

Exploring teachers' teaching skills: conceptual definition, documentation, and categorization

Filippos Evangelou, Konstantina Giannopoulou

Department of Primary Education, Faculty of Education Sciences, University of Ioannina, Ioannina, Greece

Article Info

Article history:

Received Nov 17, 2025

Revised Feb 13, 2026

Accepted Feb 23, 2026

Keywords:

Categorization

Conceptual definition

Professional development

Teachers

Teaching skills

ABSTRACT

This study investigates the conceptual definition and categorization of teaching skills, aiming at their systematic identification and analysis within the context of the educational process. Through a systematic literature review conducted in accordance with the preferred reporting items for systematic review and meta-analysis (PRISMA) statement guidelines, a broad spectrum of 27 teaching skills is documented, each linked to key aspects of teaching practice, such as lesson planning, classroom management, and assessment. The diversity of theoretical approaches to the taxonomy of skills highlights the need for a coherent and functional categorization, which-based on their common characteristics-consists of eight general domains of skills, such as teaching design skills and teaching implementation skills. This categorization enables the implementation of more targeted and effective interventions for both the education of pre-service teachers and the professional development of in-service teachers. The present study, as an element of originality, offers one of the first systematic categorizations of teaching skills into eight coherent domains. The practical implications of the study lie in providing a structured framework for teacher self-assessment and the design of professional development programs based on targeted teaching skills. The findings underscore the need for further research into the nature, development, and practical implementation of teaching skills in classroom settings.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Filippos Evangelou

Department of Primary Education, Faculty of Education Sciences, University of Ioannina

University Campus, GR-45110, Ioannina, Greece

Email: filipevang@uoi.gr

1. INTRODUCTION

Teaching is a multifaceted term, shaped by the social, cultural, and ideological context of each historical period and society in which it is examined [1]–[4]. In the context of 21st-century education, teaching has acquired a broader and more flexible character, encompassing the communication of knowledge through interdisciplinary and differentiated approaches, the development of skills, the enhancement of critical thinking, and the social adaptation of students to the realities of contemporary educational and social environments [1], [5]–[10]. Today's educators are expected to carry out their pedagogical and teaching roles in ways that ensure high-quality education for all students. This requires not only in-depth knowledge of the subject matter, but also mastery of teaching skills that enable the effective communication of knowledge [11], [12]. Furthermore, they should use a variety of teaching approaches to actively engage students, facilitate the construction of new knowledge, and achieve the desired learning outcomes through differentiated instructional practices and learning experiences [13]–[16]. Within this framework, teaching skills play a vital role, as they allow educators to implement modern teaching methods and techniques

effectively throughout their practice [4], [17], [18]. Teaching skills constitute a fundamental component of the educational process, as they are directly linked to the teacher's ability to design, organize, and evaluate instruction in ways that enhance the learning experience [19]–[22]. These skills encompass a combination of knowledge, techniques, and behaviors aimed at creating an effective and supportive learning environment [23], [24].

Within this context, the development of teaching skills represents a valuable asset and a key factor in the professional growth of both practicing educators and prospective teachers [24]–[29]. Professional development is an ongoing learning process through which educators acquire knowledge, skills, and personal attributes that enable them to fulfill their roles effectively. This process is inherently personal and unique for each teacher, as it contributes to the formation of their professional identity. This identity includes their self-image, motivations, and perception of their role, both in the present and in the future [30].

The review of the relevant literature revealed a wealth of studies concerning teaching skills. However, although many studies enumerate teaching skills, the existing literature in this field appears fragmented and lacks a comprehensive and holistic understanding, as only a limited number of studies provide a unified conceptual definition and a systematic categorization of these skills [24], [31]. Based on these findings, a clear research gap emerges regarding their conceptual delineation, as well as their systematic documentation and categorization.

The primary aim of this study is to explore teachers' teaching skills, define them conceptually, and categorize them systematically. More specifically, the study seeks to present and analyze each individual skill, highlighting its contribution to the learning process. The research questions guiding this study focus on: i) the conceptual definition of the term teaching skills; ii) the investigation, identification, and description of specific teaching skills as reported in the relevant literature; and iii) the development of a systematic categorization that organizes teaching skills based on common characteristics, practical applications, and theoretical approaches. Overall, this study aims to conceptualize, document, and categorize teaching skills in a systematic manner, in order to establish a clear theoretical foundation. Such a foundation may serve as a basis for cultivating and further developing these skills through teacher education and training programs.

2. METHOD

A systematic literature review was conducted in accordance with the recommendations of the preferred reporting items for systematic review and meta-analysis (PRISMA) statement [32]. The review process was organized into four distinct stages: identification, screening, eligibility, and inclusion, as shown in Figure 1, with the aim of systematically locating, evaluating, and synthesizing the relevant literature on teaching skills. Of the 520 studies identified, 50 studies that met the inclusion criteria (publication year, reference to the topic of teaching skills, shared characteristics, and their applications) were included in the fourth stage. Data were extracted and analyzed based on the three research questions of the present study. The analysis of these data was conducted in order to draw useful conclusions regarding: i) the conceptual definition of the term teaching skills; ii) the investigation, identification, and description of the individual teaching skills; and iii) their systematic categorization, which organizes teaching skills based on common characteristics, methods of utilization, and theoretical approaches.

2.1. Identification

In the first stage, a database search was conducted in Scopus, Web of Science (WoS), and Google Scholar using the following keywords: “skills”, “competences”, “teaching skills”, “instructional skills”, “21st-century teaching skills”, “teaching competences”, and “instructional competences”. It is worth noting that particular attention was paid to the precise translation of the term of skills into English, as there is not always a one-to-one correspondence. The search included articles published between 2015 and 2025, as well as some earlier publications deemed essential for the study. From the initial search across the three databases, 520 records were retrieved. Specifically, 108 records were identified in Scopus, 214 in WoS, and 198 in Google Scholar. The purpose of this identification stage was to capture all possible studies relevant to the review topic.

2.2. Screening

In the second stage, the studies (n=520) identified were subjected to an initial screening based on titles and abstracts to ensure that they met the inclusion criteria. A total of 352 studies were excluded due to irrelevance or duplicate records. The screening process allowed for the reduction of the initial volume of literature and the identification of the most relevant studies for further evaluation.

2.3. Eligibility

In the third stage, 168 studies (n=168) were examined for the quality of the methods used (valid research methods, clear presentation of methodology, and appropriate data analyses). Studies were excluded when they did not provide clear and reliable results, and when they failed to offer a clear conceptual definition and description of teaching skills. The following studies were included: i) those that provided conceptual definitions of the terms teaching skills and teaching competences; ii) those that examined teaching skills in depth; iii) theoretical, empirical, or review studies; iv) studies involving in-service or prospective teachers in formal education settings; v) studies published in peer-reviewed journals, conference proceedings, or academic books. This stage led to the final identification of studies that fully met the review criteria. A total of 118 were excluded at this stage.

2.4. Inclusion

In the fourth stage, 50 studies that met the inclusion criteria were used in the final review. The quality of these studies was assessed based on their qualitative and quantitative characteristics. The studies had to relate to criteria aligned with the three research questions of the present study, specifically focusing on the teaching skills that educators should possess during the teaching process and the potential common characteristics of these teaching skills. The studies ultimately included in the review provided reliable and relevant data, enabling the drawing of conclusions that have substantive value for the field of study. For each included study, information was collected regarding: i) the definitions of teaching skills; ii) the description of individual skills; iii) the proposed classifications or typologies, and iv) the educational and theoretical framework of the study. The main data analyzed concerned the individual teaching skills and their core characteristics.

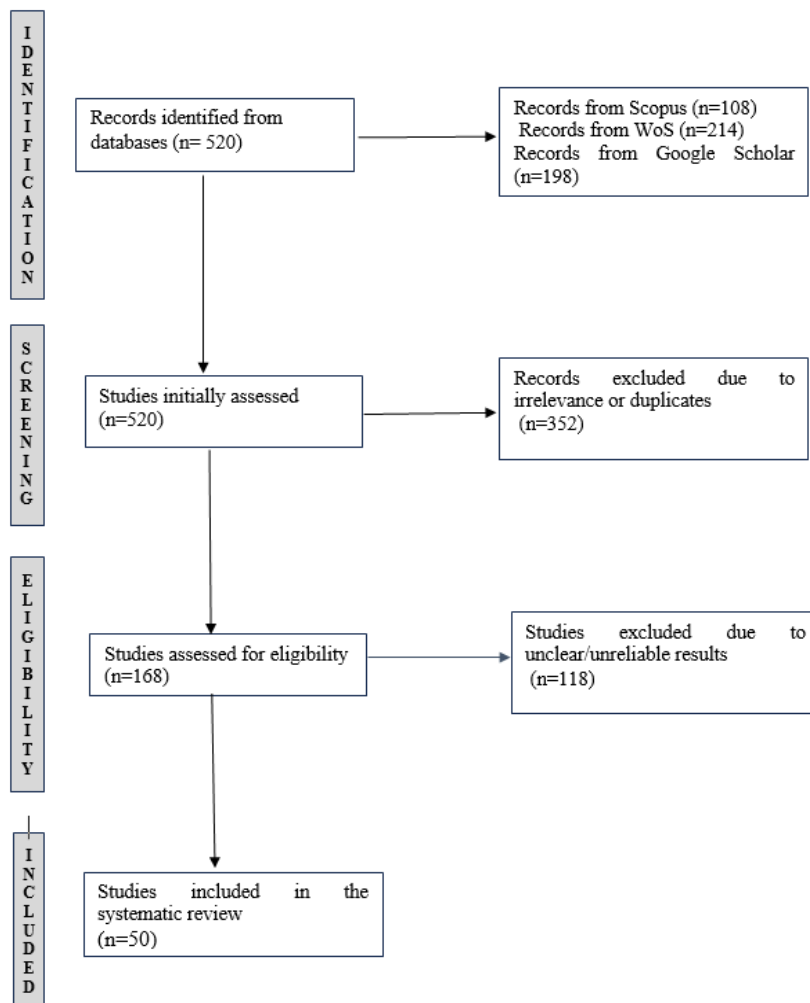


Figure 1. Flow diagram of the proposed searching study [32]

3. RESULTS AND DISCUSSION

From the systematic literature review, as reflected in the PRISMA flow diagram as shown in Figure 1, it is evident that 18 studies (n=18) were included to answer the first research question, namely the conceptual definition of the term teaching skills [19], [23], [24], [33]–[47]. Additionally, 32 studies (n=32) were included to answer the second and third research questions, which relate to the investigation, identification, and description of individual teaching skills, as well as their systematic categorization, organizing teaching skills based on common characteristics, methods of application, and theoretical approaches [8], [22], [48]–[77].

3.1. Defining the terms of “competence” and “skill”

Before attempting to define the term teaching skills, it is essential to clarify the term of competence and skill. These two terms are widely used in the fields of pedagogical science, didactics, and education more broadly. Although they are interrelated, they carry distinct meanings and functions. Notably, they are often used interchangeably in educational discourse, highlighting the inherent difficulty in drawing clear conceptual boundaries between them.

In the relevant academic literature, the term skill is defined as “the ability to perform a specific task”, “dexterity”, “proficiency”, or “the capacity of an individual to achieve a particular performance level through learning and practice” [33]–[39]. A skill is generally associated with more specific, task-oriented abilities that are developed through experience and practical application, and typically linked to hands-on activities. Rychen and Salganik [40] define skills as the ability to respond effectively to demanding situations through the activation of cognitive and psychosocial mechanisms. Skills extend beyond the mere accumulation of knowledge and involve internal factors such as intellectual capacities, attitudes, and resources, which interact dynamically with experience and environmental conditions to shape overall competence. The term of competence refers to a multifaceted integration of knowledge, skills, values, attitudes, and motivation that enables individuals to act effectively and coherently within a specific domain [24]. It is a broader term than that of skill and includes the capacity to apply knowledge and skills in real-world contexts, supporting autonomous decision-making and the successful completion of tasks or the achievement of goals [41].

3.2. Conceptual distinction between “competence” and “skill”

In clarifying the differences between competence and skill, several key distinctions have been identified [42]:

- A skill represents an observable behavior, yet the precise measurement of its acquisition level is challenging. In contrast, competence may not always be directly observable, but attempts are made to assess it using tools such as intelligence tests or assessments of general and specialized abilities. However, such measurements provide only indications, as the transformation of competence into skill is influenced by various external and internal factors.
- Chronologically, skill is seen as developing after competence. The existence of competence is a prerequisite for the development of skills, which are gradually cultivated over time. Competence is considered a more stable dimension of personality.
- Skill is associated with external characteristics and is evaluated based on observable performance. In contrast, competence refers to internal attributes of the individual, which are socially recognized as virtues.
- The development of a skill often requires the activation of certain competences. On the other hand, while competence can support the development of multiple skills, it does not, by itself, guarantee their expression in action.

Within the context of teaching, teacher competence includes the ability to understand and analyze the learning environment, to effectively organize and coordinate learning activities, to solve problems, and to manage the classroom. More broadly, it refers to a teacher’s capacity to adapt instruction to students’ needs, to recognize individual differences, and to employ appropriate teaching strategies and methods. In parallel, teaching skills are associated with the techniques and methods employed by the teacher to support the learning process. These include communication skills, lesson planning and organization, the use of teaching tools, and the implementation of modern methodological approaches. In other words, skill refers to the teacher’s ability to effectively and competently apply available teaching strategies and techniques.

In conclusion, within the field of pedagogical science, competences and skills are interrelated and constitute fundamental elements of effective teaching. The modern educator is expected to possess general competences that enable them to meet the challenges of teaching practice, as well as specialized teaching skills that enhance the learning experience for students. Competences define the teacher’s overall capacities and foundation, while skills reflect the practical application of these capacities in the context of day-to-day instruction.

3.3. Conceptual definition of the term “teaching skills”

The review of the relevant literature reveals the complex and multidimensional nature of the term teaching skills, as researchers approach it from diverse theoretical and practical perspectives. Teaching skills are linked both to the teaching process itself and to the teacher’s ability to meet the demands of contemporary education. Depending on the theoretical lens adopted, emphasis may be placed on the teacher’s competences, on the teaching strategies chosen, or on the behaviors exhibited during the act of teaching.

The range of definitions highlights the inherent complexity of teaching and underscores the need for a systematic investigation of the factors that enable a teacher to teach effectively. At the same time, it reflects the challenge of clearly delineating the term teaching skills, as each researcher interprets it based on different theoretical frameworks and criteria. Gage [19] defines teaching skills as specific activities and procedures that the teacher implements during instruction. These techniques may relate either to distinct stages of the teaching process or to the overall flow of the teaching practice.

Rani [23] offers a more comprehensive definition, presenting three dimensions of the term teaching skills: i) “teaching skills are those teacher behaviors that directly or indirectly facilitate student learning”; ii) “teaching skills include all techniques and behaviors used by the teacher that maximize student learning”; and iii) “teaching skills refer to the teacher’s ability to make communication with students adequate and effective.” Rani [23] further summarizes the term as a set of behaviors related to the teaching of subject matter, which are particularly effective in achieving desired learning and behavioral outcomes - either for the teacher or the students.

According to Sun *et al.* [43], drawing on psychological theory, teaching skills are viewed as a form of teaching behavior and capability essential for the effective execution of teaching tasks. They encompass cognitive elements, motor and intellectual skills, as well as teaching strategies. Bahjat [44] defines teaching skills as the teacher’s ability to design, implement, and evaluate a lesson. This ability involves a set of cognitive, motor, and social behaviors that are assessed based on teaching outcomes, student performance, lesson completion rate, and the teacher’s adaptability. The author emphasizes that teaching skills can be improved through targeted training programs.

Gao and Song [45] argue that teaching skills are not synonymous with subject matter knowledge. A teacher’s expertise in a specific field does not necessarily guarantee effective instruction. Teachers must possess not only content knowledge but also an understanding of how students learn, the difficulties they may face, and the methods for assessing their learning. Teaching skills, therefore, are a combination of subject knowledge and pedagogical strategies, and are regarded as professional competencies that require learning and continuous training.

Sugihartini *et al.* [46] regard teaching skills as pedagogical competences, expressed in the ways teachers organize lessons, deliver instruction, and establish interactive relationships with their students. A different perspective is offered by Ouardia and Sabah [47], who place teaching skills within the broader term of teaching competences, and more specifically within the pedagogical dimension. They distinguish between pre-teaching skills, which are related to the organization of instruction (e.g., content analysis, objectives, methods, and strategies), and teaching skills, which refer to classroom management, lesson preparation, the physical and psychological readiness of students, and the assignment of homework to reinforce and consolidate learning.

A review of these definitions reveals several common elements: teaching skills are consistently linked to the achievement of learning goals, whether conceptualized as techniques, behaviors, or as a combination of knowledge and competences. Their contribution to the quality of the learning process is strongly emphasized. Despite variations in theoretical perspectives, there is broad consensus that teaching skills extend beyond subject-matter knowledge to include the ability to manage teaching and facilitate student interaction.

Drawing on the literature, the conceptual definition of teaching skills refers to the ensemble of knowledge, strategies, and behaviors that enable teachers to effectively design, implement, and evaluate the teaching process. These skills enhance communication with students, support learning, and adapt to the specific needs of the classroom. They are cultivated and refined through experience and continuous professional development, ultimately aiming to improve the quality of teaching and promote positive learning outcomes.

3.4. Identification and description of key teaching skills frequently cited in the literature

Both international and Greek literature record a wide range of teaching skills that teachers are expected to possess in order to fulfill the demands of their pedagogical and teaching roles. These skills are variously described as competences or as critical factors for effective teaching. The literature review identified 27 teaching skills that appear most frequently, which are presented and analyzed:

- Questioning skills: the teacher’s ability to pose targeted questions at the appropriate moment is a fundamental component of the teaching process, contributing both to content comprehension and the

development of students' critical thinking [48], [49]. The variety in question types, the formulation of the questions, and the wait time for student responses are directly linked to the quality of learning [50]. Questions serve both teaching and assessment purposes, and their effectiveness depends on the teacher's questioning techniques [51].

- Time management skills: these skills involve the teacher's ability to organize, plan, prioritize, and allocate time according to the needs of various learning activities [52]. The development of time management skills is associated with improved teaching performance [53].
- Assessment skills: assessment skills refer to the teacher's ability to select and implement appropriate evaluation practices for monitoring student learning. The more developed these skills are, the more effective the resulting learning outcomes tend to be [54].
- Lesson planning skills: lesson planning serves as the primary guide for teachers during the teaching process. These skills involve the teacher's ability to design educational plans that activate students' thinking, clearly explain the learning activities, and incorporate appropriate methods of assessment [55]. The presence of well-structured and flexible lesson plans is closely linked to the overall quality of instruction [53].
- Effective use of error correction procedures and corrective feedback skills: the effective application of error correction strategies and provision of constructive feedback is a crucial aspect of teaching practice. Teachers are expected to identify students' mistakes and address them in a positive, encouraging, and specific manner that promotes learning without discouragement [56].
- Constructive skills: constructive skills refer to the teacher's ability to design pedagogically grounded activities that actively engage students in the learning process [57].
- Organizational skills: these include the teacher's capacity to manage teaching time, organize the classroom environment, plan activities, and create a functional educational setting. Organizational skills are also essential for the planning of extracurricular events [57].
- Communicative skills: communicative skills involve the clear and effective transmission of messages, the establishment of interaction with students, and the enhancement of their confidence and trust. Communication is considered a fundamental component of high-quality teaching [8], [58], [59].
- Teaching of content skills (cognitive skills): this refers to the teacher's subject-matter knowledge, pedagogical competence, and ability to convey information in an understandable and educationally appropriate manner [57].
- Listening skills: the ability to listen attentively allows the teacher to understand students' needs, thoughts, and emotions, thereby enhancing the effectiveness of communication [60]. This is a skill that requires practice and time to develop [61].
- Motion skills: motion skills relate to how the teacher moves around the classroom, approaches students, and supports the learning flow through their physical presence [57].
- Classroom management skills: the ability to manage the classroom is fundamental for establishing a positive learning environment. The absence of this skill often leads to disciplinary issues. Effective classroom management relies on the teacher's personality, professionalism, and organizational competence [22], [62], [63].
- Critical thinking skills: critical thinking is essential not only for the teacher but also as a means of fostering it in students. These skills are developed through professional experience and ongoing training [64], [65].
- Cooperation skills: cooperative skills help foster a positive classroom climate, enhance students' negotiation abilities, leadership, and reflective thinking, and improve social interactions among classmates [66].
- Creativity skills: creativity skills enable the teacher to enrich the learning process through innovative ideas and enjoyable activities. The teacher's imagination and creativity make lessons more engaging and contribute to the development of students' creative capacities [67], [68].
- Guiding skills: these skills help teachers support students, strengthen their self-confidence, and guide their personal and academic growth [69].
- Creating the learning environment skills: the ability to create a supportive and stimulating learning environment is particularly important for fostering self-regulated learning, especially in primary education [70].
- Motivating learning skills: the teacher plays a key role in enhancing both intrinsic and extrinsic motivation in students. Providing encouragement, creating a positive environment, and promoting engagement are vital elements [71].
- Craft of teaching skills: these refer to the teacher's fluency and technical capacity to manage the teaching process effectively, establishing a steady and productive rhythm of learning in the classroom [72].

- How to use resources skills: the ability to utilize a variety of teaching resources improves teaching quality. The broader and more effective the use of resources, the better the learning outcomes [73].
- Interpersonal skills: interpersonal skills relate to the strengthening of teacher–student relationships and contribute to the creation of a positive school climate and high-quality educational interaction [8], [74].
- Lesson clarity skills: lesson clarity refers to the teacher’s ability to present content in a clear, coherent, and understandable way, thereby enhancing students’ concentration and comprehension [75].
- Teaching variety skills: these skills concern the teacher’s ability to employ a range of teaching techniques and strategies, adapting instruction to meet students’ needs and sustain their interest [76].
- Teaching flexibility skills: teaching flexibility involves the teacher’s ability to adjust teaching in real time, selecting and alternating strategies as needed to maintain lesson effectiveness [76].
- Teacher task orientation skills: this skill refers to the teacher’s goal orientation and their ability to manage time and resources effectively to achieve learning outcomes [76].
- Using the blackboard skills: effective use of the blackboard is a fundamental teaching element, serving as a visual aid and a tool for organizing and presenting knowledge [77].
- Illustrating and use of examples skills: the ability to select appropriate examples and images enhances the comprehension of learning content and makes instruction more accessible and engaging [77].

3.5. Categorization teaching skills

Based on the mapping of teaching skills, it is evident that different classifications are proposed depending on each researcher’s theoretical framework; however, the same skills do not appear consistently across all approaches. Within this context, contradictions or overlaps emerge in the individual definitions of teaching skills, making it necessary to categorize them by taking into account their shared characteristics. In other words, eight distinct domains of teaching skills are created, in which common elements from individual characteristics of teaching skills are not repeated. More specifically, their categorization is classified as the following eight general domains, as shown in Table 1. The categorization of teaching skills is visualized in the following visual model as shown in Figure 2.

Table 1. Categorization of teaching skills into eight domains

Domains of teaching skills	Teaching skills	Common features
Teaching design skills	<ul style="list-style-type: none"> – Lesson planning skills – Teacher task orientation – Creating the learning environment skills – Organizational skills – Constructive skills 	These skills relate to the strategic planning of instruction, goal setting, and the creation of a conducive learning environment. They are typically applied before the lesson begins.
Teaching implementation skills	<ul style="list-style-type: none"> – Questioning skills – Teaching of content skills – Lesson clarity – Teaching variety – Teaching flexibility – Craft of teaching skills – How to use resources skills – Motion skills – Using the blackboard skills – Illustrating and use of examples skills 	This category includes the skills necessary for the effective delivery of a lesson.
Managerial skills	<ul style="list-style-type: none"> – Time management skills – Classroom management skills 	These focus on the management of two critical aspects the teacher must address during instruction.
Assessment and feedback skills	<ul style="list-style-type: none"> – Assessment skills – Effective use of error correction procedures skills 	These skills support understanding of the learning process and continuous improvement of student performance.
Communication and interaction skills	<ul style="list-style-type: none"> – Communicative skills – Listening skills – Cooperation skills – Interpersonal skills 	These ensure effective communication and positive interaction within the learning environment.
Creative skills	<ul style="list-style-type: none"> – Creativity skills 	These skills foster creative thinking and innovative approaches to learning.
Guidance and motivation skills	<ul style="list-style-type: none"> – Guiding skills – Motivating learning skills 	These relate to fostering enthusiasm and increasing student engagement.
Critical and analytical thinking skills	<ul style="list-style-type: none"> – Critical thinking skills 	These skills are essential for promoting higher-order learning.

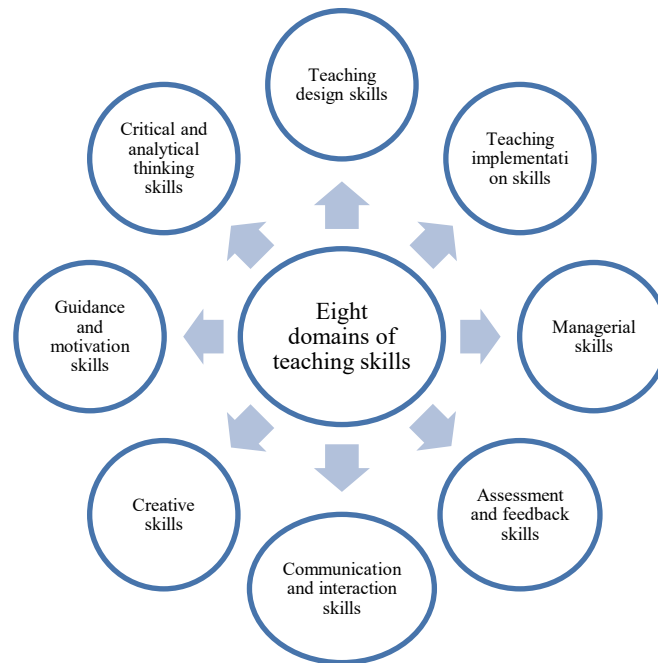


Figure 2. Visual model for the eight domains of teaching skills

4. CONCLUSION

The literature review revealed a significant number of teaching skills that are considered essential for effective teaching practice. However, not all of these skills are included in the present study, as some were only nominally referenced in the literature without further elaboration or analysis. In addition, considerable variation was observed in the ways these skills are categorized. Differences were found both in the structure of the proposed domains and in their content—an outcome that appears to stem from the diverse theoretical and methodological approaches adopted by different researchers. In response, this study proposes a more systematic and functional categorization, primarily based on the shared characteristics of the skills.

The unique contribution of this study lies in addressing the identified research gap through the systematic documentation and functional categorization of 27 teaching skills into eight general domains, based on their shared characteristics. By aligning these specific skills with distinct stages of the teaching process, the study provides a robust, evidence-based framework that transcends theoretical definitions. In other words, the present study is original because, through the categorization of teaching skills, it synthesizes a fragmented literature into a coherent theoretical framework.

The practical implications of this categorization are significant, as it offers a structured tool for teacher self-assessment and a strategic foundation for educational institutions to design targeted professional development programs and more effective teacher training interventions. Notably, the competent authorities implementing teacher education programs can utilize the categorization of teaching skills and design courses around each category of skills. This categorization can serve as a useful tool for both practicing teachers aiming to enhance their teaching skills and for institutions responsible for teacher training and professional development. By organizing teaching skills into meaningful domains, targeted analysis and the development of tailored training programs become feasible, better addressing the individual needs of each educator. Moreover, this approach allows teachers to identify their strengths and areas requiring improvement.

Additionally, categorizing teaching skills enables their alignment with different stages of the teaching process (e.g., preparation, classroom management, assessment, and feedback), thereby enhancing pedagogical and didactic competence and ultimately contributing to teachers' professional growth. Finally, the field of teaching skills remains open for further investigation, as notable research gaps exist, particularly regarding their categorization and cultivation in practice. Future studies are encouraged to focus on the design of training programs aimed at developing teaching skills in primary and secondary education, grounded in well-documented theoretical and practical frameworks, as well as the empirical validation of the categorization of teaching skills in real school environments.

FUNDING INFORMATION

Authors state no funding involved.

AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

Name of Author	C	M	So	Va	Fo	I	R	D	O	E	Vi	Su	P	Fu
Filippos Evangelou	✓	✓	✓	✓	✓	✓		✓	✓	✓				✓
Konstantina Giannopoulou	✓	✓				✓	✓	✓	✓	✓	✓	✓		

C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

E : Writing - Review & Editing

Vi : Visualization

Su : Supervision

P : Project administration

Fu : Funding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

DATA AVAILABILITY

The authors confirm that the data supporting the findings of this study are available within the article.




REFERENCES

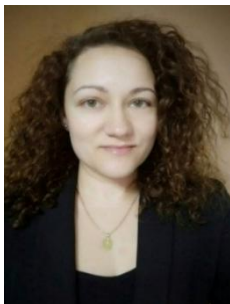
- [1] F. Evangelou, "Teaching techniques for developing the learner-centred approach in the classroom," *European Journal of Education Studies*, vol. 10, no. 2, pp. 166–192, Feb. 2023, doi: 10.46827/ejes.v10i2.4667.
- [2] F. Ligozat, K. Klette, and J. Almqvist, "Didactics in a changing world—introduction," in *Didactics in a Changing World. Transdisciplinary Perspectives in Educational Research*, F. Ligozat, K. Klette, and J. Almqvist, Eds., Cham: Springer International Publishing, 2023, pp. 1–14, doi: 10.1007/978-3-031-20810-2_1.
- [3] G. Gay, *Culturally responsive teaching: theory, research, and practice*, 3rd ed. New York: Teachers College Press, 2018.
- [4] M. Tzifopoulos, "Pre-service secondary teachers reflect on their pedagogical practicum experiences," *International Journal of Education and Research*, vol. 8, no. 12, pp. 59–74, 2020.
- [5] A. Felce, "Managing the quality of higher education in apprenticeships," *Higher Education, Skills and Work-based Learning*, vol. 9, no. 2, pp. 141–148, May 2019, doi: 10.1108/HESWBL-10-2018-0106.
- [6] A. Nir, R. Bogler, D. Inbar, A. Zohar, and A. Ben-David, "Promoting 21st century pedagogy: can school autonomy and school-based professional development processes make a difference?" *Education Inquiry*, pp. 1–24, Feb. 2024, doi: 10.1080/20004508.2024.2318841.
- [7] R. G. Tharp, P. Estrada, S. S. Dalton, and L. A. Yamauchi, *Teaching transformed: achieving excellence, fairness, inclusion, and harmony*, 1st ed. New York: Routledge, 2018, doi: 10.4324/9780429496943.
- [8] A. A. bin Jwair and D. A. H. Al-Dosari, "How primary school teachers perceive and develop students' future skills?" *Education Research International*, vol. 2023, pp. 1–15, Apr. 2023, doi: 10.1155/2023/6160658.
- [9] V. J. Llorent, F. Yuste-Hidalgo, and M. Núñez-Flores, "Teachers' characteristics for the teaching of social and emotional competencies in secondary education," *Journal of Education for Teaching*, vol. 51, no. 3, pp. 432–450, Mar. 2025, doi: 10.1080/02607476.2025.2480085.
- [10] F. Yuste-Hidalgo, F. Stefanelli, E. Menesini, and V. J. Llorent, "Longitudinal association between teachers' social, emotional, and moral competencies and their teaching of social, emotional, and moral competencies: the mediating role of perceived importance and teaching planning," *Teaching and Teacher Education*, vol. 171, p. 105340, Mar. 2026, doi: 10.1016/j.tate.2025.105340.
- [11] W. van de Grift, O. Lee, and S. Chun, "Measuring teaching skill of South Korean teachers in secondary education: detecting a teacher's potential zone of proximal development using the Rasch model," in *Effective Teaching Around the World: Theoretical, Empirical, Methodological and Practical Insights*, R. Maulana, M. Helms-Lorenz, and R.M. Klassen, Eds., Cham: Springer International Publishing, 2023, pp. 165–204, doi: 10.1007/978-3-031-31678-4_8.
- [12] C. Martinez, "Developing 21st century teaching skills: a case study of teaching and learning through project-based curriculum," *Cogent Education*, vol. 9, no. 1, p. 2024936, Jan. 2022, doi: 10.1080/2331186X.2021.2024936.
- [13] S. Kaldi, C. Govaris, and D. Filippatou, "Teachers' views about pupil diversity in the primary school classroom," *Compare*, vol. 48, no. 1, pp. 2–20, Apr. 2018, doi: 10.1080/03057925.2017.1281101.
- [14] M. Pozas, V. Letzel-Alt, and S. Schwab, "The effects of differentiated instruction on teachers' stress and job satisfaction," *Teaching and Teacher Education*, vol. 122, p. 103962, Feb. 2023, doi: 10.1016/j.tate.2022.103962.
- [15] U. Prates, M. Cruz, D. Mascarenhas and C. Maia-Lima, "Technology Experiences in Initial Teacher Education: A Systematic Review," *Open Education Studies*, vol. 7, no. 1, 2025, doi: 10.1515/edu-2024-0059.




- [16] R. Smit and E. Weingartner, "Teachers' attitudes towards and perceptions of diverse practices of differentiated instruction," *Teaching and Teacher Education*, vol. 172, p. 105357, Apr. 2026, doi: 10.1016/j.tate.2025.105357.
- [17] S. Kaldi and E. Xafakos, "Student teachers' school teaching practice: the relation amongst perceived self-competence, motivation and sources of support," *Teaching and Teacher Education*, vol. 67, pp. 246–258, Oct. 2017, doi: 10.1016/j.tate.2017.05.019.
- [18] C. A. Poth, "What assessment knowledge and skills do initial teacher education programs address? A Western Canadian perspective," *Alberta Journal of Educational Research*, vol. 58, no. 4, pp. 634–656, Jun. 2013, doi: 10.55016/ojs/ajer.v58i4.55670.
- [19] N. L. Gage, "An analytical approach to research on instructional methods," *Journal of Experimental Education*, vol. 37, no. 1, pp. 119–125, 1968, doi: 10.1080/00220973.1968.11011098.
- [20] A. Jentsch and J. König, "Teacher competence and professional development," in *International Handbook of Comparative Large-Scale Studies in Education: Perspectives, Methods and Findings*, T. Nilsen, A. Stancel-Piątak and J. E. Gustafsson, Eds., Cham: Springer International Publishing, 2022, pp. 1167–1183, doi: 10.1007/978-3-030-88178-8_38.
- [21] K. Kolesnik, N. Oliinyk, N. Komarivska, N. Kazmirchuk, and V. Imber, "Future-Teacher Soft Skills Development in the Context of Ukraine's Integration into the European Higher Education Area," *International Journal of Learning, Teaching and Educational Research*, vol. 22, no. 2, pp. 413–431, Feb. 2023, doi: 10.26803/ijlter.22.2.23.
- [22] S. Woodcock and A. Reupert, "First-year primary teachers' classroom management strategies: perceptions of use, confidence, and effectiveness," *Journal of Education for Teaching*, vol. 50, no. 1, pp. 90–106, May 2024, doi: 10.1080/02607476.2023.2219218.
- [23] B. Rani, "Classification of the teaching skills based on Q-methodology using the perceptions of sec. school teachers," *International Journal of Educational Planning & Administration*, vol. 1, no. 2, pp. 141–150, 2009.
- [24] H. Zhang and M. Tian, "Unpacking the multi-dimensional nature of teacher competencies: a systematic review," *Scandinavian Journal of Educational Research*, vol. 69, no. 5, pp. 1004–1025, Jul. 2025, doi: 10.1080/00313831.2024.2369867.
- [25] C. Preston, E. Goldring, J. E. Guthrie, R. Ramsey, and J. Huff, "Conceptualizing essential components of effective high schools," *Leadership and Policy in Schools*, vol. 16, no. 4, pp. 525–562, Aug. 2017, doi: 10.1080/15700763.2016.1205198.
- [26] J. A. S. Aroca, P. M. Abellán, and S. M. de M. López, "Teachers' professional development and intelligent ways of coping with it: a systematic review in elementary and middle school education," *Journal of Intelligence*, vol. 11, no. 1, p. 1, Dec. 2023, doi: 10.3390/jintelligence11010001.
- [27] S. J. Niu, H. Niemi, V. Harju, and L. Pehkonen, "Finnish student teachers' perceptions of their development of 21st-century competencies," *Journal of Education for Teaching*, vol. 47, no. 5, pp. 638–653, 2021, doi: 10.1080/02607476.2021.1951602.
- [28] M. Wang, T. Long, N. Li, Y. Shi, and Z. Chen, "The impact of different types of feedback on pre-service teachers' microteaching practice and perceptions," *Education and Information Technologies*, vol. 30, no. 4, pp. 5427–5448, Sep. 2025, doi: 10.1007/s10639-024-13024-z.
- [29] C. M. Fernández-García, M. Inda-Caro, and M. P. Viñuela-Hernández, "Teaching effectiveness in Spain: towards an evidence-based approach for informing policymakers," in *Effective Teaching Around the World: Theoretical, Empirical, Methodological and Practical Insights*, R. Maulana, M. Helms-Lorenz, and R.M. Klassen, Eds., Cham: Springer International Publishing, 2023, pp. 283–298, doi: 10.1007/978-3-031-31678-4_13.
- [30] E. A. C. Rushton, E. R. Smith, S. Steadman, and E. Towers, "Understanding teacher identity in teachers' professional lives: a systematic review of the literature," *Review of Education*, vol. 11, no. 2, p. e3417, Aug. 2023, doi: 10.1002/rev3.3417.
- [31] E. Martín-Pastor, B. Sánchez-Barbero, D. Corrochano, and A. Gómez-Gonçalves, "What competencies and capabilities identify a good teacher? Design of an instrument to measure preservice teachers' perceptions," *Education Sciences*, vol. 13, no. 8, p. 789, Aug. 2023, doi: 10.3390/educsci13080789.
- [32] M. J. Page *et al.*, "The PRISMA 2020 statement: an updated guideline for reporting systematic reviews," *BMJ*, vol. 372, p. n71, Mar. 2021, doi: 10.1136/bmj.n71.
- [33] G. Yadav and J. Duque, "Reflecting on what is 'skill' in human motor skill learning," *Frontiers in Human Neuroscience*, vol. 17, p. 1117889, Jul. 2023, doi: 10.3389/fnhum.2023.1117889.
- [34] A. M. Haih and J. W. Krakauer, "The multiple effects of practice: skill, habit and reduced cognitive load," *Current Opinion in Behavioral Sciences*, vol. 20, pp. 196–201, Apr. 2018, doi: 10.1016/j.cobeha.2018.01.015.
- [35] M. Zamiri and A. Esmaili, "Strategies, methods, and supports for developing skills within learning communities: a systematic review of the literature," *Administrative Sciences*, vol. 14, no. 9, p. 231, Sep. 2024, doi: 10.3390/admsci14090231.
- [36] J. Lamri and T. Lubart, "Reconciling hard skills and soft skills in a common framework: the generic skills component approach," *Journal of Intelligence*, vol. 11, no. 6, p. 107, Jun. 2023, doi: 10.3390/jintelligence11060107.
- [37] J. Diedrichsen and K. Kornysheva, "Motor skill learning between selection and execution," *Trends in Cognitive Sciences*, vol. 19, no. 4, pp. 227–233, Apr. 2015, doi: 10.1016/j.tics.2015.02.003.
- [38] N. Abercrombie, S. Hill, and B. S. Turner, *The penguin dictionary of sociology*, 5th ed. London: Penguin Books, 2006.
- [39] F. E. Weinert, "Concept of competence: a conceptual clarification," in *Definition and Selection of Competencies: Theoretical and Conceptual Foundation (DeSeCo)*, D. S. Rychen and L. H. Salganik, Eds., Cambridge, MA: Hogrefe & Huber Publishers, 2001, pp. 44–65.
- [40] D. S. E. Rychen and L. H. E. Salganik, *Key competencies for a successful life and a well-functioning society*. Cambridge, MA: Hogrefe and Huber Publishers, 2003.
- [41] B. Hoskins and R. D. Crick, "Competences for learning to learn and active citizenship: different currencies or two sides of the same coin?" *European Journal of Education*, vol. 45, no. 1, pp. 121–137, Feb. 2010, doi: 10.1111/j.1465-3435.2009.01419.x.
- [42] M. Mulder, "Conceptions of professional competence," in *International Handbook of Research in Professional and Practice-based Learning*, S. Billett, C. Harteis and H. Gruber, Eds., Dordrecht: Springer Netherlands, 2014, pp. 107–137, doi: 10.1007/978-94-017-8902-8_5.
- [43] J. Sun, C. Kang, and Y. Wang, "Analysis on hierarchical model of teaching skills based on multimedia technology," in *International Conference on Computer Science, Environment, Ecoinformatics, and Education*, 2011, pp. 516–521, doi: 10.1007/978-3-642-23345-6_93.
- [44] A. Bahjat, "Effectiveness of using microteaching and thinking style to develop teaching skills in Arab Open University-Jordan Branch," *International Journal of Learning, Teaching and Educational Research*, vol. 15, no. 3, pp. 118–133, 2016.
- [45] C. Gao and S. Song, "Key elements of teaching skill of physical education teachers," in *2019 International Conference on Social Science and Education (ICSSAE 2019)*, 2019, pp. 130–134.
- [46] N. Sugihartini, G. P. Sindu, K. S. Dewi, M. Zakariah, and P. Sudira, "Improving teaching ability with eight teaching skills," in *3rd International Conference on Innovative Research Across Disciplines (ICIRAD 2019)*, 2020, pp. 306–310, doi: 10.2991/assehr.k.200115.050.

- [47] S. Ouardia and T. Sabah, "The role of learning strategies and teaching skills in improving student performance," *Elementary Education Online*, vol. 23, no. 2, pp. 342–353, 2024.
- [48] A. T. Wood and C. H. Anderson, "The case study method: critical thinking enhanced by effective teacher questioning skills," in *Annual International Conference of the World Association for Case Method Research and Application*, 2001, pp. 1–12.
- [49] J. S. Nappi, "The importance of questioning in developing critical thinking skills," *Delta Kappa Gamma Bulletin*, vol. 84, no. 1, pp. 30–41, 2017.
- [50] K. Cotton, "Classroom questioning," *School improvement research series*, vol. 5, pp. 1–22, 1988.
- [51] M. C. Sitko and A. G. Slemon, "Developing teachers' questioning skills: the efficacy of delayed feedback," *Canadian Journal of Education/Revue canadienne de l'éducation*, vol. 7, no. 3, pp. 109–121, 1982, doi: 10.2307/1494698.
- [52] E. K. Marika, "Influence of teacher time management practices on service delivery in public secondary schools in Kitui County," *International Journal of Education and Research*, vol. 9, no. 7, pp. 49–60, 2021.
- [53] H. M. Ather, K. F. Taher, K. Atif, and F. Imran, "Exploring relationship of time management with teacher's performance," *Bulletin of Education and Research*, vol. 38, no. 2, pp. 249–263, 2016.
- [54] T. Eman, A. Awaiz, and Nazirullah, "Assessment practices and assessment skills of teachers at secondary school level: factorability and associative perspective," *Journal of Peace, Development and Communication*, vol. 7, no. 1, pp. 101–116, Mar. 2023, doi: 10.36968/jpdc-v07-i01-10.
- [55] I. R. Suwarma and S. Apriyani, "Explore teachers' skills in developing lesson plan and assessment that oriented on higher order thinking skills (HOTS)," *Journal of Innovation in Educational and Cultural Research*, vol. 3, no. 2, pp. 106–113, Jan. 2022, doi: 10.46843/jiecr.v3i2.66.
- [56] K. M. Alghazo, M. S. B. Abdelrahman, and A. A. A. Qbeith, "The effect of teachers' error feedback on Al-Hussein Bin Talal University students' self-correction ability," *European Journal of Social Sciences*, vol. 12, no. 1, pp. 146–160, 2009.
- [57] U. Sanjar, "Innovative methods of improving the professional skills of a teacher of physical culture," *International Journal of Research in Commerce, IT, Engineering and Social Sciences*, vol. 16, no. 6, pp. 20–23, 2022.
- [58] S. Saunders and M. A. Mills, "The knowledge of communication skills of secondary graduate student teachers and their understanding of the relationship between communication skills and teaching," in *AARE Annual Conference*, 1999, pp. 1–18, [Online]. Available: <https://www.aare.edu.au/data/publications/1999/mil99660.pdf>
- [59] M. N. Abdul, "The importance of teachers' interpersonal communication skills in enhancing the quality of teaching and learning," *World Applied Sciences Journal*, vol. 35, no. 6, pp. 924–929, 2017.
- [60] B. Brooks, "The power of active listening," *American Salesman*, vol. 55, no. 12, pp. 28–31, 2010.
- [61] E. Nemtchinova, *Teaching listening*. Alexandria, VA: TESOL International Association, 2020. [Online]. Available: <https://essentialsolanguageteaching.net/wp-content/uploads/2018/08/teaching-listening.pdf>
- [62] K. Kayıkcı, "The effect of classroom management skills of elementary school teachers on undesirable discipline behaviour of students," *Procedia - Social and Behavioral Sciences*, vol. 1, no. 1, pp. 1215–1225, 2009, doi: 10.1016/j.sbspro.2009.01.218.
- [63] M. Kaya and A. Selvitopu, "A meta-analysis of the effects of some factors on teachers' classroom management skills," *International Journal of Contemporary Educational Research*, vol. 6, no. 2, pp. 409–425, Oct. 2022, doi: 10.33200/ijcer.621313.
- [64] A. Kuloğlu and V. Karabekmez, "The relationship between 21st-century teacher skills and critical thinking skills of classroom teacher," *International Journal of Psychology and Educational Studies*, vol. 9, no. 1, pp. 91–101, Mar. 2022, doi: 10.52380/ijpes.2022.9.1.551.
- [65] A. Kanmaz, "Middle school teachers' critical thinking skills and awareness towards teaching critical thinking skills," *International Online Journal of Education and Teaching (IOJET)*, vol. 9, no. 4, pp. 1648–1671, 2022.
- [66] N. Larraz, S. Vázquez, and M. Liesa, "Transversal skills development through cooperative learning. training teachers for the future," *On the Horizon*, vol. 25, no. 2, pp. 85–95, May 2017, doi: 10.1108/OTH-02-2016-0004.
- [67] H. Susilo, A. K. Sudrajat, and F. Rohman, "The importance of developing creativity and communication skills for teacher: prospective teacher students perspective," in *AIP Conference Proceedings*, 2021, p. 30059, doi: 10.1063/5.0043157.
- [68] M. Benedek et al., "Assessment of creativity evaluation skills: a psychometric investigation in prospective teachers," *Thinking Skills and Creativity*, vol. 21, pp. 75–84, Sep. 2016, doi: 10.1016/j.tsc.2016.05.007.
- [69] L. Mcfarland, R. Saunders, and S. Allen, "Learning and teaching positive guidance skills: lessons from early childhood practicum students," *Journal of Early Childhood Teacher Education*, vol. 29, no. 3, pp. 204–221, 2008, doi: 10.1080/10901020802275294.
- [70] E. de Corte, "Learning design: creating powerful learning environments for self-regulation skills," *Voprosy Obrazovaniya/Educational Studies Moscow*, vol. 2019, no. 4, pp. 30–46, Dec. 2019, doi: 10.17323/1814-9545-2019-4-30-46.
- [71] D. Johnson, "The role of teachers in motivating students to learn," *BU Journal of Graduate Studies in Education*, vol. 9, no. 1, pp. 46–49, 2017.
- [72] J. Reinhardt, *Perspectives on effective teaching and the cooperative classroom. analysis and action series*. West Haven, CT: NEA Professional Library, 1984.
- [73] M. O. Omuna, P. O. Onchera, and C. K. Kimutai, "Availability and use of instructional resources for teaching and learning of english reading skills in secondary schools in Teso north sub county, Kenya," *Educational Research*, vol. 7, no. 1, pp. 10–15, 2016, doi: 10.14303/er.2016.005.
- [74] R. Petani and N. Krajinović, "Dimensions of interpersonal teachers' skills in school environment," in *EDULEARN19 Proceedings*, 2019, pp. 1126–1136, doi: 10.21125/edulearn.2019.0351.
- [75] T. Seidel, R. Rimmele, and M. Prenzel, "Clarity and coherence of lesson goals as a scaffold for student learning," *Learning and Instruction*, vol. 15, no. 6, pp. 539–556, Dec. 2005, doi: 10.1016/j.learninstruc.2005.08.004.
- [76] K. Koutrouba, "Classroom management and teacher effectiveness," *Oxford Research Encyclopedia of Education*. G. W. Noblit, Ed., Oxford: Oxford University Press, May 2020, pp. 1–20, doi: 10.1093/acrefore/9780190264093.013.692.
- [77] E. Rafeedali, "Teaching skills for effective teaching and learning," Manuu-College of Teacher Education Bhopal. Accessed: Jun. 05, 2025. [Online]. Available: <https://manuu.edu.in/sites/default/files/202304/Teaching%20Skills%20for%20Effective%20Teaching%20%26%20Learning.pdf>.

BIOGRAPHIES OF AUTHORS

Filippos Evangelou    is an assistant professor of Teaching Methodology in the Department of Primary Education at the University of Ioannina (Greece). His research focus is on the fields of teaching methods and techniques in primary schools, teaching tools and their impact on learning in primary schools, as well as teaching practice for teacher candidates. He can be contacted at email: filipevang@uoi.gr.



Konstantina Giannopoulou    is a Primary School Teacher and associate teacher Primary School Teacher for Teacher Practice in the Department of Primary Education at the University of Ioannina (Greece). She holds three master's degree in Educational Sciences. Her academic interests focus on teaching methodology, teaching tools and their impact on learning in primary schools. She can be contacted at email: giannopkons@gmail.com.