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Advanced digital competences for language teacher training

Abstract

This paper outlines a post-graduate training program for the development of advanced digital competences, aimed at teachers of Italian L2. In particular, it describes the educational structure, the training methods, and the developed competences in relation to the frameworks outlined by the *DigCompEdu*, a recent European document proposing a model of digital competences for educators at all levels of education. The contribution also presents the results of an investigation aimed at assessing the perceived adequacy of the training methods adopted in the post-graduate program and the actual impact on the practical application of the competences acquired by the participants.

Keywords

Digital competences; Teacher training; Online teaching; Digital technologies; Postgraduate program

1. *Introduction*[1]

The diffusion of information and communication technologies, including within the educational sector, along with the growing accessibility of internet connectivity, have transformed language teaching practices in both traditional and online environments. Consequently, digital competences have become essential requirements for language educators. Recognized by the Council of Europe as key competences for lifelong learning and active citizenship (Council of Europe 2006), digital competences have been examined in a series of European documents attempting to define their components and design tools to promote and support their development (Diadori 2022). Some of these documents have provided guidance on the knowledge and skills needed to integrate digital resources into classroom activities, while others have gone further, articulating the competence across multiple levels and considering different scenarios in which technologies can be employed to support teaching practices.

[1] The article was planned and developed collaboratively by the authors. Nevertheless, the writing of paragraphs 1 and 2 are attributed to Donatella Troncarelli, while the writing of paragraph 3 and 4 is attributed to Matteo La Grassa.

This is the case of the *European Profiling Grid* (*EPG*), a tool for describing the language teacher's competences developed within a project involving various European partners and institutions[2]. The EPG outlines a progression of the teacher's digital competences in three stages. In the initial one, the teachers should be able to select and download documents for use in language lessons. In the following stage, they must be able to utilize multimedia supports, using the network in the classroom, and guiding students to use digital resources. In the most advanced competency stage, the teachers should be proficient in employing a wide range of tools and supports, including social networks and e-learning platforms, also for remote training.

More articulated are the digital competences of teachers and trainers outlined in the *Digital Competence Framework for Educators* (*DigCompEdu*), a reference framework developed by the Joint Research Centre (JRC) for the European Commission and published in 2017[3]. This document proposes a model of competence progression across six stages, referencing different areas of teacher action, with the aim of facilitating self-assessment and enabling continuous improvement. Digital competences thus progress from limited proficiency, involving the selection of online documents for classroom use, to high competence. At advanced level, the teacher is able to exploit a wide array of teaching strategies based on the use of digital technologies, to experiment with new tools, and to introduce innovations in teaching practices.

Addressing the need highlighted in European documents, the University for Foreigners of Siena has focused its efforts on the development of advanced digital skills for language teaching. Since the academic year 2012-2013, the University has been offering a second-level Master's program for training teachers of Italian as a second language with expertise in e-learning[4]. This training proposal has undergone multiple revisions throughout its lifespan to accommodate the evolving digital competencies resulting from technological advancements. This contribution outlines the choices made in determining the skills to be developed, the teaching methods adopted, and the results of an investigation aimed at assessing the effectiveness of the training.

[2] The EPG was developed within the framework of a European project under the Leonardo da Vinci program. More information about the project and the grid of descriptors for teacher competencies can be found at the following web address: https://www.eaquals.org/our-expertise/teacher-development/the-european-profiling-grid.

[3] The document can be downloaded at the following web address: https://publications.jrc.ec.europa.eu/repository/handle/JRC107466.

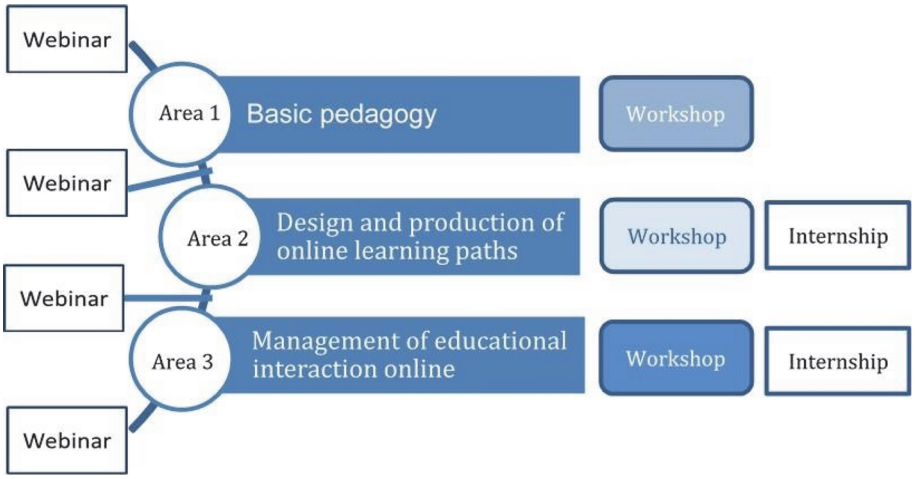
[4] In the Italian academic regulations regarding academic qualifications, Masters are one-year postgraduate programs designed to develop specific skills applicable in a particular professional field. Admission to a first-level Master's program is open to graduates with a bachelor's degree, while entry to a second-level Master's program is permitted only for those with a Master's degree.

2. *A training proposal for enhancing the digital competences of Italian L2 teachers*

2.1 Objectives and education framework of the ELIIAS Master's program

The Master in E-learning for Teaching Italian as a Second Language (ELIIAS) is tailored for recent master's graduates, educators with limited teaching experience, as well as long-serving teachers who wish to develop an advanced level of proficiency in using technologies, learning to design, develop, and implement pathways based on digital pedagogy. To achieve these goals, the educational framework of the Master's program encompasses three competency areas (Fig. 1).

Fig. 1 – *Structure of the ELIIAS Master's Program*



Area 1 focuses on fundamental language teaching skills, aiming to reinforce them and direct them towards online training. The instructional modules in this area address aspects characterizing the digital world, guiding participants in reconsidering methodologies and operational models to make them suitable for online language education or technology-supported instruction. The webinar that concludes this Area introduces the theme of assessment, later revisited and explored in more depth.

Area 2 concerns the ability to design and produce educational pathways. Therefore, the training centres around technological infrastructures for the digitalization of teaching, principles of designing online learning paths, techniques for producing audio, video, multimedia materials, and strategies for researching, selecting, and archiving online resources.

Area 3 is dedicated to the management of the online classroom. In this part of the training program, tools for online communication, methods for setting up digital learning environments, feasible teaching approaches, and strategies for online tutoring that encourage participation, moderate interactions, and promote collaboration in virtual classes are examined. The concluding module of this Area revisits the theme of online assessment, exploring various aspects, highlighting

strengths and addressing critical points. Illustrations of techniques for exporting, processing, and representing data collected from e-learning platforms, which can facilitate the assessment and monitoring of learning and teaching processes, are also provided.

Since being digitally competent involves not only possessing adequate knowledge about the digital world and the educational opportunities it offers but also having skills to use digital tools, each area covered by the Master's program includes a workshop where participants can engage in the development of these skills. Additionally, Areas 2 and 3 involve an internship where participants are encouraged to integrate the knowledge acquired in the modules with the skills practiced in the workshops. This is aimed at developing the ability to formulate effective educational responses to specific training needs for different learner profiles.

Currently, the Master's is entirely conducted online, employing a mostly asynchronous delivery mode. Only the introductory webinar and those concluding each area, with the aim of summarizing the topics covered in the various modules, are live events. These serve as significant moments for interaction, discussion, and sharing, reinforcing the social learning perspective embraced by the Master. Interaction and collaboration among participants are thus required not only in workshops and internships but also in educational modules. For each module, participants are expected to discuss topics on forums and partake in group activities, where the interdependence among members plays a crucial role in achieving the set objectives.

2.2 The digital competences and proficiency levels achieved through the ELIIAS Master's program

As already mentioned, over the course of the Master's ten-year existence, the digital knowledge and competences to be developed have been reviewed and adjusted several times in response to technological advancements, the evolution of digital teaching, and the specific needs of the target audience, identified through training monitoring questionnaires.

In recent years, the revisions of the program have been guided by the framework provided by the *DigCompEdu*, which delineates the digital competences of educators, organizing competences in 6 areas (Fig. 2). The first concerns the broader professional environment of teachers, who must be capable of utilizing technologies for activities beyond teaching, such as contributing to the improvement of the organization in which they operate, interacting with colleagues, students, parents, and other stakeholders, or fostering their own professional growth through the use of network technologies. The competences required for the effective utilization of technologies in the teaching and learning process are outlined in sections 2, 3, 4, and 5 of the document. Among these competences are the abilities to:

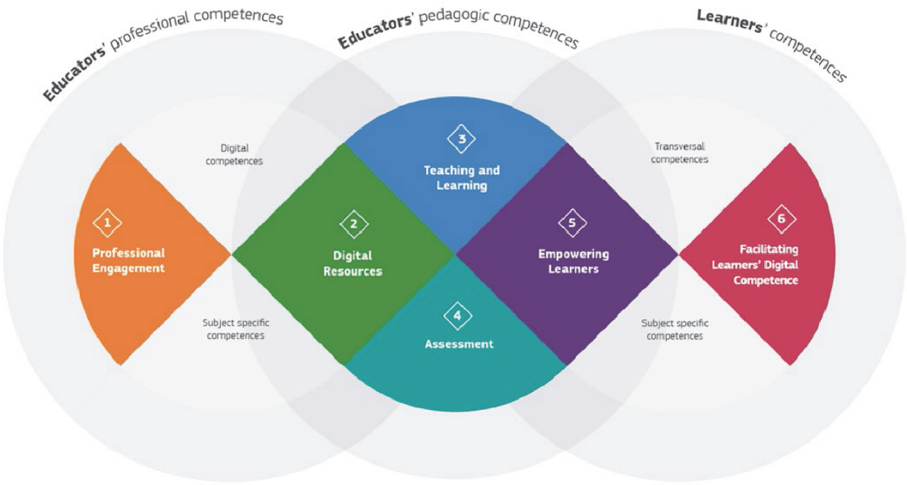
- identify, select, modify, create and share digital educational resources;

- plan, organize and manage the use of digital technologies in teaching;
- employ tools and digital strategies to enhance formative and summative assessment practices;
- use digital technologies to promote greater inclusivity, personalization, and active engagement of students.

The sixth area encompasses the competencies that educators should possess to foster the enhancement of students' digital literacy. Students need to learn how to conscientiously, creatively, and responsibly use technologies for tasks involving information, communication, content creation, personal well-being, and problem-solving. This equips them to navigate adeptly in a society where technologies are increasingly prevalent.

In analogy with the *Common European Framework of Reference* (*CEFR*) for languages (Council of Europe 2001, 2020), these competences are articulated across 6 levels. The intentional alignment of these two reference frameworks aims to streamline their application and underscore the multidimensional nature of competences. Similar to linguistic competence, where learners may not exhibit the same level of proficiency across all skills in different language domains, the degree of digital competence may vary within distinct sectors of a teacher's activities. Moreover, both types of competence are hopefully suited for expansion and further development.

Fig. 2 – *The digital competences of educators in DigComEdu (Source: Redecker, Punie 2017: 15)*



Based on the indications provided by *DigCompEdu*, the current version of the ELIIAS Master's program develops digital competences for Italian L2 teachers to varying degrees (Fig. 3). Specific didactic modules are not dedicated to the competences of the first area (Professional competences), which reach a level between B2 and C1, because the participants practice organizational communication, pro-

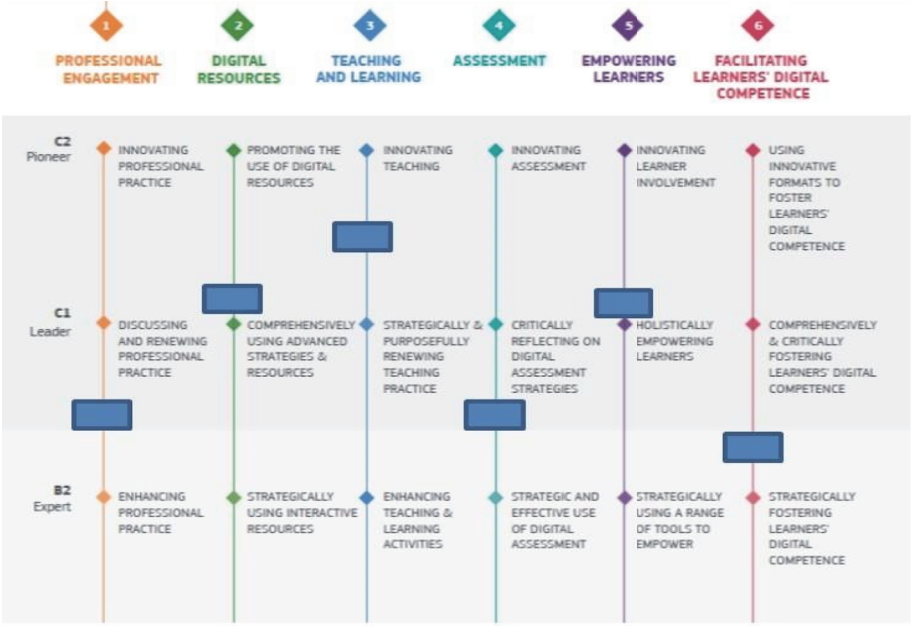
fessional collaboration, and the use of technologies to update their competences comprehensively throughout the entire training program. The reflection on digital practices, a competence included in this area, is explicitly developed in the workshops of the three areas that make up the Master's program.

Even digital pedagogical competences are developed at different levels. A module in Area 2 is dedicated to the ability to select and evaluate digital resources, allowing participants to reach a level close to C1. Two other modules, the workshops and internship within the same Master's area, focus on the ability to plan online teaching paths and develop materials to achieve specific learning objectives, guiding participants to a competence level between C1 and C2.

The modules in Area 3 focus on interactions in virtual learning environments, collaborative practices, and strategies to guide students in reflecting on their own learning. These modules also consider students' active participation in assigned tasks and explore the potentialities and limitations of tools for online communication. Competencies related to teaching and learning practices, as well as empowering learners, reach a C1 level.

In the Master's training program, a relatively small space is devoted to assessment. As previously mentioned, the concluding webinar of the first area and a module of the third area specifically address the monitoring and assessment of online learning processes. Therefore, the competency level related to the use of digital technologies for assessment falls between the B2 and C1 levels.

Fig. 3 – *Levels of competence developed by the ELLIAS Master in reference to DigCompEdu (Source of digital competence levels: Redecker, Punie 2017: 31)*



The competences related to the sixth area of the *DigCompEdu*, namely Facilitating learners' digital competence, are developed partly indirectly, through the experience of the participant as a student in an online training program, and partly explicitly. Topics related to copyright, licenses for the use of digital content and citation methods are covered in modules within Areas 2 and 3. Additionally, these aspects are addressed during the final internship, where participants are guided in developing their own digital teaching projects.

2.3 The assessment of the learning experience

In its decade of existence, the ELIIAS Master's program has maintained a low dropout rate, and participants express overall satisfaction. They are required to complete teaching evaluation questionnaires designed to gather opinions on the proposed content, delivery methods, presented tools, developed competences, and to collect suggestions for the revision and improvement of the training program. The Master's program receives overall positive evaluations from the majority of participants, who believe they have enhanced their digital skills and can apply these effectively in their professional field.

This general appreciation can be attributed to several factors. The first one is the uniqueness of the training proposal, which focuses on advanced digital skills, going beyond the integration of teaching technologies in the classroom and enabling teachers to manage online Italian courses. Secondly, the meaningful experience is shaped by the limited number of participants each year and by the Master's program's approach, which adopts a social perspective on learning that promotes interaction, sharing and constant exchange among the training participants, enhancing their motivation to learn.

3. *The assessment of the training proposal and the relevance of digital competences*

In addition to assessing the learning experience, a digital questionnaire was developed and distributed to former students to gauge their perception of the acquired digital competences after completing the Master and their practical applicability. The survey tool followed the structure of *DigCompEdu*, as outlined in section 2.2. Specifically, five out of the six areas presented in the document were considered, excluding the first one (Professional engagement) as it refers to background managerial objectives (e.g., communication with colleagues) rather than aspects specifically related to language teaching.

The questionnaire, consisting of multiple-choice items on a Likert scale with four options ('Very'; 'Quite'; 'Little'; 'Not at all'), asked respondents to express their opinions on topics covered during the Master's program. It was returned by 75% of potential respondents. In all areas examined, according to the respondents' perception, the Master had significant impacts, as evidenced by the percentage of positive responses being much higher than neutral or negative responses.

3.1 The 'Digital Resources' area

In reference to the 'Digital Resources' area, the Master appears to have provided tools primarily for identifying and selecting appropriate online resources (95% positive responses). This aspect is deemed particularly crucial, considering the extreme heterogeneity of resources available online (La Grassa 2022). Given the substantial quantity of freely accessible educational materials online, only a limited number can be considered effective for language teaching. Therefore, the ability to select such resources is among the fundamental digital skills of educators.

Respondents also perceive an increased competence in evaluating learning environments (92% positive responses) and adapting resources to their teaching contexts (90% positive responses). Conversely, the growth of competences related to setting up environments is perceived to have a lesser impact (77% positive responses). This outcome might be explained by the undeniably greater complexity involved in activating, setting up, and individually managing a digital learning environment. Additionally, this competence may not necessarily be exercised by the educators themselves, especially when IT experts are present in an educational institution.

Finally, the item about competence acquired in creating digital resources received 85% positive responses, with a high percentage of respondents expressing maximum appreciation.

It is noteworthy that items in this area, encompassing competences in selection, modification, and creation of digital resources, overall receive the highest level of appreciation. This result aligns with the didactic offer proposed by the Master, especially because these competences were developed in workshops and internships, focusing predominantly on the analysis and elaboration of digital materials.

3.2 The 'Teaching and Learning' Area

Moving on to the analysis of responses related to the 'Teaching and Learning' area, the Master's program appears to have had a positive impact, especially in the effective integration of technologies with face-to-face teaching (90% positive responses), the context in which the majority of respondents teach. While the Master's program mainly focuses on developing competences for online teaching, the supportive role that digital technologies can play in face-to-face teaching is considered fundamental. It is interesting to observe the positive perception of the acquired skills, both for promoting learners' autonomy in task performance (82% positive responses) and (especially) for facilitating collaborative activities (90% positive responses).

Within the Master's program, efforts are made to take into account both of these dimensions, which characterize the learning path of students acquiring a second language (L2) through e-learning or with significant use of digital technologies, as demonstrated in other studies (La Grassa 2019). The Master's program aims to provide teachers with training that allows them to appropriately balance collaboration and autonomy in their students, developing methodological and technical skills

necessary for implementing Task-Based Language Teaching and Learning examples (Della Putta, Sordella 2022), to be integrated with autonomous learning activities[5].

Less positive responses were obtained for the item 'effectively interacting with students' (80% positive responses). The choice in this case may depend largely on the teaching context in which one operates; understandably, communication via predominantly asynchronous digital technologies may not be considered essential, for example, in schools.

3.3 The Assessment Area

The questions in the 'Assessment' area prompted respondents to share their perspectives on crucial aspects related to online teaching. The complex processes of evaluating learning outcomes—with particular emphasis on the pedagogical facets involved—have been explored to a limited extent, while attention has been directed toward the role of computer support in conducting assessment tests[6]. While not a central focus of the Master's program, as it is not addressed in workshops and internships, the overall evaluation of the development of competences in this area has been positive.

Respondents rated well the moments of formative, ongoing assessment (85% positive responses) and the final assessment (82% positive responses). Particularly notable are aspects related to the interactivity of assessment, such as communication modalities for feedback (87% positive responses).

However, the data is less favorable regarding aspects related to the collection and interpretation of data on assessment (70% positive responses). This evaluation is understandable given the complexity of the subject, which only partially concerns strictly language teaching aspects and requires non-elementary digital competences, including the use of LRS (Learning Record Store), involving the ability to collect, extract, select and analyze files containing a large amount of data.

3.4 The 'Empowering Learners' Area

The 'Empowering Learners' area refers to the opportunity to develop in students a proper attitude during the performance of activities. Participants had a very positive perception of the Master's impact in promoting and supporting student interaction and collaboration (92% positive responses). This high percentage is a positive acknowledgment of the methodological approach suggested within the training program, which values the iterative processes of language learning.

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[5] Moreover, even fully online language courses can involve integrated objective-based design, to be achieved through predominantly self-directed activities, and collaborative task performance (Troncarelli 2011).

[6] From at least the 2000s (Chapelle, Douglas 2006), some studies compare experiences in face-to-face, blended, and online courses (Blake et al. 2008) or have presented the state of the art and some possible future perspectives (Brown 2013 and Chapelle, Voss 2016). For Italian L2, some insights into electronic test formats can be found in Torsani e Scistri (2020). A recent study on the role of technological support in formative assessment is La Grassa (2023).

Less positive, however, is the perception of the advancement of competences necessary for setting up environments that, with a focus on maximum usability, can be suitable for students with diverse characteristics (74% positive responses). In language teaching, the role of usability in environments assumes a significant weight that can also guide learners' choices (Gasperini 2021). Usability is a topic of great importance in e-learning, but it is probably still perceived as challenging to fully implement by participants in the Master's program.

3.5 The 'Facilitating Students' Digital Competences' Area

The final set of questions pertains to knowing how to support students in adopting appropriate attitudes to foster this specific category of *key competences* (Council of Europe 2006). Specifically, respondents were asked about the extent to which the Master's program increased the skills necessary to teach correct written and oral interaction in digital environments, and how it influenced the ability to develop activities that require effective utilization of resources. These questions refer to digital competences employed in two different work internet modalities (collaborative and self-learning), both valuable when learning with technologies and in digital environments.

The Master's program contribution to enhancing students' digital competences has been significant for aspects related to communication and collaboration (85% positive responses) and even more so for aspects related to the use of internet resources (97% positive responses). Perceived competence is certainly lower in developing tools (such as tutorials) to guide students to learn more autonomously in digital environments (67% positive responses), a topic to which the Master has indeed assigned a non-central role so far.

3.6 Most Developed Competences

Finally, it seems useful to highlight the two competences that, in absolute terms, have been found to be most useful and effectively developed by the Master, based on the responses with the highest approval. These are:

1. Performing tasks or activities that require learners to use internet resources (Area 'Developing Skills' - 74% of respondents)
2. Creating digital resources (Area 'Digital Resources' - 72% of respondents)

These are two authorial competences that require the ability to develop tasks and digital learning resources and that should play a central role in the teacher's advanced-level digital skills. These competences were addressed in the modules and reused on various occasions during workshops and internships. Therefore, the themes on which the theoretical-practical training provided by the Master's program is primarily focused, as suggested by European documents on language teacher training (cf. *Profile*; *EPOSTL*), are those that show a more evident and usable positive impact.

On the other hand, competences that, although positively evaluated overall, receive the fewest very positive responses fall within the 'Assessment' area:

1. Improving formative assessment (36% of respondents)
2. Collecting and analyzing data emerging from the activities of your students (33% of respondents)

This response suggests the need to emphasize, with even more practical activities in future editions, a topic perceived as undoubtedly important but still challenging to implement.

4. *Conclusions*

A satisfactory alignment is observed between the educational offerings provided by the Master's program and teacher needs related to the development of advanced digital competences. This positive relationship persists over time, as evidenced by the appreciation of the learning path immediately after its conclusion and by what has emerged from the questionnaire administered over time, even years later.

The most positive feedback was associated with the content presented through a theoretical-practical approach, thanks to activities in workshops and internships. Authoring competences (creation and modification of materials and task development), along with the analysis of internet resources and digital environments, were the most valued and applicable in the actual teaching practice.

That being said, it is important to note the ongoing and evolving nature of the teacher training path, which must be approached with a lifelong learning perspective, especially concerning topics related to digital competence. These topics, more than others, quickly become obsolete and require continuous updates. These themes should address not only technical aspects but primarily methodological ones, considering that the primary function of technologies has evolved over time from a communication tool to a service tool and, finally, a tool for developing educational paths in various formats (in-person, blended, entirely online).

Therefore, there is a training program aimed at reaching advanced levels, but true mastery is a continuous process. In the ELIIAS Master, which has an annual duration, it is not feasible to delve equally into all dimensions of competence outlined in *DigCompEdu*. Among the aspects that, based on the received responses, will be important to address in more depth is assessment, a highly complex theme presenting very current pedagogical challenges when digital technologies are involved, especially when aiming to activate a fully online formative assessment cycle (Vedovelli, Machetti 2024).

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