

THE PHOTODENTRO LEARNING SCENARIO REPOSITORY AND LEARNING SCENARIO DESIGNER TOOL: AN ONLINE ENVIRONMENT FOR CREATING, ORGANIZING, AND SHARING STRUCTURED LEARNING SCENARIOS AND CUSTOMIZABLE TEMPLATES

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Abstract

The paper presents the design, development, and operation of the Photodentro Learning Scenario (Photodentro LS) Repository and Learning Scenario Designer tool (photodentro.edu.gr/lis), a new, open Greek national digital repository and e-service for teachers and researchers, to design, classify, publish and share online structured learning scenarios, as well as to search, adapt and reuse learning scenarios published by others. Using the Photodentro LS Designer tool, teachers are guided step-by-step to create online learning scenarios with didactic activities based on pre-defined Learning Scenario Templates, developed by scientific or pedagogical experts. A Generic Learning Scenario Structure was defined, aiming to capture all potential aspects of describing learning scenarios. Specialized LS Templates can then be derived by simplifying the Generic LS structure and by providing custom guidelines and suggestions focusing on a methodological or pedagogical approach or subject matter. This process is supported by the integrated Photodentro LS Template Designer tool, which is targeted at scientific experts, allowing them to define and share online custom, pedagogical LS Templates. The Photodentro LS Repository hosts and allows open access to both Learning Scenarios and LS Templates. An IEEE LOM-based metadata Application Profile was defined to describe and classify Learning Scenarios and LS Templates as well as to support filtering according to various aspects of learning scenarios.

Keywords: learning scenario, educational scenario, educational repository, learning design, learning scenario templates, OERs, user-generated content, e-learning.

1 INTRODUCTION

A Learning Scenario (LS) is the description of a learning context that focuses on one or more cognitive fields, sets explicit educational goals or expected learning outcomes, follows certain methodological approaches or pedagogical principles, and is implemented through a sequence of learning activities where students have well-defined roles, utilizing specific educational tools. Other relevant terms used in the bibliography are educational scenario [1], pedagogical scenario, and didactic scenario [2]. A similar and widely used term is 'Learning Design', which was defined as 'an application of a pedagogical model for a specific learning objective, target group, and a specific context or knowledge' [3]; or, as a 'representation of what a teaching and learning session includes so that learners achieve specified learning outcomes, often structured as a sequence of learning activities' [4].

The development of learning scenarios is usually done by teachers or researchers. Modern teacher training and professional development programs, and in particular, those related to the use of digital technology and ICT in education, have adopted and included in their curriculum the design of learning scenarios, introducing teachers to LS concepts and reasoning, while often the development of an example learning scenario by teachers is part of their final assessment process. By designing and sharing learning scenarios, teachers become more effective in their preparation of teaching activities. The value of this process for the professional development of teachers has been recognized by many researchers. Laurillard in [5] presents how technology and the role of teacher-as-designer 'could bring about large-scale improvements in teacher professional development'. In the same direction, Dalziel et al. [6] highlight the importance of creating and sharing teaching ideas in the form of learning designs; Morris & Hiebert [7] present how sharing 'artifacts of instructional products' can improve teachers' methods of teaching; and Pozzi et al. [8] state that learning designs tools and methods can support 'pedagogical reflection, foster teachers' creativity in conceiving new educational solutions and make their design knowledge explicit, and thus potentially sharable and reusable'.

1.1 Related work

The growing transition to digital education has increased the need for sharing *reusable* digital Learning Scenarios via online, *open* educational repositories of learning scenarios or designs. Sharing learning scenarios in teacher networks and open communities of practice has been acknowledged as important for teacher professional development [9]; going further, by reusing, adapting, personalizing, and sharing their learning designs, teachers contribute to the creation of 'collective intelligence, based on the developing community knowledge' [10]. In most cases, however, learning scenarios are shared as documents in pdf or similar format, while there is a growing demand for online environments that allow structured and assisted/guided authoring of learning scenarios.

1.1.1 Learning Scenario Design Tools

Our work in this paper has its origins in the EduTubePlus Learning Scenario Designer (or ETP-LS Designer), a web-based authoring tool, which we designed and developed in 2009, in the context of the EduTubePlus European project [11], [12] to support video-based learning scenarios and activities. The ETP-LS Designer was developed as part of an integrated online EduTubePlus platform, which included a European digital educational video library and a Learning Management System. Using the ETP-LS Designer, teachers and pedagogical experts were guided to design and describe their video-based learning scenarios using pre-defined customizable templates and to use, translate, or adapt existing ones. Based on a sound pedagogical framework for video-based active learning developed by the project's scientific team [13] the ETP-LS Designer provided a set of pre-defined scenario *Templates*, each one accompanied by guidelines for building a certain category of video-based learning scenarios (e.g. based on a methodological approach such as problem-solving, or on the type of activities involved). An ETP-LS Template Editor allowed pedagogical experts to develop ETP-LS Templates, customizing a Generic ETP-LS template that captured all potential aspects of video-based learning scenarios. However, after the end of the project in 2011, and given that the tool was part of the EduTubePlus platform and not a standalone one, the ETP-LS Designer stopped being supported and did not evolve further.

Our initial inspiration for the ETP-LS Designer was the Phoebe Pedagogic Planner [14], an online prototype tool that aimed to support the design of learning activities. Phoebe allowed users to create, modify and share their learning designs, based on existing or newly created templates, or to view, use and adapt existing learning designs. Among the other relevant tools of that period, we mention here the London Pedagogy Planner (LPP) [15], a user-orientated prototype design tool for collaborative online planning aiming to support users in developing, analyzing, and sharing learning designs; the DialogPlus [3], a learning design toolkit for creating pedagogically effective learning activities, whose design method was based on 'nuggets' i.e. activity-based objects embodying both learning activities and resources; the Pedagogical Plan Manager (PPM) [16], designed for the production and sharing of 'pedagogical plans', which are instantiations of pedagogical scenarios and are represented as tree-like hierarchical entities of nodes at different levels of detail. In this work, a pedagogical scenario was defined as a description of aspects deemed relevant for the design of learning activities, while descriptors are grouped into four major categories: Identity, Target, Specifications, and Rationale. We also mention the prototypes based on the IMS Learning Design (IMS-LD) specification [17], the meta-language for representing learning designs; however, IMS LD-based tools required technical formalisms that proved complex for teachers to follow [18].

Since then, learning design research has resulted in many new learning environments and associated tools for creating, managing, and sharing online educational scenarios or learning designs, as well as in the evolution of many early relevant tools. Two tools, which however follow a different approach or have different goals than ours, are the Learning Activity Management System (LAMS) [6], an authoring environment supporting the design and delivery of sequences of collaborative learning activities, and the AESOP [19], a Greek web-based tool for creating online didactic scenarios.

The most significant, operational, and relevant tool to ours however is the Learning Designer [5], [20], a constructionist web-based, open learning design environment for teachers, based on pedagogic theory. Teachers are guided to select among six types of learning activities, each based on a learning methodology (learning through Acquisition, Collaboration, Discussion, Investigation, Practice, and Production) and are supported to represent learning designs. Learning design elements include topic, level, outcomes, activities, group size, duration, resources, and distribution of activities. They can be shared online and adapted by others, allowing teachers to get ideas and inspiration by browsing the collection.

1.1.2 Supporting Customizable Learning Scenario Templates

To assist teachers in the process of designing learning scenarios, *templates* are usually provided, either as documents or online forms, including the elements that are considered important for defining a scenario, e.g. title, description, target audience, subject, pedagogical approach, objectives/expected results, duration, class organization, required materials, educational activities, etc. In some cases, instructions are provided on what each component is expected to include. However, there are many different scientific approaches as to what a learning scenario contains, how its information is structured, and what is expected in each section. Moreover, based on their pedagogical approach and methodology (e.g. project-based, or inquiry-based learning) or their subject matters, learning scenarios may require not only a custom structure but mainly, specialized instructions for teachers. As mentioned in [2], the 'situation becomes more confusing since experts' opinions do not coincide'.

Supporting customizable templates with tailored-made structure and pedagogical guidelines is important for teachers to adopt a digital tool for guided authoring of learning scenarios. Although some of the existing tools mentioned above allow users to share and adapt learning scenarios, none of them supports the design of custom Learning Scenario *Templates* with specialized guidelines.

1.2 What the paper is all about

The paper presents the design, development, and operation of the Photodentro Learning Scenario platform (*Photodentro LS*), a new, open and free, web-based platform and e-service for teachers and researchers, to design, classify, publish, and share online structured learning scenarios as well as to search, adapt, and reuse learning scenarios published by others. *Photodentro LS* is available at <https://photodentro.edu.gr/lis>.

Photodentro Learning Scenarios are based on customizable Templates; a *LS Template* provides a structure for describing a learning scenario (i.e. sections, subsections, and elements), along with pedagogical guidelines for each part of it. The underlying idea of the Photodentro LS approach was to first define a *Generic Learning Scenario Template*, which provides a full, extended LS structure, capturing all potential aspects of learning scenarios and includes general-purpose pedagogical guidelines. Then, all specialized LS Templates can be derived by simplifying and customizing the generic one, to meet certain pedagogical approaches or target audience needs.

The Photodentro LS platform includes three modules:

- a) The Photodentro Learning Scenario *Repository* (*Photodentro LS Repository*), an open IEEE LOM-based digital educational repository, for hosting, organizing, classifying, publishing, and openly sharing structured Learning Scenarios and LS Templates; the repository supports free-text search, and navigation or filtering by subject, educational level, duration, the LS Template used, etc.
- b) The Photodentro Learning Scenario *Designer* (*Photodentro LS Designer*), an online learning design environment, where teachers are guided step-by-step to create structured learning scenarios with didactic activities, starting from online, pre-defined LS Templates and following specialized pedagogical guidelines and suggestions. Learning scenarios are described with metadata following the IEEE-LOM specification and are provided under Creative Commons licenses.
- c) The Photodentro *LS Template Designer*, an online tool, which allows experts to define and share pedagogical LS Templates, by simplifying the generic LS structure and by providing custom guidelines and suggestions according to certain pedagogical approaches, teaching strategies, methods, and practices of teaching, subject matters, etc.

Photodentro LS was designed, developed, and is being operated by CTI "DIOPHANTUS", and in particular, by its Directorate of Strategy and Digital Educational Content, on behalf of the Greek Ministry of Education, in the context of the National program "Digital School II" (NSRF 2014-20) [21] [22]. It is the Greek national Repository and LS Designer tool for primary and secondary education, targeted at teachers, researchers, students, and the educational community in general.

In addition to the Generic LS Template, the Photodentro LS currently provides eleven (11) specialized Learning Scenario Templates defined by the scientific and pedagogical experts committee of the Digital School II project [21]. Exemplar learning scenarios for each LS Template are provided as well.

The Photodentro LS Designer tool has been adopted by pedagogical faculties in three Greek Universities as a tool for training students on learning scenarios. Since its launch in Sept 2021, 123 learning scenarios have been uploaded.

2 REPRESENTING AND DOCUMENTING LEARNING SCENARIOS

2.1 The Photodentro Generic Learning Scenario Template

The description of a learning scenario usually follows a “structure”, which includes the elements that should be specified, in order for the authors to explain and make clear the learning context and how to achieve the objectives or learning outcomes suggested by the scenario. However, there is no common structure, template, or set of elements for describing learning scenarios, nor is there a relevant standard. Many different variants have been proposed, which differ in the elements included, how these elements are organized in sections or subsections, the level of abstraction, etc. Depending on the context, they may emphasize on different fields or sections, use different terminology, suggest different order of description, being simpler or more complex.

Our first goal was to define a fully-expanded outline and structure of a Learning Scenario contents, i.e. a generic template for learning scenarios, providing a superset of all potential elements for describing learning scenarios, and homogenizing the various proposed approaches as to what the description of the scenarios includes and how its sections are organized. This template should be generic enough to allow all existing learning scenarios to instantiate from it and all proposed templates to be supported by reducing and deleting its elements and fields. Towards this end, we examined many existing learning scenarios and suggested templates from different sources, including European or national projects such as the Greek nationwide teacher training and professional development program [23].

The process resulted in the *Photodentro Generic Learning Scenario Template* presented in Table 1 below. This Template is the result of many exchanges among the members of the project scientific team, each of whom brought their individual backgrounds, opinions, and insights into pedagogy and learning technologies. An attempt was made to make this structure a superset of the existing structures that are utilized in various contexts. There is no need for authors to include all these fields in a scenario. Generic guidelines and hints on what to describe in each section are provided as well.

Table 1. *Photodentro LS Generic Learning Scenario Template*

<i>Generic, fully-expanded structure outline for Learning Scenarios</i>	
1.	SCENARIO IDENTITY
1.1.	Scenario title
1.2.	Creators / Contributors
1.3.	Short description
1.4.	Thematic / cognitive area(s)
1.5.	Subject matter(s)
1.6.	Connection with the curriculum (a)
1.7.	Scenario language
2.	RATIONALE
2.1.	Rationale of the scenario / Justification of the choices
2.2.	Originality / Innovation
2.3.	Added value
2.4.	Cognitive / didactic problems
2.5.	Pedagogical approach and strategies
2.5.1	Pedagogical approach
2.5.2	Teaching model
2.5.3	Teaching strategies/techniques
3.	SCENARIO IMPLEMENTATION CONTEXT
3.1.	Target audience (target group or to whom it is addressed)
3.1.1	Educational level
3.1.2	Grade
3.1.3	Age group

	3.1.4	Language of the targeted audience
	3.1.5	Language proficiency level [if it is a foreign language scenario]
	3.1.6	Special needs [if it is aimed at learners with special educational needs and disabilities]
	3.2.	Estimated scenario implementation time (duration)
	3.3.	Place of implementation
	3.4.	Class orchestration
	3.4.1	Classroom / teaching organization
	3.4.2	Roles of students & teachers
	3.5.	Scenario implementation requirements
	3.5.1	Prerequisite skills & knowledge of students
	3.5.2	Required auxiliary materials and tools
	3.5.3	Required technical infrastructure
	3.5.4	Required preparation
4.		OBJECTIVES / EXPECTED LEARNING OUTCOMES
	4.1.	Teaching/learning objectives
	4.1.1	Generic objective(s)
	4.1.2	Taxonomy of teaching/learning objectives
	4.1.3	Formulation of teaching/learning objectives
	4.1.4	Specific teaching/learning objectives (by Bloom's taxonomy)
	4.1.5	Specific teaching/learning objectives (media literacy domain)
	4.2.	Expected learning outcomes
	4.2.1	Knowledge
	4.2.2	Skills
	4.2.3	Attitudes, behaviors, and values
	4.3.	Connection with the curriculum (a)
	4.4.	Expected learning or other difficulties
	4.5.	Pedagogical approach and strategies
	4.6.	Educational resources
5.		EDUCATIONAL ACTIVITIES
	5.1.	Teaching flow/process
	5.2.	Phase X (or Step X) or Activity X
	5.2.1	Phase / step / activity title
	5.2.2	Short description
	5.2.3	Teaching objectives / Expected learning outcomes
	5.2.4	Activity type
	5.2.5	Estimated duration
	5.2.6	Teaching technique(s)
	5.2.7	Tools
	5.2.8	Sources
	5.2.9	Class orchestration
	5.3.	Worksheets
	5.4.	Contingency plan
6.		ASSESSMENT & IMPACT
	6.1.	Type of assessment
	6.2.	Assessment tools
	6.3.	Impact / Reflection
7.		ADDITIONAL INFORMATION
	7.1.	Scenario extension
	7.2.	Variations
	7.3.	Bibliography
	7.4.	Additional digital content and tools
	7.5.	Other information

2.2 An IEEE LOM-based metadata Application Profile for Learning Scenarios

The Metadata Application Profile is a key conceptual design tool for Digital Repositories, as it integrates and specifies the core database entities, fields, and values they can receive. Based on the *Generic Learning Scenario Template*, and following the international metadata standard IEEE LOM, we defined an IEEE LOM-based metadata Application Profile for Learning Scenarios and Templates, thus ensuring interoperability between repositories at national and international level. Thematic taxonomies and controlled vocabularies of the Photodentro IEEE LOM GR AP were also used.

3 THE PHOTODENTRO LEARNING SCENARIO PLATFORM (PHOTODENTRO LS)

Photodentro is the trademark name of the Greek national digital educational repository ecosystem for primary and secondary education [24], [22], providing the digital infrastructure for hosting, organizing, and allowing easy access to OERs, with a strong emphasis on open access. The ecosystem includes a series of OER Repositories, each one hosting a different type of educational content or serving a different purpose. Three repositories host certified or curated content: Learning Objects (*Photodentro LOR*, photodentro.edu.gr/lor); educational videos (*Photodentro Video*, photodentro.edu.gr/video); and educational software (*Photodentro EduSoft*, photodentro.edu.gr/edusoft). Another three repositories are provided for teachers and researchers to upload and share their own, open educational resources: user-generated Learning Objects (*Photodentro UGC*, photodentro.edu.gr/ugc); Open Educational Practices (*Photodentro OEP*, photodentro.edu.gr/oep); and pupils' creations (*Photodentro i-create*, photodentro.edu.gr/i-create). The ecosystem also includes the Greek National Aggregator of Educational Content (photodentro.edu.gr), harvesting learning resources from external repositories.

Taking into consideration the expressed needs of the Greek educational community for an online, Photodentro-like web-based repository, where teachers can upload and share their own open educational/learning/didactic scenarios or learning designs, as well as find, use, and adapt scenarios by others, and being inspired by our previous EduTubePlus LS Designer Tool [12], we designed and developed the *Photodentro Learning Scenario* platform (*Photodentro LS*, photodentro.edu.gr/lis), the newest member of the Photodentro ecosystem, which includes the following modules:

3.1 The Photodentro Learning Scenario Repository

The Photodentro Learning Scenario *Repository* (*Photodentro LS Repository*) for Primary and Secondary Education, is an open digital educational repository that hosts, organizes, and openly shares to everyone structured Learning Scenarios with didactic activities, developed by teachers, students, academics, pedagogists, or researchers. Learning Scenarios are based on LS Templates, either the default, Generic LS Template or any other custom, specialized Template available.



Figure 1. The Photodentro Learning Scenario Repository (home page)

In the Photodentro LS repository everyone can dynamically search and find learning scenarios using keywords or free-text, and navigate or filter all available learning scenarios based on various aspects, including: their subject matters; the educational level, grade, or language level of students to which they are addressed; their estimated duration; and the LS Template on which they are based on. They can also open, project, view, and print all learning scenarios published by others.

In addition, in the Photodentro LS repository, users can find Learning Scenario *Templates* developed by pedagogical and scientific experts, each focusing on a methodology, learning approach, or cognitive domain, and providing pedagogical guidelines and instructions for teachers to design and describe their learning scenarios.

The Photodentro LS repository started its operation in July 2021. All learning scenarios and templates are freely available with the Creative Commons CC BY-NC-SA license, i.e. they are available for free use, reproduction, redistribution, presentation, and utilization, provided that there is a reference to the creator, there is no intention to commercialize, and any derivative work is distributed only with the same or similar license.

Photodentro LS development was based on the DSpace open source software (<https://duraspace.org/dspace, v6.3>), which has been properly expanded and configured using Java, Javascript, CSS, HTML, HTML5 technologies. PostgreSQL relational database was used to store the data and metadata and the Solr indexing mechanism is used for indexing.

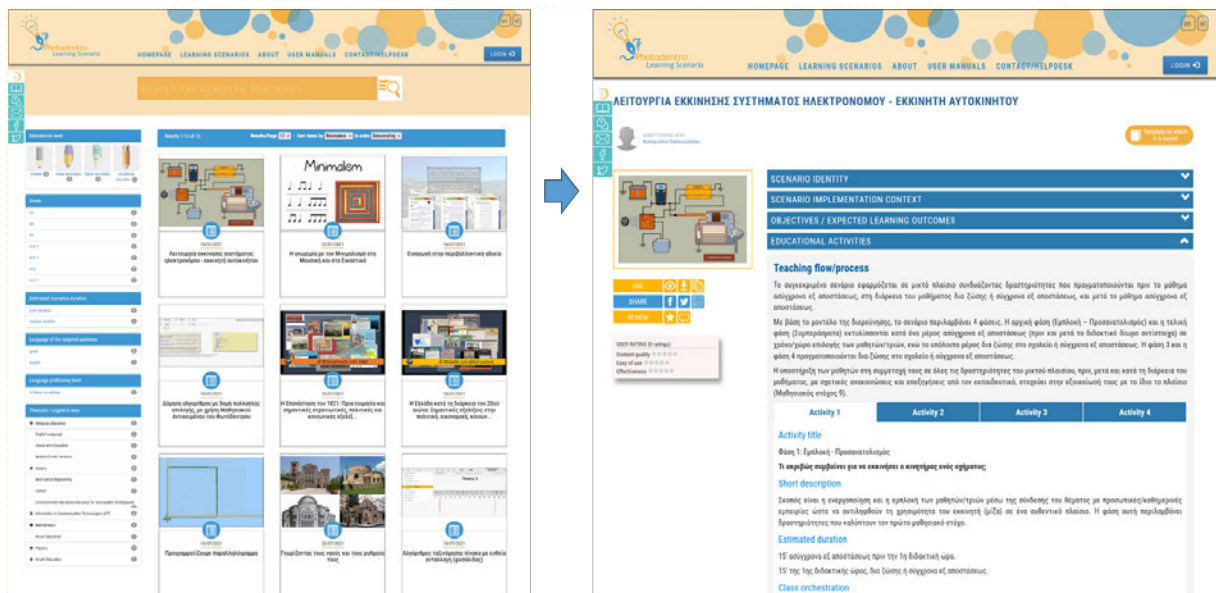


Figure 2: Searching, navigating, and previewing Learning Scenarios

3.2 Photodentro Learning Scenario Designer Tool

The Photodentro LS *Designer* is a web-based tool for creating, authoring, managing, and publishing learning scenarios, based on customizable LS Templates. It is targeted at teachers, researchers, students of pedagogical departments, etc. It provides a form-based environment where users (a) are guided to create their own structured learning scenarios with didactic activities, starting either from an available LS Scenario Template or from a learning scenario published by another user, and filling out forms, following specific pedagogical directions and suggestions; (b) save and organize their Learning Scenarios in their workspace; (c) publish their educational scenarios on the Photodentro LS Repository, and (d) manage their learning scenarios, i.e. modify, edit, delete and republish them.



Figure 3. The Photodentro Learning Scenario Designer form-based environment

In particular, users can create a Learning Scenario in the following ways: (a) Start from a new, empty Learning Scenario *Template* form, by selecting one of the available LS Templates, either the Generic or a specialized one, depending on the category of Learning Scenario they wish to create. The form follows the structure and includes the elements and the pedagogical directions of the selected template. Users can further simplify this form by hiding fields; (b) Start from an existing, own learning scenario they have developed and saved in their workspace, and (c) Start from an existing learning scenario, developed and published in the Photodentro LS *Repository* by another user. Being registered users, they are allowed to create a copy of it in their workspace, modify and customize it accordingly, save, publish, or share their own version on the Repository. The system keeps track of the creation of versions and automatically makes references to the creators of the original scenarios.

The Photodentro LS Designer tool provides six Navigation Tabs, each one corresponding to a different section of the Learning Scenario (i.e. Scenario Identity, Rationale, Scenario Implementation Context, Educational Activities, Assessment & Impact, Additional Information). Each LS form and section contain only the fields that have been selected at the underlying LS Template and provides the corresponding specialized guidelines and instructions. Consequently, multiple variations and different pedagogical approaches to learning scenarios can be supported.

Particular emphasis is given to the learning activities, which are at the heart of the learning scenarios. The LS Designer tool supports the creation of sequences of learning activities, by providing a structured form of describing each one. Learning activities appear in separate tabs, whose order can easily change. The pedagogical instructions for the description of learning activities can be differentiated depending on the methodological or pedagogical approach they follow or on their type, and are defined in the respective template.

Access to the Photodentro LS Designer tool is provided via free registration. It is currently open to all teachers in Greece, via their national school accounts as well as to all researchers, students, or academics, via their academic e-mail accounts. Additional academic institutions can be added to the platform's 'white list'. A public profile is required in order for the registered users to publish learning scenarios on the Photodentro LS Repository. Users are encouraged to include in their profile their experience, achievements, studies, publications, etc. Registered users can also rate or provide comments for published learning scenarios. The list of their published learning scenarios and any other social contribution (e.g. comments and ratings) also appears in their public profile. This social dimension, along with the promotion of the open-sharing culture, supported by the open publishing, discussion, and sharing of learning scenarios, makes the Photodentro LS Designer a powerful tool for teachers' professional development.

3.3 The Photodentro Learning Scenario Template Designer

The Photodentro LS *Template* Designer is a web-based tool for defining and formulating custom, specialized Templates for Learning Scenarios, based on the *Photodentro Generic LS Template*. It is addressed to authorized users, including academics, and scientific or pedagogical teams.

The process of defining a custom focused LS Template for a selected methodological, teaching, or pedagogical approach or domain includes (a) the decision on which sections and elements of the fully-expandable LS Template are considered relevant and important to include in the custom one, in order for the derived learning scenarios to support the goals, the needs, and the pedagogy of the selected approach, and (b) the writing of custom instructions and pedagogical directions for this category of scenarios targeted to the scenario authors, guiding them on what to include in each section when developing a learning scenario based on this custom Template.

Similar to the LS Designer, the LS *Template* Designer tool provides a form-based environment where authorized experts can (a) define specialized templates, starting from the Generic LS Template and filling out guidelines only for the required sections of the generic form; (b) save their LS Template in their workspace and manage them; and (c) publish LS Templates on the Photodentro LS Repository, making them available to all Photodentro LS users, to base their learning scenarios on.

When designing custom LS Templates, there should be a concern to ensure its usability and user-friendliness, as if the scenario template is overly demanding of the user this may militate against its take up in the target community. On the other side, detail is required in order for such a scenario to be sufficiently concrete as well as easy to understand and to adopt and use in daily practice.

3.4 Specialized LS Templates & Exemplary Learning Scenarios

As mentioned above, in addition to the Generic LS Template, the Photodentro LS currently provides eleven (11) specialized Learning Scenario Templates defined by the scientific and pedagogical experts committee of the Digital School II project [21]. Each one focuses on a certain category of learning scenarios and includes custom pedagogical guidelines that are deemed appropriate to provide in each case; where appropriate, a selection of chapters/sub-chapters has been done, to simplify the process of developing learning scenarios.

Ten specialized LS Templates focus on a subject or topic, most of them under a certain pedagogical approach: Geography (constructive pedagogical approach); History (historical inquiry-based learning); Religious Education (experiential learning approach); Mathematics (socio-constructionist learning); and Aesthetic Education (project method); Physics & Natural Sciences; Environmental Education / Education for Sustainable Development; Pre-school Education; Foreign Languages, and Informatics. One interdisciplinary LS Template was also defined, focusing on the exploratory learning pedagogical method. Exemplar learning scenarios for each Specialized LS Template are provided as well.

4 CONCLUSIONS

In this work, we presented the Photodentro Learning Scenario Repository and its LS Designer and LS Template Designer web-based tools, supporting teachers to design, classify, adapt, publish, and share structured learning scenarios with didactic activities, based on custom templates for various methodological or pedagogical approaches. Photodentro LS promotes the use of open learning scenarios and pedagogical templates, encouraging teachers, pedagogues, and researchers to use, remix, adapt, and redistribute them under the Creative Commons license, improving learning and reducing social inequalities. Photodentro LS Designer fosters the role of teachers as content creators, inspiring them to take an active role in the creation of instructional materials, and can be used to support teachers' professional development programs.

Next goals include the development of additional specialized LS Templates, covering other learning methodologies and pedagogical approaches; the even greater use of the LS Designer by pedagogical University Departments for training students in the process and the concepts of learning designs and scenario development; its use to support the national teacher training and professional development programs; and its expansion and utilization by researchers and teachers at European level, which is expected to bring interesting results and new ideas.

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