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## **Designing and Evaluating Educational Scenarios as a Tool for Strengthening Teachers' Skills**

***Dimitrios Kanaros***

*Teacher of Varvakeio Model High School & ICT Trainer, Greece,  
<https://orcid.org/0009-0000-9996-2856>*

**\*Corresponding author:** *kanarosdi@uoa.gr*

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**Abstract:** In the contemporary educational context, the systematic design and evaluation of educational scenarios constitute critical factors for teaching quality and the professional empowerment of teachers. Despite the extensive international literature on instructional design, a research gap remains regarding how educational scenarios function as mechanisms for teachers' professional development and the qualitative improvement of educational practice. This article aims to systematically investigate the role of educational scenario design and evaluation in enhancing the learning process and strengthening teachers' professional skills. The study adopts a qualitative systematic literature review of Greek and international sources. The search was conducted in the databases Google Scholar, Scopus, and ERIC, as well as in Greek academic repositories and journals. Clear inclusion criteria were applied, including the publication period (2000–2025), peer-reviewed sources, and relevance to instructional design and educational scenario evaluation. From an initial pool of 585 records, 478 remained after duplicate removal. Following title/abstract screening and full-text eligibility assessment, 52 peer-reviewed studies published between 2000 and 2025 were included in the qualitative synthesis. The findings of the review indicate that educational scenarios enhance students' active engagement, bridge the gap between theory and pedagogical practice, support flexible and inclusive learning environments, and reinforce the teacher's role as an



instructional designer. Moreover, the evaluation of educational scenarios emerges as a reflective process that promotes instructional improvement, collaboration, and teachers' professional self-efficacy. Based on these findings, the study highlights the need for systematic professional development of teachers in the design and evaluation of educational scenarios, their integration into processes of educational work evaluation, and their utilisation as means of disseminating good practices. Such an approach can foster a culture of collaboration, reflection, and continuous qualitative improvement in educational practice.

**Keywords:** Educational scenario, evaluation, planning, teachers' skills, teaching.

## Introduction

This paper discusses the basic elements that govern the design, configuration, and evaluation of an educational scenario, while highlighting their importance for the effective implementation of the teaching process. Its purpose is, on the one hand, to encourage teachers to create and utilise teaching scenarios in their daily practice and, on the other hand, to highlight the contribution of evaluation to their pedagogical effectiveness. The role of new technologies is particularly important, as they enhance interactive learning (Zhao, Cao, & Liao, 2022; Molenda, 2003) and make their integration into educational planning more necessary than ever.

The term "learning design" is often used to describe the result of the teacher's educational preparation, while the terms "lesson plan" and "teaching intervention" are equally common. The design of an educational scenario requires assessing the needs of the course and the students, defining the learning objectives, identifying and describing teaching activities, and evaluating both learning outcomes and the teaching experience (Hamdoun, 2023).

The educational scenario is an analytically structured teaching approach that includes organised activities with specific teaching objectives, integrated into a specific time frame and implementable based on the existing material and technical infrastructure and the teaching methods applied (Iordanidou & Papaioannou, 2014; Villiot-Leclercq, 2007). Its design is based on realistic school conditions (Villiot-Leclercq, 2007) and is applied within the course context (Koper, 2005; Pernin & Lejeune, 2004).

At the same time, the relevant literature describes it in various terms, such as "teaching scenario" (Hummel et al., 2004), "learning scenario" (Olivier & Tattersall, 2005) or "instructional design" (Reigeluth, 1983), demonstrating that it is a modern pedagogical approach that enhances the role of the teacher, facilitates the teaching process, and strengthens the interaction between all those involved (Di Pietro, 1987; Errington, 2011). Furthermore, educational scenarios are designed to bridge complex theoretical concepts with real educational environments (Correia et al., 2021).



Scenario-based learning enhances student engagement by offering students the opportunity to apply theoretical knowledge in practical, realistic contexts (Mamakli et al., 2023; Nguyen et al., 2023). In the context of online education, there is a need for innovative approaches to scenario design in order to ensure learning effectiveness and support student heterogeneity (Dixson, 2010; Farrell & Brunton, 2020). Furthermore, such a design can help address challenges such as the absence of face-to-face interaction, lack of motivation, and feelings of isolation (Lowe, 2023).

### **Research Problem**

Despite the abundance of research on instructional design and the use of teaching scenarios in the learning process, it is observed that how they function as mechanisms for teachers' professional empowerment and for improving the quality of educational practice have not been sufficiently analysed. Most studies emphasise either learning effectiveness or pedagogical value, without adequately highlighting sound design and its role in the organisation of teaching and, by extension, in the effectiveness of the educational process.

At the same time, the evaluation of educational work, grounded in instructional design and the effective evaluation of teaching scenarios, has not been sufficiently examined in the international literature. For this reason, the research problem is identified in the need to analyse, interpret, and synthesise theoretical and empirical approaches that highlight the design and evaluation of scenarios as key elements of professional empowerment and as means of promoting a culture of collaboration, feedback, and qualitative improvement of educational practice. While writing the relevance of the research topic, it is important to answer the following questions:

### **Research Focus**

This article investigates the role of designing and evaluating educational scenarios as tools for improving the quality of teaching and strengthening teachers' professional skills. Specifically, it seeks to systematically examine and synthesise international and Greek literature addressing: (a) the role and design of educational scenarios, (b) their contribution to the learning process and to the creation of inclusive and flexible learning environments, and (c) the importance of their evaluation as a process of reflection, feedback, and teachers' professional development.

Particular emphasis is placed on linking educational scenarios to contemporary educational demands, such as integrating digital technologies, supporting differentiated and inclusive instruction, and evaluating educational work. Through this literature review, the article aims to highlight the role of educational scenarios as instructional tools that enhance both the learning process and the quality of teaching practice.

### **Research Aim and Research Questions**

The purpose of this article is the systematic examination of Greek and international literature on the design and evaluation of educational scenarios. The study aims to highlight the theoretical



approaches, pedagogical principles, and practical applications that substantiate the contribution of educational scenarios to both the learning process and teachers' professional development. Within this framework, the present study seeks to address the following research questions:

- In what ways does the design of educational scenarios contribute to the improvement of the learning process and to the creation of inclusive and flexible learning environments?
- How are the systematic design and evaluation of educational scenarios linked to contemporary demands of educational practice, such as the integration of digital technologies and the evaluation of educational work?
- Which theoretical and pedagogical approaches regarding the design of educational scenarios are highlighted in the international literature?
- What gaps, challenges, and future research directions emerge from the literature for further exploration?

## **Literature Review**

### **The teaching scenario in education**

The integration of educational scenarios into the learning process contributes to the development of an organised, inclusive, and effective teaching framework that substantially enhances students' knowledge, skills, and abilities. Their contribution is particularly evident in the cultivation of basic social skills, such as the analysis, synthesis, and evaluation of information (Deniş Çeliker, 2020), thereby promoting the connection between learning and professional contexts (The Ohio State University, 2021). Through scenarios that emphasise experiential learning and reflection (Martínez-Argüelles et al., 2022), students are encouraged to develop critical thinking, make decisions, and solve problems, which encourages their active participation and engagement in the learning process (Falkner & Stålbrandt, 2024).

Educational scenarios provide a framework for applying theoretical knowledge (Errington, 2011) and promote accessibility, participation, and understanding for all students, grounded in principles of flexibility and inclusion (Damasevicius & Sidekerskiene, 2024). Their design provides immediate feedback, which is crucial for developing metacognitive skills (Mamakli et al., 2023). In addition, the possibility of iterative feedback allows teachers to reflect on their pedagogical choices and adapt their teaching strategies, bridging the gap between theory and practice (The Ohio State University, 2021). Similar benefits have been highlighted in the context of online education, where scenarios have been shown to increase student motivation and improve understanding of complex concepts (Nguyen et al., 2023).

The use of new technologies in the design of educational scenarios facilitates the implementation of various forms of student engagement, offering options that enhance their interest and strengthen their willingness to learn (Taylor & Yuknis, 2023). This is crucial in online education,



where active participation is often difficult (Bray et al., 2024). Technology enables multiple forms of interaction and representation, which can be adapted to students' preferences, especially in asynchronous learning (Bray et al., 2024; Bruntha et al., 2024; Salas-Rueda et al., 2022). In this way, educators can incorporate a variety of engagement strategies, such as interactive and collaborative activities (Boothe et al., 2018), which increase interest in the educational material and enhance students' self-efficacy in the practical application of their knowledge (Damasevicius & Sidekerskiene, 2024).

The use of multiple forms of representation in the design of educational scenarios—such as videos, podcasts, interactive simulations, and other digital applications—allows teaching to be adapted to different needs and learning preferences (Rogers & Gronseth, 2021; Selwyn, 2023; Taylor & Yuknis, 2023). This ensures that all students have access to educational material and can understand it effectively (Rao & Meo, 2016). At the same time, integrating alternative means of action and expression provides students with multiple ways to present their knowledge and skills, particularly enhancing their active participation in the online educational experience (Rao et al., 2014).

### **Designing a teaching scenario**

Designing a teaching scenario requires considering key parameters that determine its successful implementation. These include the current curriculum, the specific characteristics and dynamics of the student group (knowledge, attitudes, behaviours), the teaching approaches used, the need for a holistic, inclusive, and interdisciplinary approach to knowledge, adaptation to contemporary social and educational realities, the pedagogical use of new technologies, and cooperation among members of the educational community. Creating a scenario requires pedagogical and teaching knowledge, while its effective implementation requires organisational skills, classroom management, and reflection, with the aim of continuous improvement and adaptation (Fesakis & Konstantopoulou, 2022). The main purpose is to use it in teaching practice and to enable its dissemination and reuse by other educators (Laurillard et al., 2018). As has been pointed out, learning scenarios are a standardised way of documenting educational practice, to facilitate the dissemination and utilisation of 'good practices' (Agostinho et al., 2009).

The philosophy of instructional design, through scenario development, is based on the view that teaching is not limited to the mechanistic transmission of pre-formed knowledge (Mor et al., 2013). Instead, it is a complex and creative process that goes beyond simple problem solving, promoting creativity and innovation (Mio et al., 2019). Instructional design provides a framework to create inclusive learning conditions, emphasising the use of multiple means of engagement, representation, and expression (Espada-Chavarria et al., 2023). These elements contribute to the creation of flexible learning environments that provide students with a variety of opportunities to access educational material, engage in activities, and present their knowledge (Garrad & Nolan, 2023).



To address the contemporary challenges of the educational process, teachers who design scenarios are called upon to apply teaching approaches that are contemporary, inclusive, and focused on students' experiences and life experiences (Adams et al., 2023). Treating students as "experts" based on their personal experiences, both in everyday life and in educational practice (Lowe, 2023), enhances their participation and makes learning more meaningful. In this way, students actively participate in organised and targeted activities that reflect real-world challenges, enhancing their critical thinking and ability to respond to complex situations (Falkner & Stålbrandt, 2024).

In the context of online education, the design of an educational scenario requires special attention and the use of appropriate, carefully selected digital tools (Zunic & Holenko Dlab, 2020) to address critical challenges such as technological infrastructure, accessibility, and the provision of immediate feedback in asynchronous learning environments (Clark & Mayer, 2012). Online learning also significantly changes the role of the teacher, necessitating detailed planning to ensure adequate support and guidance for students, without the immediacy of face-to-face interaction (The Ohio State University, 2021). At the same time, the proper and effective integration of digital media and technological tools into a scenario requires time, systematic teacher training, and support resources. It is often hampered by challenges, including the complexity of the educational context, inadequate technological infrastructure, and financial constraints (Kirsch & Luo, 2023). However, the appropriate use of new technologies, combined with artificial intelligence capabilities, can promote flexibility, inclusion, and effectiveness in teaching (Vasquez et al., 2024).

The international literature highlights a variety of theoretical and pedagogical approaches to designing educational scenarios, reflecting the evolution of instructional design from linear planning models to more flexible, learner-centred, and technology-enhanced frameworks. As shown in Table 1, early instructional design theories emphasise systematic organisation and goal alignment. At the same time, more recent approaches focus on authenticity, reusability, inclusivity, and on teachers' active role as designers of learning. This synthesis demonstrates that educational scenario design is not a static process but a dynamic pedagogical practice that adapts to contemporary educational demands, including digital transformation and teachers' professional development.

**Table 1**

*Instructional design theories emphasise systematic organisation*

Author(s)	Year	Key concepts	Research focus
Reigeluth	1983	Instructional design, systematic planning	Foundations of instructional design models
Di Pietro	1987	Scenario-based learning, strategic interaction	Learning through authentic scenarios
Pernin & Lejeune	2004	Reusability of learning scenarios	Standardization and transferability

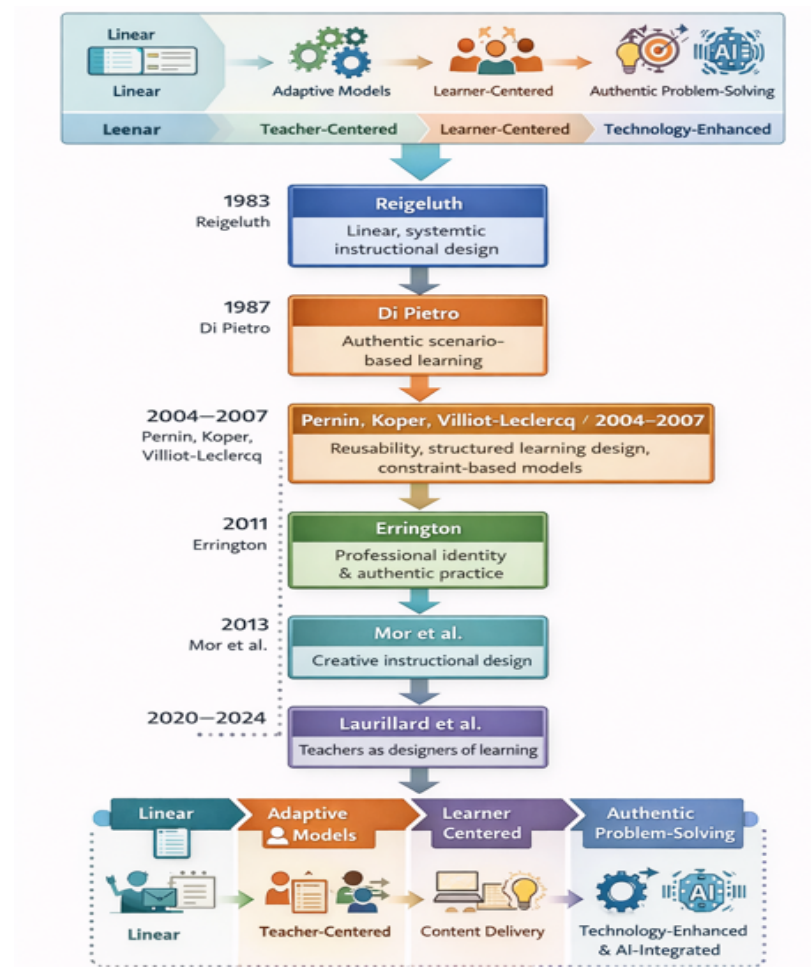


<b>Koper</b>	2005	Learning design, digital learning environments	Structured design of networked learning
<b>Villiot-Leclercq</b>	2007	Constraint-based scenario design	Design under realistic school conditions
<b>Errington</b>	2011	Professional identity development	Bridging theory and pedagogical practice
<b>Mor et al.</b>	2013	Creative instructional design	Innovation and design-based learning
<b>Komis</b>	2015	Scenario phases, ICT integration	Educational practice and structured design
<b>Laurillard et al.</b>	2018	Teachers as designers of learning	Professional development through design
<b>Khaldi et al.</b>	2021	Online educational scenario design	Distance and online education contexts

The evolution of educational scenario design approaches from early systematic instructional models to contemporary inclusive and technology-enhanced frameworks is summarised in Figure 1.

**Figure 1**

*Evolution of educational scenario design approaches (1983-2024)*





Despite the complexity of the learning process, which does not allow for the implementation of strictly defined steps, the structure of an educational scenario remains stable. It is organised into distinct phases (Komis, 2015). Specifically, these phases include:

1. Determination of the teaching subject, the class, and the cognitive areas involved.
2. Recording of students' prior knowledge, including correct or incorrect perceptions, representations, and possible cognitive difficulties.
3. Formulating teaching objectives, both in terms of the cognitive subject and in relation to the use of ICT and the learning process.
4. Selecting and developing teaching materials, in conjunction with determining the required material and technical infrastructure.
5. Organising teaching through appropriate activities that utilise teaching strategies and the added value of ICT (e.g., worksheets, interactive applications).
6. Evaluation of students and the scenario, with the possibility of expansion and optimisation.
7. Comments and instructions for teachers, accompanied by bibliographical references.

Relevant research literature supports the view that the basic structural elements of an educational scenario are the teaching approach, content, objectives, means, and evaluation; elements that, although they constitute autonomous units, are interdependent and form the core of the design (Petropoulou, Kasimati & Retalis, 2015). Other approaches suggest following specific stages, such as setting objectives, selecting a topic and activities, developing, implementing, and evaluating the scenario (Khaldi et al., 2021).

Although different scholars propose distinct models for designing educational scenarios, significant convergence can be observed in their core stages. Table 2 presents a comparative overview of the design phases proposed by Komis (2015), Khaldi et al. (2021), and the official Curriculum for Physical Education. The comparison reveals a shared emphasis on contextual analysis, formulation of learning objectives, organisation of activities, and evaluation. At the same time, differences mainly concern the degree of emphasis placed on reflection, adaptability, and scalability. This comparison highlights the pedagogical flexibility of educational scenarios and supports their applicability across different educational contexts and subject areas.

**Table 2**

*Comparative overview of the design phases proposed*

Design stages	Komis (2015)	Khaldi et al. (2021)	Physical Education Curriculum
Definition of educational context	+	+	+
Analysis of learners' prior knowledge	+	+	+
Formulation of learning objectives	+	+	+



Selection of content and resources	+	+	+
Organization of learning activities	+	+	+
Integration of digital technologies	+	+	+
Assessment and evaluation	+	+	+
Reflection and revision	+	-	+
Adaptability and scalability	-	+	+

### **Structure of the teaching scenario based on the new curriculum for physical education**

According to the new Curriculum for Physical Education in High School, the teaching scenario is organised into ten distinct units, each with specific characteristics and critical points that must be taken into account both during its creation and evaluation. Specifically:

#### 1) Teaching scenario identity

This section includes basic information, such as the creator's name, duration, title, grade/class, cognitive subjects, thematic areas, and thematic units. The title should be short, concise, and appealing to students, while the inclusion of multiple subjects enhances the scenario's interdisciplinary nature.

#### 2) Scenario rationale - Scientific/Cognitive content

This section identifies the problem or need that the scenario aims to address. Weaknesses, gaps, challenges, and opportunities in the current educational framework are identified and addressed through the scientific and cognitive field of Physical Education.

#### 3) Prerequisite knowledge and desired skills

The students' existing knowledge and skills, which are prerequisites for the successful implementation of the scenario, are documented.

#### 4) Purpose of the scenario and expected learning outcomes

The purpose is defined in relation to the teaching unit and the thematic areas of the Curriculum, seeking a holistic and inclusive approach. The learning outcomes are formulated clearly and precisely, in the form of short sentences with action verbs, and are linked to three axes: the cognitive subject, the use of new technologies, and the learning process.

#### 5) Organization of teaching and required material and technical infrastructure

The implementation space (e.g., gym, courtyard, classroom) is described, as well as the way students are grouped (individually, in small or large groups), the use of worksheets, and the



necessary material and technical infrastructure (e.g., balls, cones, ropes, computers, projectors). At the same time, the digital applications or platforms to be integrated are mentioned.

#### 6) Teaching approach - Assessment

Modern teaching methods, such as group work, inquiry-based and experiential learning, are proposed as basic methodological approaches, as they respond to the needs of students, enhance cooperation, and promote critical thinking, creativity, and self-regulation. Assessment is a fundamental element of the scenario and includes initial, formative, and final evaluation. Final assessment is essential, as it provides feedback to students on the level of knowledge they have acquired and the skills they have developed (Winstead, 2025).

#### 7) Detailed description of the teaching process

The activities for each teaching hour are presented in detail. In the first activities, it is advisable to explore the students' initial perceptions of the subject. The description of the activities should be clear and understandable, clarify the students' actions (e.g., use of worksheets, use of materials, group work), and be linked to the learning objectives and the material and technical infrastructure.

#### 8) Possible extensions - Scenario adaptations

The possibilities for modifying and adapting the scenario for use at different levels, in different classes, or in collaboration with other disciplines are recorded.

#### 9) Bibliography - Webography

The sources used to develop the scenario are listed, as well as additional bibliography useful for further study by the teacher.

#### 10) Worksheets

### ***Evaluation of a teaching scenario***

Evaluation constitutes an integral component of educational scenario design and implementation, functioning not only as a mechanism for assessing learning outcomes but also as a process that supports reflection and continuous improvement. As summarised in Table 3, educational scenario evaluation can be distinguished into diagnostic, formative, and summative forms, each serving distinct pedagogical purposes and utilising different tools and methods. The combined use of these evaluation types enables teachers to monitor learning progress, adapt instructional strategies, and assess the scenario's overall effectiveness, thereby reinforcing both student learning and teachers' professional self-efficacy.



**Table 3**

*Educational scenario*

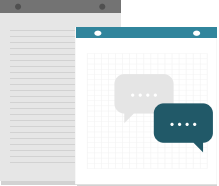
Type of evaluation	Purpose	Key characteristics	Tools	Indicative examples
<b>Diagnostic evaluation</b>	Identification of prior knowledge	Conducted at the initial stage; informs scenario adaptation	Questionnaires, discussion, short tasks	Identification of misconceptions
<b>Formative evaluation</b>	Support of the learning process	Continuous feedback during implementation	Observation, Mentimeter, Socrative	Adjustment of teaching activities
<b>Summative evaluation</b>	Assessment of learning outcomes	Conducted after completion of the scenario	Projects, presentations, written assignments	Overall evaluation and reflection

Evaluation is the systematic process of determining the value and significance of an object based on predetermined criteria and standards. Through this process, the effectiveness of a project, organisation, program, plan, or any other intervention or initiative can be assessed. This process facilitates decision-making, allows evaluation of alternative solutions, and helps determine the extent to which the objectives and results of completed actions have been achieved (Reeve & Peerbhoy, 2007). The primary purpose of evaluation, beyond recording the effectiveness of past or current interventions, is to encourage reflection and support the identification of necessary future changes.

Evaluation is applied to a wide range of human activities, including education, the arts, justice, non-profit organisations, public administration, health and other social institutions. It is a long-term process that can be carried out both during and, more importantly, after the completion of an activity in order to assess its results (Potter, 2006).

According to the United Nations Evaluation Group (2016) Report on "Evaluation Standards and Norms," evaluation is defined as a process carried out systematically and impartially that concerns projects, programs, strategies, policies, thematic areas, or institutional performance. In this context, the degree of achievement of both expected and unexpected results is examined through the analysis of processes, influencing factors, and causal relationships. Evaluation is based on criteria such as relevance, effectiveness, efficiency, impact, and sustainability, and must provide valid and useful information based on reliable data. This information must be used in a timely manner in decision-making and in the formulation of policies, services, and organisational strategies.

The evaluation's objectives focus primarily on strengthening accountability and learning, and on understanding the causes and extent of the intended or unintended results. At the same time, the aim is to assess the evaluation's impact and contribution to the planning, budgeting, implementing actions, and reporting processes. At a broader level, evaluation can contribute to the



formulation of evidence-based policies, the support of development plans, and the assurance of organisational consistency (Diamantis & Bikos, 2022).

An integral part of completing a teaching scenario is the evaluation process, which informs the teacher about the quality, nature, and objectives of their teaching intervention. The evaluation, which follows the design and implementation of a scenario, serves as a necessary feedback process (Carroll & Rosson, 1992). The final product can take various forms, such as written assignments, presentations, creative projects, concept maps, multimedia applications, and exhibitions. However, the final version of a scenario should focus primarily on the learning process, exploratory investigation, and reflection, rather than placing excessive emphasis on the production of material (Koutsogiannis & Pavlidou, 2012).

At the same time, it is necessary to determine the teacher/creator's understanding of the philosophy and logic of assessment. In particular, the assessment process can focus on various aspects (Carroll, 2000):

- the organisation and structure of the individual elements of the teaching scenario,
- the degree to which the predetermined objectives were achieved,
- the errors, weaknesses, and omissions that arose during implementation and were not foreseen in the initial design,
- the positive elements and innovations that differ from traditional teaching and attracted the interest of students,
- the inspiration offered by the scenario, encouraging the creativity and imagination of both students and teachers,
- the cooperation and team spirit developed by the participants during implementation, including collaborative activities with physical or remote presence, in synchronous or asynchronous environments, using digital technologies,
- the material and technical infrastructure and accessibility,
- the consistency of all stages, especially teaching activities,
- the teacher's sense of self-efficacy after completing the scenario,
- adaptability and flexibility, so that the scenario is not presented as a static framework but is tailored to the specific characteristics and needs of the students,
- the possibility of future expansion and redesign, so that alternative options are provided that respond to different learning styles and encourage experimentation with new pedagogical practices.

The evaluation of a teaching scenario includes both assessing the teacher's work and evaluating the students involved, either as creators or as the final recipients of the teaching process. At the student level, evaluation is usually divided into three forms (Hargreaves, 2005):

a. Diagnostic assessment



This is carried out at the initial stage of planning to identify students' prior knowledge and skills, so that the teacher can adjust the level of difficulty and the types of activities accordingly. In this context, both existing cognitive achievements and skills such as critical thinking, creativity, and collaboration are assessed. A diagnostic assessment can be conducted through questions, videos, or other sources. At the same time, it enables the teacher to identify misconceptions and intervene correctly, while also assessing the skills required for the successful implementation of the activities in the scenario.

#### b. Formative assessment

This occurs during scenario implementation and enables early detection and resolution of potential difficulties. It is applied continuously, using tools such as instant-response platforms (e.g., Socrative, Mentimeter), and provides data on students' understanding, participation, and engagement in teaching activities. Formative assessment checks knowledge assimilation, enhances participation, and contributes significantly to the development of communication skills and critical thinking.

#### c. Final assessment

This involves assessing the achievement of the scenario's objectives, the implementation process, and the effective use of teaching tools. After completing the scenario, the teacher records observations about the learning process and the pedagogical use of digital media. For example, they note how students used the Internet, the degree of support it provided, and the changes they would adopt in future applications. The final evaluation highlights the strengths and weaknesses of the scenario, informing its revision and potential future use. In addition, through cooperative assessment, teachers and students jointly discuss and evaluate the positive and negative aspects of the experience, thus enhancing collective learning and feedback.

In addition to the assessment carried out by the teacher at the final stage of the process, after the worksheet has been handed in, students are given the opportunity to assess both their own team and the other teams. In addition, the teacher encourages self-assessment, in which students evaluate their individual contribution and overall effort. This process can be implemented through specially designed self-assessment sheets in printed or digital form, using online response systems. At the same time, evaluating the teachers themselves becomes particularly important, especially in cases of co-teaching. In this context, peer assessment can be applied, in which teachers mutually evaluate their effectiveness in the learning process. Equally important is the process of teacher self-assessment, which concerns their ability to perform multiple roles in implementing the teaching scenario: as coordinator, observer, organiser, facilitator, supporter, and advisor. In this context, the teacher must create the conditions for the autonomous work of student groups and intervene only when requested or deemed necessary. These interventions should be corrective rather than formative in nature to reinforce students' initiative and autonomy (Diamantis & Bikos, 2022).



To be considered effective, a teaching scenario must have clearly defined teaching objectives, be based on recognised pedagogical theories and document its connection to the curriculum. At the same time, it must facilitate a cross-curricular and interdisciplinary approach, reinforce inquiry-based learning, group work, and active student participation. The use of digital media (hypermedia, online services, open-access educational software) is considered necessary, and where possible, the scenario should provide opportunities for multiple simultaneous representations. Equally important is the prospect of scalability, either by adding new activities in the same subject area or by applying it to different subjects.

Teaching that uses digital media through scenarios should make the lesson engaging and inspire students to discover knowledge independently, cultivate "learning how to learn" skills, reflect, and seek alternative approaches when they disagree or identify more appropriate options. Such a pedagogical process ensures substantial learning benefits, as students not only remember the content taught but also use it as a basis for further independent learning. One of the central goals of education, after all, is to cultivate the student's ability to take responsibility for their own learning path (Honabach, 2008).

In addition, the teaching scenario must be simple and clear, both in terms of the roles of the participants and the allocation of time for each activity. It should clarify the interactive relationships between students and teachers, capitalise on students' natural tendency to explore, and cultivate not only skills but also attitudes towards life (Mikropoulos & Bellou, 2010). At the same time, it should encourage collaboration, either within the classroom or through virtual classrooms that connect schools across the national and international levels.

The evaluation of digital teaching scenarios, according to the Institute of Educational Policy, in the context of the action "Development of a methodology for digital teaching scenarios for the cognitive subjects of Primary and Secondary General and Vocational Education," is based on twenty criteria. The main areas of evaluation include design and documentation, the learning process, and the issues raised. In general, the criteria concern:

- A. the tools, materials, and technical infrastructure,
- B. the objectives, i.e. the formulation and achievement of goals,
- C. the implementation process, which must be consistent with modern pedagogical principles, make use of digital media, be adapted to the level of the students, and be comprehensive and clearly structured,
- D. the adaptability and scalability of the scenario.



## Materials and Methods

This study employed a qualitative, bibliographic research methodology designed to explore the impact of instructional scenario design on teaching effectiveness and teachers' professional skill development. The research design was grounded in systematic qualitative content analysis, enabling the identification of recurring themes, conceptual patterns, and theoretical insights within the selected literature.

A rigorous and systematic search strategy was implemented across major academic and educational databases, including Google Scholar, Scopus, and ERIC (Education Resources Information Centre). These databases provided access to contemporary interdisciplinary studies encompassing educational theory, instructional design, psychology, and digital education. Additionally, national sources were consulted, including the National Documentation Centre of Greece (EKT), institutional repositories of Greek universities, and open-access Greek academic journals, such as the Athens Journal of Education, the Journal of Contemporary Education Theory & Research, Lifelong Learning, and Research and Technological Development. These sources ensured the inclusion of literature reflecting the specific characteristics of the Greek educational context.

The data collection process utilised both English and Greek keywords and applied Boolean operators to refine search results. English search terms included combinations such as "instructional design," "educational scenario," "professional development," and "evaluation of teaching scenarios." Greek keywords such as «διδακτικός σχεδιασμός» (instructional design), «αξιολόγηση σεναρίων μαθήματος» (lesson scenario evaluation), «ενδυνάμωση επαγγελματικών δεξιοτήτων» (professional skill enhancement), and «σχέδιο μαθήματος» (lesson plan) were used to ensure the bilingual nature and comprehensiveness of the literature review.

To ensure academic rigour and methodological validity, explicit inclusion and exclusion criteria were applied. Inclusion criteria encompassed peer-reviewed journal articles, empirical studies, theoretical papers, and policy reports published between 2000 and 2025. Only studies focusing on instructional design, the evaluation of teaching scenarios, teacher professional development, and learning design were considered. Priority was given to studies offering comparative analyses or Greek-specific insights. Exclusion criteria included non-peer-reviewed publications, sources without full-text availability, and works unrelated to instructional design or teacher evaluation.

The review period (2000–2025) was deliberately selected, as it encompasses the period during which instructional design, educational scenarios, and their evaluation have emerged and evolved as a distinct and dynamic field of research. The adoption of this broad temporal framework enabled examination of both foundational theoretical approaches and more recent pedagogical and technological developments, ensuring the analysis's longitudinal and conceptual comprehensiveness. The source selection process followed the main stages outlined in the PRISMA guidelines for systematic reviews.

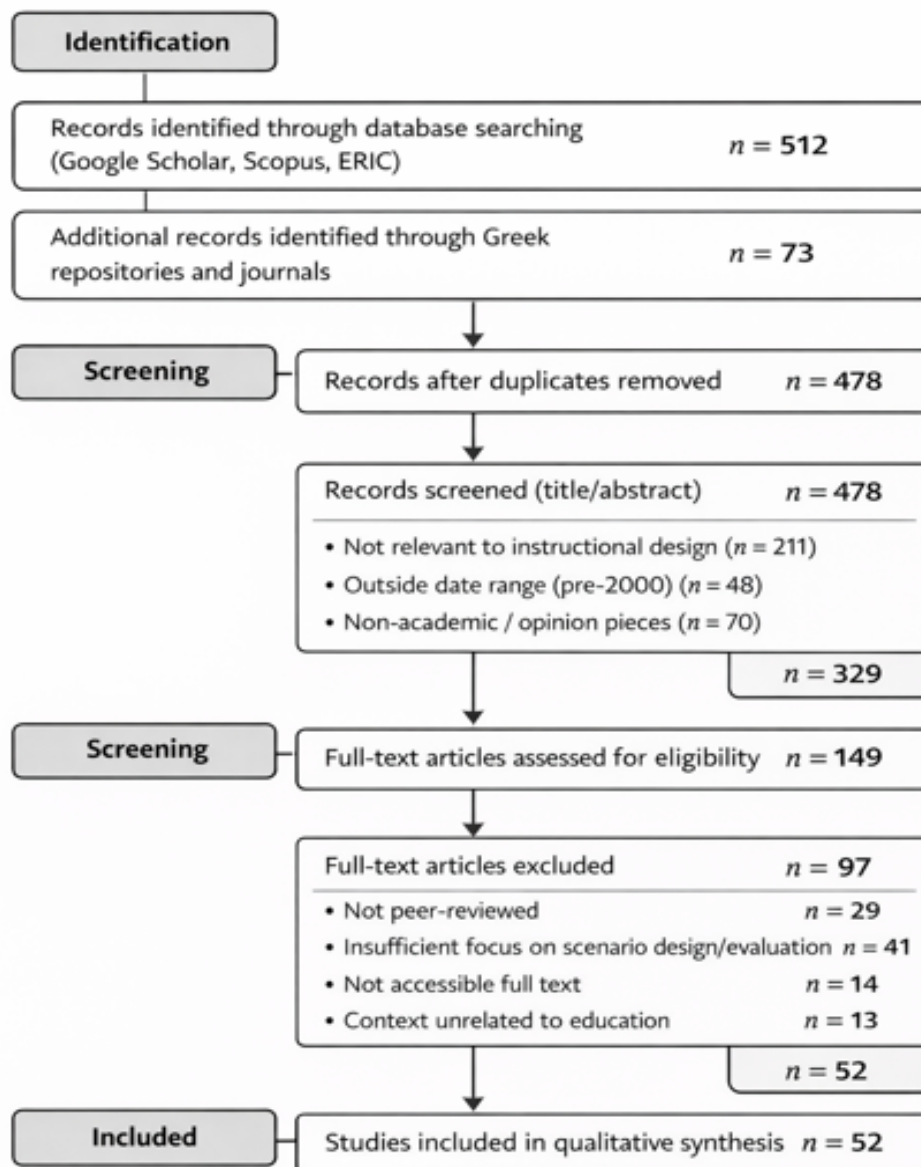


While this methodological approach provides a comprehensive and comparative framework for analysis, certain limitations must be acknowledged. The exclusive reliance on secondary data implies that no primary empirical research—such as interviews, surveys, or classroom observations—was conducted. Moreover, given the dynamic and evolving nature of educational reforms and technological developments in contemporary education, some recent advancements in instructional design and teacher evaluation practices may not yet be fully captured in the existing literature.

The study selection process followed the PRISMA 2020 guidelines for systematic reviews. The identification, screening, eligibility, and inclusion phases are presented in Figure 2.

**Figure 2**

*PRISMA flow diagram of the literature selection process (2000-2025)*





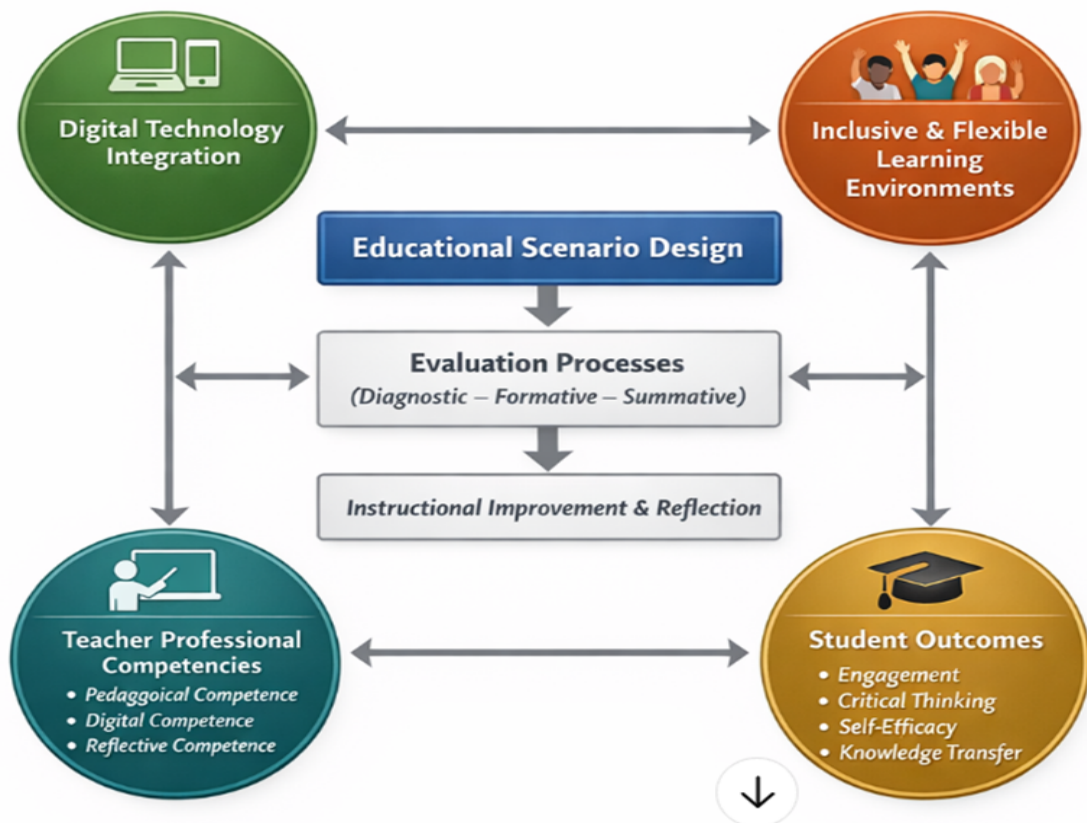
## Discussion

The present systematic literature review examined the role of educational scenario design and evaluation in improving the learning process and strengthening teachers' professional development. Structuring the discussion around the research questions enables a comprehensive synthesis of the findings, highlighting both key areas of convergence and methodological and conceptual variations within the international and Greek literature.

Based on the findings of the literature review, a conceptual framework (Figure 3) is proposed to synthesise the interrelationships among educational scenario design, evaluation processes, teacher professional development, digital technology integration, and student learning outcomes.

### Figure 3

Conceptual framework illustrating the interrelationship between educational scenario design, evaluation processes, digital technology integration, teacher professional development, and student learning outcomes.





## **Contribution of educational scenario design to learning and students' active engagement**

Regarding the first research question, the review's findings confirm that systematic and structured approaches to educational scenario design contribute substantially to more effective teaching and to the development of broader social and cognitive skills. Students' active engagement in carefully designed and goal-oriented learning scenarios enhances critical thinking, the application of theoretical knowledge in authentic contexts, and the development of self-efficacy (Deniş Çeliker, 2020; Falkner & Stålbrandt, 2024; Mio et al., 2019). At the same time, the clear organisation of learning activities and the provision of detailed guidance support deeper understanding of the subject matter, particularly in asynchronous learning environments (Darabi et al., 2011).

## **Inclusion, flexibility, and differentiated learning environments**

The integration of inclusive principles into educational scenario design emerges as a central finding of the review. Scenarios grounded in the principles of Universal Design for Learning promote the active participation of all learners by accounting for individual differences, learning preferences, and diverse educational needs (Garrad & Nolan, 2023; Rao et al., 2014). The use of multiple means of representation, action, and expression enhances accessibility and reduces barriers to learning, especially in digital and online learning contexts (Clark & Mayer, 2012; Nguyen et al., 2023). However, the literature also emphasises that inclusion is not an automatic outcome of using educational scenarios, but rather depends on pedagogically informed design choices and ongoing teacher reflection.

## **Educational scenarios, evaluation, and contemporary educational demands**

Furthermore, the review demonstrates that the design and evaluation of educational scenarios are closely linked to contemporary demands of educational practice, such as the integration of digital technologies, accountability in teaching, and continuous professional improvement. Evaluation is incorporated as a core component of the scenario and functions as a mechanism for feedback and reflection, enabling timely adaptation of instructional decisions (Clark & Mayer, 2012; The Ohio State University, 2021).

At the same time, educational scenarios emerge as tools for collaboration and professional learning among teachers. Through the sharing, feedback, and redesign of scenarios, communities of practice are strengthened, and the dissemination of effective pedagogical and learning practices is promoted (Baharuddin et al., 2024; Boothe et al., 2018). Despite these benefits, the literature identifies barriers related to increased workload, limited infrastructure, and inequalities in teachers' digital competence, which may hinder effective implementation.

## **Limitations and contradictions in the literature**

In relation to the subsequent research questions, the review indicates that, despite broad agreement on the pedagogical value of educational scenarios, there are differences in how their



effectiveness is assessed. Some studies report clear positive effects on student engagement and learning outcomes (Deniş Çeliker, 2020; Nguyen et al., 2023), while others emphasise that outcomes depend largely on the educational context, teachers' instructional experience, and the level of institutional support available (Mio et al., 2019; The Ohio State University, 2021). A major limitation of the existing literature concerns the lack of longitudinal and comparative studies, as well as the frequent reliance on qualitative or small-scale research designs. This fragmentation of empirical evidence limits the generalizability of findings, particularly regarding the long-term professional development of teachers.

Overall, the discussion highlights that educational scenarios, when systematically designed and evaluated, can function as catalysts for qualitative improvement in teaching, inclusion, and teachers' professional empowerment.

## **Conclusions and Implications**

The present literature review highlights the central role of the design and evaluation of educational scenarios as key pillars of contemporary educational practice. The analysis of international and Greek literature indicates that educational scenarios are not merely structured instructional tools; rather, they shape a dynamic educational framework that supports learning, enhances students' active engagement, and bridges the gap between theory and pedagogical practice. At the same time, their contributions to creating flexible and inclusive learning environments are emphasised, particularly when they integrate digital technologies and contemporary teaching methodologies.

One of the main conclusions of the study is that the systematic evaluation of educational scenarios is an integral component of their design, rather than a fragmented or final assessment. Evaluation functions as a mechanism of reflection and feedback, enabling teachers to re-examine their teaching practices, improve their lessons, and develop professional, pedagogical, and digital competences. For this reason, educational scenarios serve as significant tools for teachers' professional development and empowerment, as well as for fostering a culture of collaboration and the dissemination of good practices.

The implications of the review's findings are multifaceted. At the practical level, the need for systematic professional development of teachers in the design, implementation, and evaluation of educational scenarios is underscored, with particular emphasis on the pedagogical use of digital technologies and the principles of inclusive education. At the institutional level, educational scenarios may be used as tools to evaluate educational work and to strengthen formative assessment and professional support for teachers. Finally, at the research level, the need for further empirical studies is highlighted to investigate the long-term impact of the design and evaluation of educational scenarios on teaching quality and students' learning experiences, as well as their relationship to contemporary educational reforms and policies.



## **Suggestions for Future Research**

This article emphasises the importance of designing and evaluating educational scenarios in contemporary educational practice, while also highlighting the need for further research in areas that have not been sufficiently explored. Future research could focus on conducting empirical studies, both quantitative and qualitative, that systematically examine the impact of educational scenario design on teachers' professional development, accounting for different subject areas and educational levels.

Particular interest lies in studies that investigate the relationship between the evaluation of educational scenarios and the formative assessment of educational work, as well as the role of reflection in improving learning. In addition, future research could focus on developing and testing reliable evaluation tools and frameworks for educational scenarios to support both teachers' self-evaluation and collaborative evaluation within the school community.

At the same time, further investigation is deemed necessary into the integration of digital technologies and artificial intelligence tools in the design of educational scenarios, especially in relation to the creation of inclusive and differentiated learning environments. Finally, comparative and longitudinal studies are recommended to examine how different educational systems and policies approach the design and evaluation of educational scenarios, thereby contributing to the formulation of evidence-based recommendations to improve educational practice and teacher professional development.

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## **Conflict of Interest**

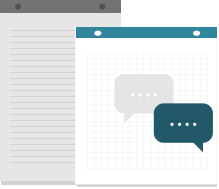
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## **References**

- Adams, S., Tesene, M., Gay, K., Brokos, M., McGuire, A., Rettler-Pagel, T., & Swindell, A. (2023). *Communities of practice in higher education: A playbook for centring equity, digital learning, and continuous improvement*. Every Learner Everywhere. <https://www.everylearnereverywhere.org/resources/communities-of-practice-in-higher-ed>
- Agostinho, S., Bennett, S., Lockyer, L., Thomas, L., Jones, J., & Harper, B. (2009). *An examination of learning design descriptions in a repository (Version 1)*. University of Wollongong. <https://hdl.handle.net/10779/uow.27691752.v1>



- Baharuddin, F. R., Amiruddin, A., Nurlaela, N., & Setialaksana, W. (2024). Teacher growth mindset and ICT integration in Indonesian classrooms: Insights from in-service and preservice teacher programs. *Quality Assurance in Education*, 32(2), 197-212. <https://doi.org/10.1108/QAE-08-2023-0136>
- Boothe, K. A., Lohmann, M. J., Donnell, K. A., & Dean Hall, D. (2018). Applying the principles of universal design for learning (UDL) in the college classroom. *The Journal of Special Education Apprenticeship*, 7(3). <https://doi.org/10.58729/2167-3454.1076>
- Bray, A., Devitt, A., Banks, J., Sanchez Fuentes, S., Sandoval, M., Riviou, K., Byrne, D., Flood, M., Reale, J., & Terrenzio, S. (2024). What next for Universal Design for Learning? A systematic literature review of technology in UDL implementations at second level. *British Journal of Educational Technology*, 55(1), 113-138. <https://doi.org/10.1111/bjet.13328>
- Bruntha, P., Subaithani, S., & Shabana, S. (2024). *Effectiveness of ICT tools in education*. In *Proceedings of the Perspective of ICT Tools in Education* (pp. 91-95). NGM College, Pollachi, India. <https://www.scribd.com/document/755169705/Effectiveness-of-i-Ct-Tools-in-Education>
- Carroll, J. M. (2000). Five reasons for scenario-based design. *Interacting with Computers*, 13(1), 43-60. [https://doi.org/10.1016/S0953-5438\(00\)00023-0](https://doi.org/10.1016/S0953-5438(00)00023-0)
- Carroll, J. M., & Rosson, M. B. (1992). Getting around the task-artifact cycle: How to make claims and design by scenario. *ACM Transactions on Information Systems*, 10(2), 181-212. <https://doi.org/10.1145/146802.146834>
- Clark, R. C. (2013). *Scenario-based e-learning: Evidence-based guidelines for online workforce learning*. Pfeiffer, An Imprint of Wiley.
- Correia, A.-P., Hickey, S., Lepicki, T., & Willis, A. (2021). Meeting online learners where they are: e-Learning during a time of pandemic. *eLearn*, 2021(8), 3481580.3470746. <https://doi.org/10.1145/3481580.3470746>
- Damasevicius, R., & Sidekerskienė, T. (2024). Virtual worlds for learning in metaverse: A narrative review. *Sustainability*, 16(5), 2032. <https://doi.org/10.3390/su16052032>
- Darabi, A., Arrastia, M. C., Nelson, D. W., Cornille, T., & Liang, X. (2011). Cognitive presence in asynchronous online learning: A comparison of four discussion strategies. *Journal of Computer Assisted Learning*, 27(3), 216-227. <https://doi.org/10.1111/j.1365-2729.2010.00392.x>
- Deniş Çeliker, H. (2020). The effects of scenario-based STEM project design process with pre-service science teachers: 21st-century skills and competencies, integrative STEM teaching intentions and STEM attitudes. *Journal of Educational Issues*, 6(2), 451. <https://doi.org/10.5296/jei.v6i2.17993>



- Di Pietro, R. J. (1987). *Strategic interaction: Learning languages through scenarios*. Oxford University Press.
- Diamantis, K., & Bikos, K. (2022). Evaluation of teaching scenarios. In *Teaching scenarios with the support of digital media*. Kallipos, Open Academic Publications. <http://repository.kallipos.gr/handle/11419/8769>
- Dixson, M. D. (2010). Creating effective student engagement in online courses: What do students find engaging?. *Journal of the Scholarship of Teaching and Learning*, 10(2), 1-13. <https://scholarworks.iu.edu/journals/index.php/josotl/article/view/1744>
- Errington, E. (2011). *As close as it gets: developing professional identity through the potential of scenario-based learning*. In N. Jackson (Ed.), *Learning to Be Professional Through a Higher Education* (pp. 1-15). UK: Surrey Centre for Excellence in Professional Training and Education. <https://researchonline.jcu.edu.au/15344/1/CHAPTER%2BC3.pdf>
- Espada-Chavarria, R., González-Montesino, R. H., López-Bastías, J. L., & Díaz-Vega, M. (2023). Universal Design for Learning and Instruction: Effective Strategies for Inclusive Higher Education. *Education Sciences*, 13(6), Article 620. <https://doi.org/10.3390/educsci13060620>
- Falkner, K., & Ståbrandt, E. E. (2023). Meanings of authentic learning scenarios: A study of the interplay between higher education and employability of higher education graduates. *International Journal of Teaching and Learning in Higher Education*, 35(2), 171-183. <https://www.isetl.org/ijtlhe/pdf/IJTLHE4373.pdf>
- Farrell, O., & Brunton, J. (2020). A balancing act: A window into online student engagement experiences. *International Journal of Educational Technology in Higher Education*, 17(1), Article 25. <https://doi.org/10.1186/s41239-020-00199-x>
- Fessakis, G., & Konstantopoulou, A. (2022). *Design of technologically enhanced educational scenarios for preschool education*. Kallipos. <https://doi.org/10.57713/KALLIPOS-31>
- Garrad, T.-A., & Nolan, H. (2023). Rethinking higher education unit design: Embedding universal design for learning in online studies. *Student Success*, 14(1), 1-8. <https://doi.org/10.5204/ssj.2300>
- Hamdoun, W. M. A. (2023). Constructive alignment approach: enhancing learning and teaching. *British Journal of Multidisciplinary and Advanced Studies*, 4(2), 162-170. <https://doi.org/10.37745/bjmas.2022.0173>
- Hargreaves, E. (2005). Assessment for learning? Thinking outside the (black) box. *Cambridge Journal of Education*, 35(2), 213-224. <https://doi.org/10.1080/03057640500146880>



- Honabach, D. R. (2008). Responding to "Educating lawyers": An heretical essay in support of abolishing teaching evaluations. *University of Toledo Law Review*, 39, Article 311. <https://ssrn.com/abstract=1255823>
- Hummel, H., Manderveld, J., Tattersall, C., & Koper, R. (2004). Educational modelling language and learning design: New opportunities for instructional reusability and personalised learning. *International Journal of Learning Technology*, 1(1), 111-126. <https://doi.org/10.1504/IJLT.2004.003685>
- Iordanidou, A., & Papaioannou, P. (2014). The teaching scenario in the language lesson. *Studies on the Greek Language*, 34, 140-149. [https://www.eshop.ins-auth.gr/images/companies/1/archive/MEG\\_PLIRI/MEG\\_34\\_156\\_165.pdf](https://www.eshop.ins-auth.gr/images/companies/1/archive/MEG_PLIRI/MEG_34_156_165.pdf)
- Khaldi Maha, Erradi Omar, Erradi Mohamed, & Khaldi Mohamed. (2021). Design of educational scenarios of activities in a learning situation for online teaching. *GSC Advanced Engineering and Technology*, 1(1), 049-064. <https://doi.org/10.30574/gscaet.2021.1.1.0028>
- Kirsch, B., & Luo, T. (2023). Universal design for learning implementation in higher education: Survey of faculty and instructional designers. *The Journal of Applied Instructional Design*, 12(4), 17-33. <https://doi.org/10.59668/806.13414>
- Komis, B. (2015). Didactics of computer science: research approaches to learning and teaching (MSC). University of Patras. <https://eclass.upatras.gr/modules/document/file.php/PN1425/%CE%95%CF%81%CE%B3%CE%B1%CF%83%CE%AF%CE%B5%CF%82/ProjectInstructionsOpenCourses2.pdf>
- Koper, R. (2005). An introduction to learning design. In R. Koper & C. Tattersall (Eds), *Learning Design* (pp. 3-20). Springer-Verlag. [https://doi.org/10.1007/3-540-27360-3\\_1](https://doi.org/10.1007/3-540-27360-3_1)
- Koutsogiannis, D., & Pavlidou, M. (2012). Study on the design, development and implementation of scenarios in secondary education: For interdisciplinary activities within the context of the literature course area and with other subjects, for semi-formal and informal school practices, with interactive whiteboards and laptops. Greek Language Center. [http://old.greek-language.gr/sites/default/files/digital\\_school/melete\\_gia\\_ta\\_diathematika\\_senaria\\_koutsogiannes-paulidou.pdf](http://old.greek-language.gr/sites/default/files/digital_school/melete_gia_ta_diathematika_senaria_koutsogiannes-paulidou.pdf)
- Laurillard, D., Kennedy, E., Charlton, P., Wild, J., & Dimakopoulos, D. (2018). Using technology to develop teachers as designers of TEL: Evaluating the learning designer. *British Journal of Educational Technology*, 49(6), 1044-1058. <https://doi.org/10.1111/bjet.12697>
- Lowe, D. (2023). Supporting diverse workforces: As a change agent, one instructional designer brings Design Justice to instructional design practice. *The Journal of Applied Instructional Design*, 12(4), 73-79. <https://doi.org/10.59668/806.12921>



- Mamakli, S., Alimoğlu, M. K., & Daloğlu, M. (2023). Scenario-based learning: Preliminary evaluation of the method in terms of students' academic achievement, in-class engagement, and learner/teacher satisfaction. *Advances in Physiology Education*, 47(1), 144-157. <https://doi.org/10.1152/advan.00122.2022>
- Martínez-Argüelles, M.-J., Plana-Erta, D., & Fitó-Bertran, À. (2023). Impact of using authentic online learning environments on students' perceived employability. *Educational Technology Research and Development*, 71(2), 605-627. <https://doi.org/10.1007/s11423-022-10171-3>
- Mikropoulos, T. A., & Bellou, I. (2010). *Computer-aided teaching scenarios*. Kleidaritmos Publications.
- Mio, C., Ventura-Medina, E., & João, E. (2019). Scenario-based eLearning to promote active learning in large cohorts: Students' perspective. *Computer Applications in Engineering Education*, 27(4), 894-909. <https://doi.org/10.1002/cae.22123>
- Molenda, M. (2015). In search of the elusive ADDIE model: Performance improvement. *Performance Improvement*, 54(2), 40-42. <https://doi.org/10.1002/pfi.21461>
- Mor, Y., Craft, B., & Hernández-Leo, D. (2013). Editorial: The art and science of learning design. *Research in Learning Technology*, 21, Article 22513. <https://doi.org/10.3402/rlt.v21i0.22513>
- Nguyen, H. D., Pye, M., van den Berg, F. T., Lilje, O., Widjaja, M., & Lee, T. (2023). Engaging students in scenario-based assessment for final exams. *Proceedings of the Australian Conference on Science and Mathematics Education (2023)*. <https://openjournals.library.sydney.edu.au/IISME/article/view/17472>
- Olivier, B., & Tattersall, C. (2005). The learning design specification. In R. Koper & C. Tattersall (Eds), *Learning Design* (pp. 21-40). Springer-Verlag. [https://doi.org/10.1007/3-540-27360-3\\_2](https://doi.org/10.1007/3-540-27360-3_2)
- Pernin, J. P., & Lejeune, A. (2004). *Modèles pour la réutilisation de scénarios d'apprentissage*. Actes du colloque TICE Méditerranée, Nice, 26-27 novembre 2004. <https://isdms.univ-tln.fr/PDF/isdms18/48-pernin-lejeune.pdf>
- Petropoulou, O., Kasimati, K., & Retalis, S. (2015). *Modern forms of educational evaluation with the use of educational technologies*. Association of Hellenic Academic Libraries (AAL). <https://repository.kallipos.gr/handle/11419/232>
- Potter, C. (2006). Psychology and the art of programme evaluation. *South African Journal of Psychology*, 36(1), 82-102. <https://doi.org/10.1177/008124630603600106>
- Rao, K., & Meo, G. (2016). Using Universal Design for Learning to design standards-based lessons. *Sage Open*, 6(4), 2158244016680688. <https://doi.org/10.1177/2158244016680688>



- Rao, K., Ok, M. W., & Bryant, B. R. (2014). A review of research on Universal Design Educational models. *Remedial and Special Education*, 35(3), 153-166. <https://doi.org/10.1177/0741932513518980>
- Reeve, J., & Peerbhoy, D. (2007). Evaluating the evaluation: Understanding the utility and limitations of evaluation as a tool for organizational learning. *Health Education Journal*, 66(2), 120-131. <https://doi.org/10.1177/0017896907076750>
- Reigeluth, C. M. (1983). *Instructional design: What is it and why is it?* In C. M. Reigeluth (Ed.), *Instructional design theories and models: An overview of their current status* (Vol. 4, pp. 3-36). Psychology Press.
- Rogers, S., & Gronseth, S. (2021). Applying UDL to online active learning: Instructional designer perceptions. *The Journal of Applied Instructional Design*, 10(1), 7-29. <https://doi.org/10.59668/223.3748>
- Salas-Rueda, R.-A., Castañeda-Martínez, R., Eslava-Cervantes, A.-L., & Alvarado-Zamorano, C. (2022). Teachers' perception about MOOCs and ICT during the COVID-19 pandemic. *Contemporary Educational Technology*, 14(1), Article ep343. <https://doi.org/10.30935/cedtech/11479>
- Selwyn, N. (2023). Addressing the challenges of AI in education. *Educational Research Review*, 35, 100-110. <https://www.scirp.org/reference/referencespapers?referenceid=3989901>
- Taylor, K., & Yuknis, C. (2023). Universal design for learning supports distance learning for deaf students. *American Annals of the Deaf*, 168(3), 41-54. <https://doi.org/10.1353/aad.2023.a917249>
- The Ohio State University. (2021). *Scenario based learning's potential for online, asynchronous learning and beyond*. OSU.edu. <https://ascode.osu.edu/scenario-based-learning-potential-online-asynchronous-learning-and-beyond>
- United Nations Evaluation Group. (2016). *Norms and standards for evaluation*. UNEG. <https://www.iom.int/sites/g/files/tmzbd12616/files/2018-07/UNEG-Norms-Standards-for-Evaluation-2016.pdf>
- Vasquez, E., Basham, J., Goldman, S., Gumpert, M., Marino, M., Nagro, S., & Smith, S. (2024). *Considering artificial intelligence in higher education*. In E. Vasquez III, J. Basham, & M. Marino (Eds.), *Inclusive intelligence: The impact of AI on education for all learners* (pp. 18-26). Center for Innovation, Design, and Digital Learning. [https://ciddl.org/wp-content/uploads/2024/04/InclusiveIntelligence\\_a11y\\_navadded.pdf](https://ciddl.org/wp-content/uploads/2024/04/InclusiveIntelligence_a11y_navadded.pdf)
- Villiot-Leclercq, E. (2007). Genèse, réception, orientation et explicitation des scénarios pédagogiques. Vers un modèle de conception des scénarios par contraintes. *Distances et Savoirs*, 5(4), 507-526. <https://doi.org/10.3166/ds.5.507-526>



Winstead, S. (2025, April 2025). *What is instructional design in education? Everything you need to know*. My eLearning World. <https://myelearningworld.com/what-is-instructional-design/>

Zhao, W.-J., Cao, Z., & Liao, H.-J. (2022). The effects of augmented reality learning experiences on students' academic performance: A meta-analysis review. *2022 8th International Conference on Information Management (ICIM)*, 25-31. <https://doi.org/10.1109/ICIM56520.2022.00012>

Zunic, M., & Holenko Dlab, M. (2020). A tool for computer-supported development of learning scenarios. *In ICERI2020 Proceedings*, 4273-4280. <https://doi.org/10.21125/iceri.2020.0950>