs that allows for the classification of educational objectives into cognitive, affective, and psychomotor domains (Bloom, 1956; Anderson & Krathwohl, 2001). The use of this taxonomy facilitates the systematic and gradual determination of objectives, contributing to more effective planning of learning processes (Demirel, 2012). On the other hand, in 14 studies (56%), no information regarding the taxonomy of objectives was available. This indicates that the objective-setting process was not clearly defined in these studies or that there was a methodological gap in this regard. The lack of clearly defined objectives can negatively impact the effectiveness of the program development process, as objectives form the foundation of educational programs and provide a framework for measuring learning processes (Gronlund, 2000). These findings reiterate the importance of the objective-setting process in educational programs. The use of established models like Bloom's taxonomy can help ensure that objectives are determined systematically and consistently. However, the existence of studies that do not specify a taxonomy highlights the need for greater methodological rigor in this area. In light of these results, the following recommendations are proposed for future studies:

- Prioritize comprehensive and long-term research: The concentration of program development studies in doctoral theses underscores the need for in-depth and systematic research. Policymakers should support large-scale, interdisciplinary research projects to ensure that curricula are grounded in robust theoretical and empirical foundations.
- Adopt qualitative and mixed methods: The prevalent use of qualitative and mixed methods in educational research highlights the importance of contextual and holistic data. Curriculum design processes should incorporate qualitative data collection methods, such as interviews and focus groups, to capture the perspectives of teachers, students, and other stakeholders.
- Make program evaluation a mandatory phase: The finding that only 48% of studies included an evaluation phase reveals a significant gap in current practices. Evaluation stages should be standardized to measure the effectiveness of curricula, with feedback collected from all relevant stakeholders.



- Integrate local and international program development models: While local models like Demirel's Educational Program Development Model (DEPGEM) are effective, internationally recognized models such as ADDIE and Outcome-Based Design should also be adopted. This ensures that curricula are both locally relevant and globally competitive.
- Promote interdisciplinary collaboration: The wide distribution of program development studies across various faculties and departments highlights the importance of interdisciplinary approaches. Educational institutions should foster partnerships with industry and community stakeholders to align curricula with real-world needs.
- Establish needs analysis as a foundational step: The fact that 76% of studies included a needs analysis underscores its critical role. Curriculum designers should conduct thorough needs analyses using multiple data sources, such as literature reviews, expert opinions, and stakeholder feedback.
- Use established frameworks like Bloom's taxonomy for objective setting: The use of Bloom's taxonomy in 44% of studies demonstrates its effectiveness in guiding the objective-setting process. Curriculum designers should adopt such frameworks to ensure that learning objectives are clear, measurable, and aligned with desired outcomes.
- Expand the use of pilot applications: Only 28% of studies included pilot applications, indicating a need for greater emphasis on testing and refining curricula before full-scale implementation. Pilot programs should be standardized to identify potential issues and make necessary adjustments.
- Increase stakeholder engagement: Involving multiple stakeholder groups, including students, teachers, and industry representatives, in needs analysis and evaluation processes ensures that curricula are inclusive and practical. Policymakers should create platforms for stakeholder participation in curriculum design.
- Align curricula with global standards: The inclusion of studies from the International Baccalaureate Diploma Program and other international frameworks demonstrates the importance of aligning curricula with global standards. Policymakers should promote the integration of global competencies, such as critical thinking and digital literacy, into curricula.
- Provide training on program development models: To ensure the effective use of local and international program development models, educators and curriculum designers should receive training. This will enhance their ability to design systematic and flexible curricula.
- Use evaluation results for curriculum improvement: Data from program evaluations should be used to continuously refine and improve curricula. This ensures that educational programs remain dynamic and responsive to changing needs.
- Support technology integration: Findings on the role of educational technology in curriculum design highlight the potential of digital tools to enrich learning processes. Curricula should be designed to incorporate technology-enhanced learning environments tailored to students' individual needs.
- Integrate sustainability education into curricula: To address global challenges, topics such as sustainability and environmental literacy should be integrated into curricula. This prepares students to become responsible citizens in both local and global contexts.
- Ensure curricula are flexible and dynamic: To adapt to rapidly changing knowledge and skill requirements, curricula should be designed to be flexible and updatable. This ensures their long-term relevance and effectiveness.

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