



Self-Evaluation Tool of Digital Skills for Teachers

TECHNICAL NOTE

A PROGRAMME OF:



About ProFuturo

ProFuturo is a digital education programme promoted by Fundación Telefónica and Fundación La Caixa whose purpose is to narrow the world's educational gap by providing high-quality digital education for children from vulnerable environments in Latin America, the Caribbean, Africa, and Asia, seeking to enable teachers, headteachers, and children to develop the necessary skills to face the challenges of the digital era.

About the CIEB

The Centre of Innovation for Brazilian Education (CIEB) is a non-profit organization aiming to promote a culture of innovation in public education by stimulating an ecosystem that generates solutions so that every student can reach their full learning potential. It operates by integrating multiple actors and different ideas with a common goal: to innovate to promote quality, equity, and contemporaneity in Brazilian public education.

About this document

This Technical Note has been translated, revised, adapted and expanded by ProFuturo with the authorisation of the CIEB upon the basis of its original version titled [CIEB Notas Técnicas #15: "Autoavaliação de Competências Digitais de Professores"](#) (recovered on 11 November 2021), drawn up in partnership with the Instituto Natura and the Rede Escola Digital with the consultancy of Maria da Graça Moreira da Silva, a professor at the Pontifícia Universidade Católica de São Paulo. This document presents the Self-Evaluation Tool of Digital Skills and contains a conceptual study of teachers' levels of appropriation of technologies.

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Introduction

A Tool for Teachers to Assess Their Digital Skills

Within the framework of ProFuturo's strategic objectives, **assessing digital skills and their pedagogical appropriation by teachers** is a cornerstone of the aim of training teachers capable of transforming their pedagogical practice to underpin high-quality education that meets the challenges of the digital era. But how do we train teachers capable of structuring and implementing pedagogical practices supported by digital technologies in an innovative and motivating way? Which skills need to be developed to use technology for teaching and learning effectively?

The fundamental keys to answering these questions require, on the one hand, **promoting teachers' reflection** on their own knowledge and use of digital technologies in their daily practice and, on the other, **stimulating their autonomy** for their professional development by providing them with a detailed report on their digital competence profile to develop more effective teacher training.



In this regard, the **Self-Evaluation Tool of Digital skills for teachers** has been developed by the Centre of Innovation for Brazilian Education (CIEB) and adopted and adapted by ProFuturo in open source and four languages (Spanish, Portuguese, English, and French). It consists of 23 questions organized in three areas: pedagogical, digital citizenship, and professional development. Each area is evaluated upon the basis of four skills (12 skills in total). The self-evaluation results establish, through a personalised results report addressed to each teacher, their profile in each area and skill, based on five levels of appropriation: exposure, familiarisation, adaptation, integration, and transformation. The results report also provides guidelines and instructions for teachers to work on their professional development.

But it is not only individual teachers who can benefit from the tool's results. It's also possible to obtain **aggregated information** that can lead to a better understanding of which skills need to be worked on in certain groups, thus **facilitating the planning of training aligned with the teachers' expectations and real professional development needs** by offering training opportunities that effectively transform their pedagogical practices.

In this context, **what we mean by skills** refers to the ability to act effectively in a complex situation that mobilises different knowledge, resources, attitudes, and action and evaluation schemes (Perrenoud, 1999). In the context of Digital Information and Communication Technology (DICT), skills can be translated as the capacity for action that integrates technological, pedagogical, and theoretical tools, resources, interfaces, and knowledge into planning, practice, and reflection on practice in the event of unexpected situations. In this regard, the CIEB partnered with a group of specialists¹, developed a **Digital Skill Matrix** that lists the elements required to enable teachers to make effective use of technology in their teaching activities, in the school context, in their own learning, and their upgrading and professional development process². The matrix was updated in 2018 in partnership with the Natura Institute and the Digital School Network, resulting in the construction of the levels of appropriation of the use of digital information and communication technology for teachers and the proposal for the descriptors that indicate the teacher's progress skill by skill.

The effort to conceptualise and deepen the Digital Skill Matrix began with the central question: **"How to create an instrument that stimulates the progressive development and upgrading of teachers within the context of educational technology?"** The answer to this question led to creating an open self-evaluation tool to identify the knowledge and skills to be stimulated in teachers and to support their ongoing training.

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² The conceptual basis of this matrix can be found in CIEB Notas Técnicas #8: "Competências de Professores e Multiplicadores para uso de TICs na Educação". Available at: [Publicações - CIEB](#). Viewed on 14 March 2018.

1. Experiences Regarding Teachers' Levels of Appropriation of Digital Technologies

To better understand the factors involved in teaching practice and the process of creating different levels of appropriation of the use of digital technologies, several studies and theoretical models used in other countries by researchers, companies, governments, and non-governmental institutions were analysed. Some of them are outlined and summarised below.

1.1 - Apple Classrooms of Tomorrow (ACOT) - United States

Sandholtz, Ringstaff, and Dwyer (1997) devised descriptions of levels of appropriation of digital technologies for elementary school teachers within the framework of the Apple Classrooms of Tomorrow (ACOT) model. The authors analysed the use of technologies by teachers in state schools in the United States participating in ACOT between the 1980s and 1990s to investigate its potential and the changes and impacts over ten years.

The study showed that the **appropriation of technologies is a gradual**, time-consuming process that passes through different levels or stages associated with the teacher's use of technologies for personal and pedagogical purposes. Table 1 shows the main characteristics of the steps or levels mentioned above.

Table 1 - Model devised by Sandholtz, Ringstaff, and Dwyer (1977)

STAGE	DESCRIPTION
Entrance/Exposition	Learning the essentials of the use of the new technologies.
Adoption	Using the new technologies to support traditional education.
Adaptation	Integrating the new technologies into traditional practices, often as a way of increasing the students' productive capacity through the use of word processors, spreadsheets, and image processing programmes.

Source: Adapted from Sandholtz, Ringstaff & Dwyer (1997).

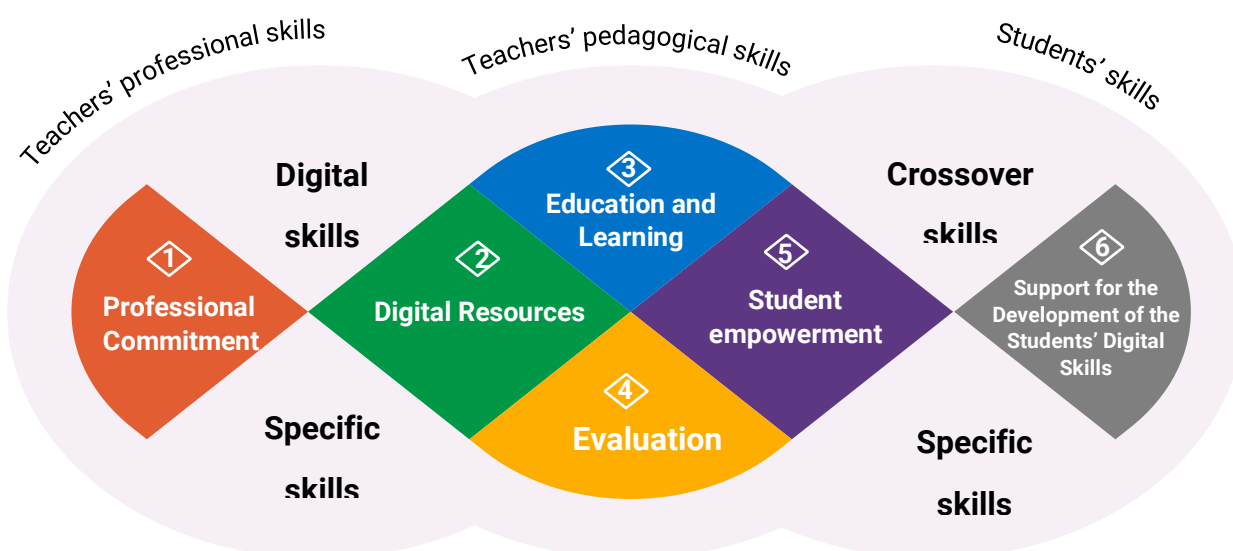
This model suggests a transformation of teaching that moves from more traditional methods of transmitting content to more innovative formats in which students experience more active and dynamic learning situations. In this regard, the changes are more related to teacher training and professional development.

1.2 - European Framework for the Digital Competence of Educators (DIGCOMPEDU) - European Union

Developed in 2017 to guide the member states of the European Community through the use of digital technologies to improve and innovate both education and training. The Digital

Competence of Educators (DigCompEdu) model comprises **six areas**, as summarised in Figure 1.

Figure 1: Overview of the DigCompEdu framework



Source: European Commission (2017, p.19).

Based on these **six areas**, **22 skills** and **six progressive stages of the appropriation of the ICTD by teachers** are outlined, as inspired by Bloom's taxonomy, ranging from the initial level to the innovative level. In this perspective, in the first two stages, Novice/Beginner (A1) and Explorer (A2), the teacher assimilates new information and develops basic digital practices. In the intermediate stages, Integrator (B1) and Expert/Specialist (B2) apply the knowledge acquired, seeking to expand and improve practices. In the more advanced ones, Leader (C1) and Pioneer (C2), the teacher applies and shares his/her knowledge, analyses existing practices, and develops new ones. Table 2 shows the stages proposed by DigCompEdu and their characteristics.

Table 2 - Stages of the DigCompEdu Model

STAGE	CHARACTERISTICS
Novice/Beginner (A1)	They are aware of the potential of digital technologies to improve their pedagogical and professional practices. However, they have minimal contact with technologies and use them mainly for preparing activities and for organisational administration or communication. They need guidance and encouragement to expand their repertoire and apply their digital skills to the pedagogical area.
Explorer (A2)	They are aware of the potential of digital technologies and are interested in exploring them to improve their pedagogical practices. They've started to use digital technologies, but they don't follow a consistent approach. They need encouragement, ideas, and inspiration, such as examples and guidance from their colleagues.

Integrator (B1)	They experiment with digital technologies with various contexts and purposes and integrate them into their practices. They use the technologies creatively to enhance different aspects of their professional development. They seek to expand their repertoire of practices, but they're still learning which tools work best in each situation and how to match the technologies with the pedagogical strategies and methods. They need time for experimentation and reflection complemented by collaborative encouragement and the exchange of knowledge to become specialists.
Expert (B2)	They use a variety of technologies with confidence, creativity, and criticality to enhance their professional activities. They select technologies according to the situation and try to understand the advantages and disadvantages of the different digital strategies. They're curious and open to new ideas, recognising that there are many things they haven't yet experimented with. They use experimentation to expand, structure and consolidate their repertoire of strategies. They're the backbone of any educational organisation when it comes to innovative practices.
Leader (C1)	They have a consistent and comprehensive approach to using digital technologies to improve their pedagogical practice. They have a wide repertoire of strategies using digital technologies, and they choose the most appropriate one, depending on the situation. They continuously reflect on and develop their practices, exchange with colleagues, and update new possibilities and ideas. They're a source of inspiration, and they share their knowledge.
Pioneers (C2)	They question the adequacy of contemporary pedagogical practices, of which they are leaders. They're concerned about the constraints and disadvantages of these practices and feel motivated to innovate further in education. They experiment with highly innovative and complex digital technologies and/or develop new pedagogical approaches. In addition to leading innovation, they're role models for other teachers.

Source: European Commission (2017, p. 30).

What's new concerning the first model presented is that DigCompEdu includes cross-cutting skills related to the role of teachers as facilitators of the process of developing the students' digital skills.

1.3 - The Pasinato and Vosgerau Model - Brazil

Based on the specificities of the Brazilian context, Pasinato & Vosgerau (2011) propose a model for integrating technologies into the school environment, containing many of the elements proposed in the references mentioned above. This model seeks to analyse the school as a whole and argues that "the proposal for indicators favours the projection and execution of educational projects and contributes to individual self-knowledge and the conditions for integrating technologies in the school" (Pasinato & Vosgerau, 2011, p. 15889).

In their research, the authors identified the levels of use, interaction, and resources used by the different players in the school community (teachers, students, and school management). The descriptions of the stages and their characteristics are displayed in Table 3.

Table 3 - Proposal for TDIC Integration Indicators

STAGE	CHARACTERISTICS
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0 - Non-use	They don't make use of digital technologies in their classes.
1 - Familiarisation	They begin to have contact with technology, but they have no experience, and they aren't interested in using it in the classroom.
2 - Awareness	They're aware of the importance of using technologies, and they have some understanding of the use of computers and some software, using them to complement their lessons.
3 - Implementation	They move on to thinking about learning by using a technological medium. They know how to use technology and help their colleagues and students.
4 - Integration	They use technology and integrate it into the curriculum for the development of the teaching process and the students' learning. Their teaching plans provide students with access to the computer to aid the continuity of the pedagogical work outside the classroom.
5 - Evolution	Technology is already fully integrated into the teachers' planning. They manage to relate the curricular contents to the students' social context in an inter-disciplinary manner, using technology as a resource for producing knowledge.

Source: Pasinato and Vosgerau (2011, p. 15887).

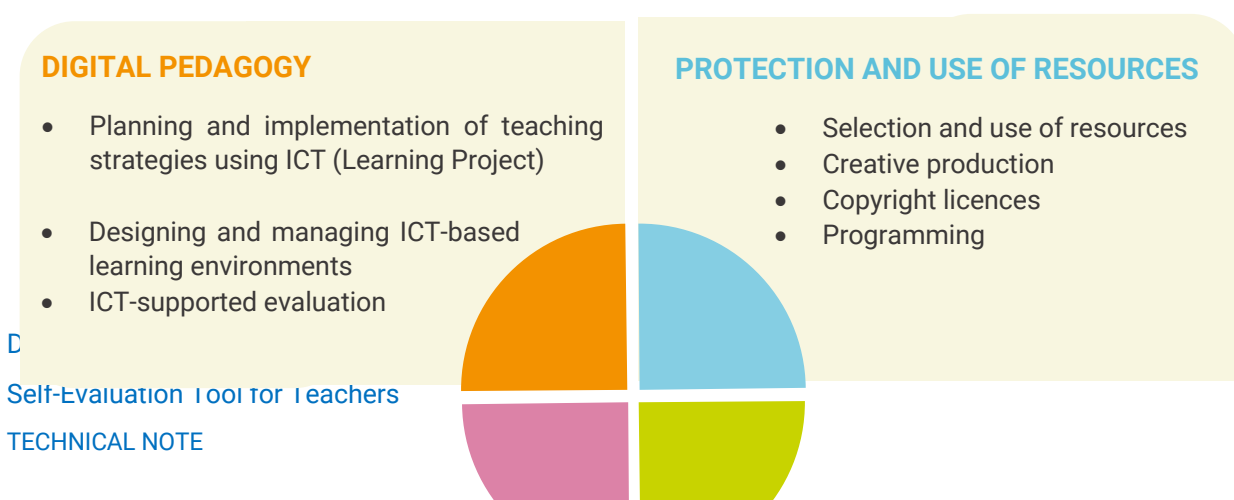
Research on teachers' digital skills is still at an early stage. Therefore, researchers and civil society organizations collaborate with governments to construct new tools to support teachers.

1.4 - Mentoring Technology-Enhanced Pedagogy Tet-Sat Self-Evaluation Tool (Mentep) - European Union

Unlike the three previous references, TET-SAT proposes skills organised in dimensions with levels of progression and goes further by also offering a free online self-evaluation tool. By **promoting teachers' self-reflection**, it provides individualised feedback to support skill development processes based on the identification of their training needs. The tool assesses **four dimensions of digital pedagogical skills**: 1) Digital Pedagogy, 2) Digital Use and Production, 3) Digital Communication and Collaboration, and 4) Digital Citizenship.

The dimensions have 15 sub-areas and 30 skills, as shown in Figure 2.

Figure 2: Dimensions and sub-areas of TET-SAT



TET-SAT

COLLABORATION AND COMMUNICATION

- Communication using technology and social media
- Online participation
- Collaboration with ICT
- Collaboration through ICT

DIGITAL CITIZENSHIP

- Online behaviour
- Digital identity management
- Device protection
- Health and the environment

Each subarea includes one or more skills described by five levels of progression: Inexperienced, Beginner, Autonomous, Experienced, and Specialist.

TET-SAT is the most comprehensive model that's been found, it's translated into 16 languages, and it runs a community of cooperation and research around it, generating studies based on the results and launching new opportunities for improving the digital skills of educators in Europe.

2. Self-Evaluation of Teaching Skills

There are several ways of evaluating skills, and one of them is self-evaluation. Self-evaluation itself is one of the skills³ present in the matrix developed by the CIEB, as it's understood as fundamental for transforming practices.

The studies on teacher⁴ training display the different ways in which teachers learn and become more proficient. The most effective ones mentioned include peer learning within the context of pedagogical practices, as often manifested in communities through sharing practices⁵ (Marialva & Silva, 2016). For this purpose, **teachers must have self-evaluation tools that enable them to be autonomous in constructing their self-development.**



We can also mention the following benefits of using self-evaluation for teachers' professional development:

- **Effectiveness of the training:** when teachers objectively know where their challenges and learning needs lie, the search for the development of opportunities becomes clearer and more effective, either for the teacher who wants to be trained or to inform the educational managers responsible for the teachers' development, so that they can propose and carry out truly significant training.
- **The professionals' protagonism and autonomy:** by enabling teacher self-evaluation, teachers are allowed to develop themselves and to seek more personalised and,

³ "Being able to use ICT to evaluate their teaching practice and implement actions to improve it."

⁴ "Teacher training for the appropriation of ICT: Rethinking the Role of Communities of Practice." Available at: <<https://cieb2red.page.link/TIC>>. Recovered on 14 March 2018.

⁵ Sharing is one of the skills of the CIEB matrix: "Being able to use technology to participate and promote participation in learning communities and peer-to-peer exchanges."

therefore, more meaningful training seminars. This requires the teachers to be open to reflect on their practices and to understand the role they play in their professional journey.

- **Balance between cumulative and formative evaluations:** when evaluations of state school teachers take place, usually conducted by the school managers and governmental education networks and occasionally by their peers, the evaluations are frequently cumulative. They don't involve teachers and are focused on the students' learning outcomes. A self-evaluation is intrinsically formative, as it provokes intense self-reflection regarding one's own skills (Airasian & Gullickson, 1994).

When the self-evaluations are conducted by the teachers in partnership with the managers, **the aggregated results provide essential data to enable the education authorities and schools to plan personalised training focused on the different learning needs of the teaching networks.**

The Digital Skill Matrix, the research into the models of the teachers' levels of technology appropriation and the importance of professional self-evaluation, have contributed significantly to developing the conceptual bases for the Digital Skill Self-Evaluation Tool presented below.

2.1. Digital Skill Self-Evaluation Tool for Teachers

Using the structuring of this robust conceptual basis provided by the Digital Skill Matrix and the references presented in this document, the **CIEB developed an online tool for self-evaluating teachers' digital skills.** This tool has been **adopted and adapted by ProFuturo in four languages** (Spanish, Portuguese, English, and French) **to ensure that a large majority of teachers worldwide, whether or not they are participants in the programme or otherwise, can have access to reflection and self-development.**

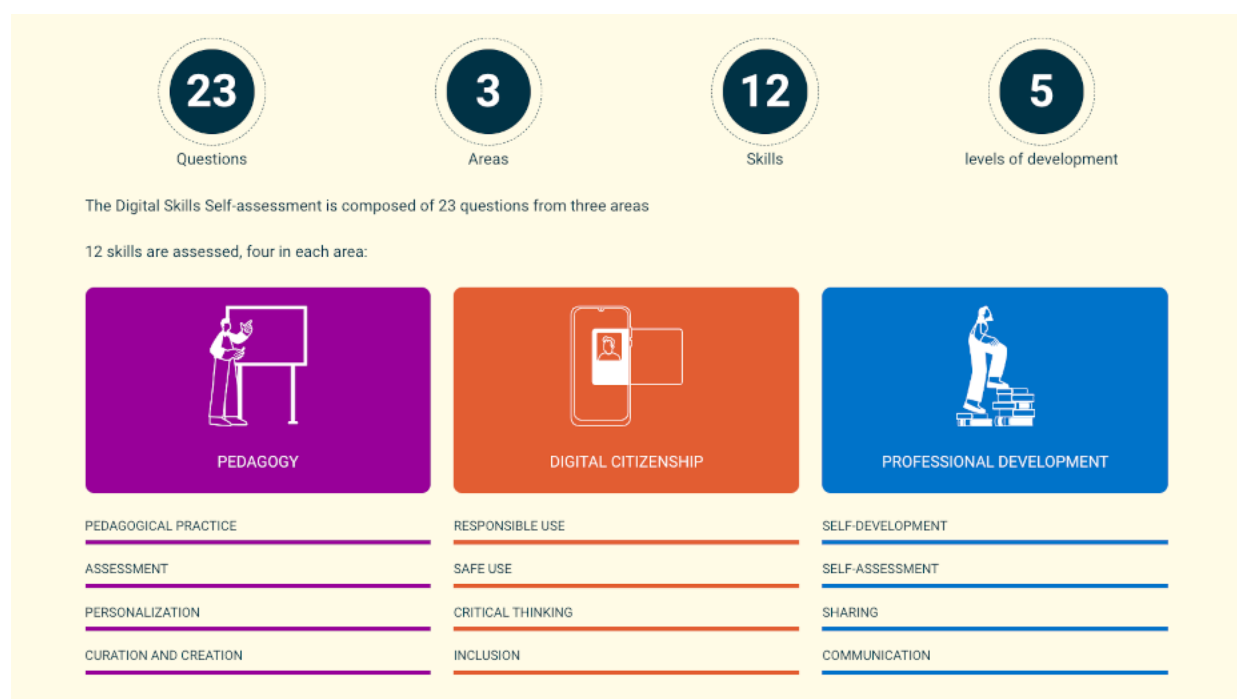
The self-evaluation tool has two main goals:

1. **To promote teachers' reflection** on their own knowledge and use of digital technologies; and
2. **To inform the education networks** of the aggregate profile of teachers' digital skills to develop more effective teacher training.

Under these two goals, the tool can stimulate teachers' autonomy to aid their professional development and provide the managers and administrators of educational networks with aggregated data to contribute to more assertive planning of courses and teacher professional development programmes.

The tool is a self-administered questionnaire consisting of 23 questions distributed in three areas and 12 digital skills, as shown in Figure 3.

Figure 3: Areas and skills of the digital skill self-evaluation tool



Source: [Digital Skill Self-Evaluation \(profuturo.education\)](https://profuturo.education/). Recovered in October 2022

To assess the development of each skill, five levels of appropriation and their respective descriptors were created to display the teacher's progression through the skill, as shown in Table 4.

Table 4 - Levels of Technology Appropriation

EXPOSITION	When there is no use of technologies in the pedagogical practice or when the teacher requires support from third parties to use them. And when the use is only personal. The teacher identifies the technologies as instruments, not as part of the digital culture.
FAMILIARISATION	The teacher begins to know and use technology in his/her activities. He/she identifies and perceives the technologies as support for the teaching work. The use of technology is focused on the teacher.
ADAPTATION	Technologies are used regularly and can be integrated into the planning of pedagogical activities. The teacher identifies the technologies as complementary resources for improving the teaching and learning process.
INTEGRATION	The use of technology is frequent in planning the activities and the interaction with the students. The teacher works with technologies in an integrated and contextualised way in the teaching and learning process.
TRANSFORMATION	The teacher uses technologies in an innovative way, sharing them with colleagues and carrying out collaborative projects that go beyond the school, thus displaying digital maturity. The teacher identifies technology as a tool for social transformation.

Source: CIEB, Instituto Natura and Rede Escola Digital

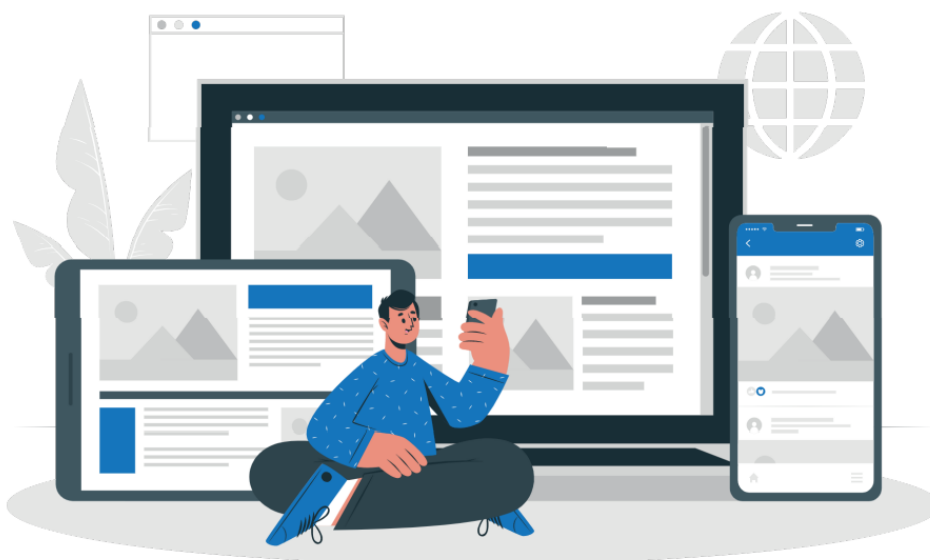
2.2. Descriptors of the Levels of Appropriation of the Digital Skills

The descriptors show digital skills development based on the five levels of appropriation outlined above. Similarly, the digital skill appropriation levels can be described based on three aspects:

3. **Fluency in the use of digital technologies.** Evidence of the use of technologies within the personal and pedagogical context.
4. **Integration of digital technologies into the curriculum.** Evidence of the use of technologies aligned with the guiding curricular documents of the education network and the school.
5. **Student empowerment.** Evidence of the students' active participation in the education and learning processes using technologies.

All three aspects are included in the Pedagogical and Digital Culture area. Only the Fluency aspect exists in the use of digital technologies in the Professional Development area.

Based on the three aspects defined for the descriptors, the levels of appropriation, and the descriptive elements of these levels, we can construct the matrix of digital skill descriptors that support the self-evaluation tool, as shown below.



2.3. The Matrix of the Teachers' Digital Skill Descriptors

As mentioned above, the matrix containing the descriptors displaying the digital skills development based on the five levels of appropriation is presented below. It's important to consider that the descriptors of a level within a skill entail the presence of the descriptors of the previous level. We should also emphasise that separate tables are presented for each skill within each area to facilitate the presentation of the matrix.

Summary of the aspects of the levels

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
The use of digital technologies is centred on the instrumental use of the tools.	They make basic or assisted personal use.	They regard digital technologies as instrumental and don't identify themselves as part of the digital culture.
FAMILIARISATION		
The use of digital technologies is centred on teaching.	They start to learn about and use digital technologies in their activities. Occasional use.	They regard digital technologies as support for the teaching activities, such as searching for resources and/or information to prepare their lessons.
ADAPTATION		
The use of digital technologies focuses on the students' learning process in the classroom.	It's characterised by frequent use, although it isn't integrated into the planning of the curricular component.	They regard technologies as complementary resources to enhance the teaching and learning process.
INTEGRATION		
The use of technology is centred on the development and learning of each student.	It's characterised by planning activities with digital technologies, interaction with peers, and the educational community.	They regard digital technologies as tools integrated into the teaching and learning process, meaningful and contextualized.
TRANSFORMATION		
The use of digital technologies is centred on empowering actions involving the educational community.	They innovatively use digital technologies, share with peers, and carry out collaborative projects beyond the school.	They regard digital technologies as key to the teaching strategies and the students' learning activities. They consider technologies as a form of empowerment, social transformation, and a tool for exercising digital citizenship.

Pedagogical Area - Pedagogical Practical Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't know, use, or need help to use digital technologies in their pedagogical practice with students.	They don't know, use, or need help to use digital technologies in the teaching strategies.	They don't know, use, or need help to use digital technologies in the professional area. They use communication technologies such as email and instant messaging applications in the personal area.
FAMILIARISATION		
They use digital technologies to present content to their students (PPT, websites, videos). For example, they may use an IT lab, projectors, or another resource provided by the school in addition to the contents.	They select digital technologies to improve the teaching or enhance what they're already doing. They use digital technologies to illustrate or demonstrate concepts and contents in presentations, website browsing for student consultations, and virtual environments.	They start to use digital technologies non-systematically in educational strategies to improve their lessons. They use digital technologies to search for content and prepare their lessons.
ADAPTATION		
They use digital technologies in student participation activities, such as games, educational software, and research projects.	They select and use digital technologies in activities with the students, which may or may not be directly related to the subject of the curricular component.	They understand and use production tools (text editors, templates, presentations) and the multimedia projector with autonomy. They know how to browse, upload and download materials upload and download materials from the internet. They also use games, educational software, and learning environments. They use resources in a non-systematic way (once or twice a month).
INTEGRATION		
They use digital technologies in activities that involve the active participation of students, encouraging them to be authors, build their knowledge and communicate in different media.	They select and perceive the use of digital technologies in their educational plan in a way that is integrated into the curricular development.	They understand and use digital technologies and research tools, software, and projects that improve the teaching practice and involve interaction with their peers and the students. Frequent use (one continuous semester).
TRANSFORMATION		
They engage students in collaborative, individual, and shared projects using digital technologies.	They develop projects that involve the community or other schools. They create, publish and share pedagogical strategies with digital technologies. They open a debate on the use of digital technologies integrated into the curriculum in the pedagogical-political project and other curricular documents.	They're fluent in the use of digital technologies, continuously employing them in curriculum-related activities with the students and supporting the training of their peers. They use technologies in projects that impact the social reality of the school environment and the educational community.

Pedagogical Area - Evaluation Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't understand digital technologies or need help from someone to use them for evaluation and guidance of students learning.	They don't understand digital technologies or need help from a colleague to evaluate and support students learning.	They don't understand technological resources or need help from a colleague in the evaluation process.
FAMILIARISATION		
They use evaluation data recorded in educational software to construct feedback to support the students in the recovery or reinforcement of learning.	They employ digital technologies ad hoc to support the teacher's student evaluation practice. They use online questionnaires previously prepared by third parties, educational software with practices, or evaluative educational resources.	They begin to become familiar with digital technologies to evaluate and monitor the students' activities. They seek information, examples, and content to prepare their evaluations and use technological tools to facilitate or speed up their practice.
ADAPTATION		
They use digital technologies to record the individual students' activities and provide feedback. They analyse the students' data for each teaching period (bimester, trimester) to review their practice. They use educational software for evaluating the students.	They use digital technologies in the evaluation process and accompany the students' activities. They integrate virtual learning environments, pedagogical management systems, simulations, and other resources to facilitate students' formative evaluation into their pedagogical practice.	They know and use technological resources and tools in evaluation strategies. They use software and technological systems with autonomy for recording and retrieving the students' data (learning management systems, educational software, tools for creating practices).
INTEGRATION		
They select and use digital technologies to involve students in the processes of evaluation and monitoring their own learning pathway. They use tools that enable students' self-evaluation.	They devise evaluation activities based on digital technologies following the goals of the education plan. They frequently evaluate (once or twice a month) what's been planned, what's been achieved, and the students' learning journey. They store the students' activities (portfolios, virtual environments) and regard them as part of the evaluation process.	They use digital technologies to record the individual students' activities and provide feedback to them. They develop strategies to evaluate the learning process and the performance of the students and establish technological resources to allow their active participation in the evaluation process, such as portfolios and reflective diaries in digital environments.
TRANSFORMATION		
They consider the analysis of the student's trajectory and the self-evaluation as part of the evaluation. They stimulate the students' autonomy in diagnosing and evaluating their own learning. They use automated tools to provide students with instant feedback.	They look for and employ new tools and strategies to evaluate the activities carried out by the students. They use formative evaluations of the students to review their planning and adjust their practice in keeping with the curricular development. They include the topic of the evaluation in the debate about political-pedagogical projects with their peers. They reflect on the characteristics of the indicators used by their teaching network for the assessment.	They continuously develop new evaluation formats by using digital technologies. They consider multiple contexts for the evaluation.

Pedagogical Area - Personalisation Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't understand or need help from a colleague to create personalised learning experiences.	They don't understand digital technologies or need help from a colleague in diagnosing and adapting the activities for the students.	They don't understand or need help from a colleague to identify the students' needs and use digital technologies.
FAMILIARISATION		
They use digital technologies to adapt some activities to the needs of students with disabilities, such as enlarging text fonts for students with visual impairment.	They use digital technologies on an ad hoc basis to prepare differentiated lessons according to the group's needs without focusing on integrating digital technologies into the curriculum.	They can identify learning needs and use digital technologies to search for content and information to offer differentiated activities to the students.
ADAPTATION		
They use digital resources to implement activities developed by others to enable the students to do them in class or at home, following the curricular component.	They regularly use content, software, and technologies that are also inclusive. They make curricular adaptations according to the student's characteristics.	They select inclusive digital contents and technological resources to complement the diagnosis and adaptation of learning experiences and address the needs of some students or groups of students.
INTEGRATION		
They create activities based on digital technologies, involving different media and tools in keeping with the students' context, interest, and profile. They anticipate the students' difficulties and propose solutions.	They develop their teaching plan using digital technologies and the systematic accompaniment of the students and create learning activities that meet the needs of each student.	Based on the diagnosis, they select, develop and use diverse digital technologies, contents, and technological resources that meet the learning characteristics of each student.
TRANSFORMATION		
They use digital technologies with the students to outline their individual and collective learning plans and pedagogical trajectories, respecting individual paces, characteristics, needs, and interests.	They plan and integrate digital technologies into the curriculum for the personalisation of the education according to the students' diagnoses. They design, implement and involve the school at an institutional level in the reflection and creation of strategies to personalise the learning that is integrated into the political-pedagogical project.	They select, develop, and frequently use automated or partially automated digital technologies to stimulate the students' autonomy to get to know themselves and identify their individual characteristics.

Pedagogical Area - Curatorship and Creation Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't involve the students in searching for, selecting, or creating digital content.	They don't plan to use digital technologies for curation or the creation of digital resources. They use digital content downloaded from the internet but without search operators or objective criteria.	They don't understand or use basic search or digital content creation resources or need help from a colleague to use them.
FAMILIARISATION		
They use previously selected digital resources for demonstrations, activities, etc. They encourage the students to search for and select content and use text editing and presentation tools to support them in their school work.	They select and use digital resources in a non-systematic way to create texts and presentations and make their lessons more engaging.	They occasionally use digital technologies to search for digital resources on the web to improve their lessons.
ADAPTATION		
They introduce the students to pages, games, simulations, and other resources to support them in their school work. They involve the students in creating digital content such as audio and video.	They create or search for and use digital resources for use in their lessons in a way that's integrated into the development of the contents of the curricular component.	They understand and regularly use digital technologies to search for and select digital resources in repositories and on the web, using search mechanisms to identify resources related to their teaching plan.
INTEGRATION		
They involve the students and teach them how to select digital content based on criteria and how to create, co-create, edit, and perform re-mixes.	They plan and use the digital resources according to the students' profiles. They create and/or re-mix resources following the students' needs. They employ objective criteria to plan and analyse the educational resources related to the curriculum.	They understand, use and frequently search for new ways of researching, selecting, and analysing digital resources with objective criteria (type of operational system, curricular component, possibility of free use and re-mixes, etc.) in specific repositories for education. They use open educational resources.
TRANSFORMATION		
They use school projects to teach the students to select, co-create and re-mix contents, computational programs, and applications in various formats.	They create and organise the digital resources to share them with the students and teachers. They teach their peers how to curate and create digital resources.	They create and co-create digital resources in different formats daily, performing re-mixes, publishing them, and sharing them in repositories. They define evaluation criteria for the digital information and resources and the information sources. They use open data and free and open educational resources.

Digital Citizenship Area - Responsible Use Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't understand or need help from a colleague to guide the students in the responsible use of digital technologies.	They don't understand or need help from a colleague to integrate responsible use of digital technologies into the curricular component.	They don't understand or need help from a colleague to use digital technologies responsibly.
FAMILIARISATION		
They present content and propose thematic projects on the responsible use of digital technologies to the students.	In a timely manner in the classroom, they address the topic of responsible use of digital technologies, searching for digital content, and preparing presentations on the subject.	They understand the importance of responsible use of digital technologies. They search for digital content and resources to support their lessons on the subject.
ADAPTATION		
They teach the students strategies for responsible use of digital technologies and encourage them to communicate ethically in the different digital environments.	They organise specific activities to address the responsible use of digital technologies during the school year, which may or may not be directly linked to the teaching plan of their curricular component.	They understand the importance of responsible use of digital technologies. They also use resources and strategies that address the ethical and legal use of technologies in the classroom.
INTEGRATION		
They involve the students in debates on digital technologies' social, economic, and ethical issues. They incorporate the responsible use of digital technologies into routine activities with the students, promoting the creation, the sharing of materials, and the development of responsible digital citizenship.	In the activities of their curricular component, they plan the responsible use of digital technologies in a manner integrated into the curriculum.	They learn how to manage personal and professional profiles in digital environments. They understand the importance of involving the students in the responsible use of digital technologies and activities that promote reflection on the subject.
TRANSFORMATION		
They share experiences in communities that help students connect online with different environments and people and exercise conscious and ethical interaction and debate.	They discuss responsible use of digital technologies with their fellow teachers for inclusion in school policies. They seek collective actions to raise awareness of the ethical and responsible use of digital technologies among the school community.	They have advanced knowledge of using technologies responsibly, ethically, and civic way. They develop and disseminate materials to train their fellow teachers and other school community members.

Digital Citizenship Area - Critical Use Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't promote critical reading or interpretation of digital content among the students and need help to do so.	They have difficulties integrating digital media content and information into their lessons critically and reflectively. They need help to do so.	They don't understand or need help from a colleague to read and interpret the information available in digital media critically.
FAMILIARISATION		
They present content to the students to select websites and publications and identify reliable sources. They analyse the contents of the websites in class and promote the conscious use of digital technologies, such as not sharing news without verifying the source.	They conduct specific activities in the classroom addressing the importance of the analysis, interpretation, and veracity of the information available in digital media.	They use digital technologies to search for resources or content on the critical interpretation of information in digital media.
ADAPTATION		
They prepare activities for the students to promote the critical reading of information, understanding its intent, audience, complexity, and impact on the community's life.	They work on the subject in class and seek to promote reflection on the critical use of technologies related to the contents of their curricular component.	They select and use digital technologies, content, and resources reflectively and consciously.
INTEGRATION		
They conduct activities to enable the students to search for, interpret and produce digital content and resources in different environments. They involve the students in dialogue about their practices using technologies, reflection, and sharing their learning.	They plan activities that involve reading and interpreting information and bring an additional element to the curriculum based on the interpretation and critical use of digital technologies.	They know how to research, interpret and produce digital content and resources based on objective criteria critically and reflectively.
TRANSFORMATION		
They involve their students in creating spaces for dialogue and exchanges of experiences, ideas, and opinions, encouraging them to adopt a critical attitude towards digital technologies' roles and impacts on the economy, politics, and social life.	They perform a critical reading of the world of digital culture and incorporate the critical use of technologies into the school's guiding documents.	They are fluent in using digital technologies that help search for, interpret, produce, and share information in various formats, such as the creation of social media pages and collaborative groups involving teachers, students, and the community.

Digital Citizenship Area - Safe Use Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't know how to or need help to guide the students towards using digital technologies safely.	They don't know how to or need help to use digital technologies safely in their pedagogical practice.	They don't know how to or need help to safely use digital technologies.
FAMILIARISATION		
They present content and propose thematic projects to the students about the risks to which they may be exposed and suggest that they take preventive safety measures and use digital technologies with care to not jeopardise their physical health, social, or school life.	They prepare specific lessons on the need for safety in accessing and using digital technologies, searching for content, and preparing presentations on the subject.	They understand the importance of using digital technologies safely, even if they have only a superficial understanding of how to protect themselves.
ADAPTATION		
They teach the students strategies for the safe use of technologies, e.g., protecting data and creating and activating passwords so that other people can't use their personal devices and accounts.	They discuss the topic in class and seek to articulate reflections on the safe use of digital technologies with the contents of their curricular component.	They are aware of the risks of unsafe use of digital technologies and apply their knowledge to their actions. They look for learning communities and successful experiences to explore the subject in greater depth.
INTEGRATION		
They reflect with their students and discuss strategies for recognising the impact that participation in digital culture has on their lives, teaching them to identify pitfalls and situations of discomfort or risk and encouraging them to create materials on the subject.	They integrate the topic of safety in using digital technologies into the teaching plan of their curricular component.	They understand, incorporate and know how to steer strategies towards promoting safe and responsible use of digital technologies.
TRANSFORMATION		
They involve the students, parents, and teachers in activities on the safe use of digital technologies, promoting the development of methods and strategies for self-regulation proactively.	They review or implement policies and strategies to ensure the safe use of digital technologies at school.	They have advanced knowledge of the safe use of digital technologies. They address the topic with the students by reflecting on the potential risks and harm of using digital technologies unsafe and unhealthy.

Digital Citizenship Area - Inclusion Skill

Student empowerment	Integration of the technologies into the curriculum	Fluency in the use of technologies
EXPOSURE		
They don't understand or need help from a colleague to use technological resources to empower the students following their individual needs, promoting inclusion and educational equity.	They don't understand or need help from a colleague to plan or develop inclusive activities using digital technologies.	They don't understand or need help from a colleague to use technologies to promote inclusion and equity in education.
FAMILIARISATION		
They discuss the topic of inclusion with the students in talks and presentations.	They select tools and resources to support their teaching activities with students with disabilities or learning difficulties, albeit without curricular integration.	They understand the importance of the inclusive use of digital technologies in their pedagogical practice and know how to make specific adaptations in class.
ADAPTATION		
They use technology to conduct activities with adaptations for different groups of students and promote actions to enable the students to recognise and learn to respect individual learning differences.	They select and use accessible and inclusive software and digital resources to contribute to the teaching and learning of the contents of the curriculum component.	They use digital technologies, assistive technologies, and specific software to prepare lessons for students with disabilities.
INTEGRATION		
They involve the students in reflection, debate, and the authorship of inclusion and educational equity projects. They encourage the students to learn about their own learning characteristics.	They plan their curricular component considering activities to facilitate the participation of all the students and access to information in an autonomous manner.	They select, use and develop digital technologies, digital resources, and strategies to promote inclusion and equity in the education of all the students.
TRANSFORMATION		
They involve the students in the search for solutions and the construction of inclusive content and tools and integrate them into the debate on the subject. They incentivise the students' self-knowledge and encourage them to use digital technologies to overcome difficulties according to their learning characteristics.	They involve the school community in reflecting on the use and impact of digital technologies inclusively and equitably. They include the subject in the political-pedagogical project following the curriculum.	They use technological resources to promote the students' autonomy, inclusion, and educational equity and help other teachers to perform inclusive practices.

Professional Development Area

SKILL	SELF-EVALUATION	SELF-DEVELOPMENT
Aspect	Fluency in the use of technologies	Fluency in the use of technologies

Exposure	They don't understand or need help to use digital technologies to reflect on the improvement of their planning and teaching practice at the end of the school year.	They don't understand or need help to use digital technologies for their ongoing training.
Familiarisation	They use digital technologies once per semester for recording, recovering, and editing their planning and the activities carried out.	They use digital technologies to participate in teacher training offered by the school administration or the education network.
Adaptation	They frequently use digital technologies to record and reflect on their teaching practice, based on what they have planned previously and the students' results. They make changes to their planning based on the self-evaluation data.	They use digital technologies to search for and participate in remote or hybrid further education activities in addition to those offered by the school administration or the education network. They know about and search for sources of information for professional updating related to their curricular component in electronic journals and reference portals.
Integration	They systematically use digital technologies to analyze the students' results and their teaching practice to complement their self-evaluation and implement an action plan for improvement. They talk to other teachers about their pedagogical approaches to seek support and reflect on their professional development.	They search for, select, and evaluate new sources of information and in-person, hybrid, and remote learning processes critically and strategically to improve and adapt their educational practices and personal and professional development. They systematically plan spaces and times for professional development. They seek to integrate what they've learned into the curriculum and their practice.
Transformation	They use digital technologies to develop procedures and instruments to evaluate and analyse the results of their pedagogical practices and those of other teachers. They draw up action plans together with their colleagues to improve the teachers' practices and involve the students in evaluating the teaching.	They search for and participate in vocational training courses both autonomously and in those indicated by their educational network. They produce and share training materials in learning communities and on blogs and websites. They involve other colleagues and the educational community in study groups, debates, and reflections on the school's development. They insert the topic of continuous education into the political-pedagogical project.

Professional Development Area

SKILL	COMMUNICATION	SHARING
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Aspect	Fluency in the use of technologies	Fluency in the use of technologies
Exposure	They don't know about, don't use, or make little use of digital technologies to maintain active, systematic, and efficient communication with the players in the educational community.	They don't know about or need help to use digital technologies for exchanges with peers in learning environments.
Familiarisation	They start to learn about and use digital technologies for communication. They use technological tools offered by the school or education network for communication with the school management, other teachers, students, and heads.	They occasionally access and share digital content and resources in learning communities offered by the school or the education network.
Adaptation	They know about and use digital technologies to communicate and share knowledge in virtual environments. They use technologies to interact (send and receive communications) with their fellow teachers and students.	They know about and use technological tools to share ideas and productions. They encourage the participation of their fellow teachers in learning communities. They autonomously seek new digital environments for sharing.
Integration	They know about, use, and integrate digital technologies to communicate information, content, and knowledge into the curriculum by using a wide range of media and tools. They systematically plan and use digital technologies interactively and ethically in their teaching practice.	They know about, use, and search for new technological tools to share ideas, practices, and productions aligned with the curriculum. They identify, select and share information, media contents, and knowledge in virtual environments in accordance with the target audience.
Transformation	They know and use digital communication tools for exchanges of experiences with other educational units, as well as the school community and the parents and heads. They involve and engage the students in creating and using digital technologies aligned with the curriculum to maintain active and efficient communication. They support other teachers in communication with the use of digital technologies.	They know about, use, and create technological resources and virtual communities according to the context, target audience, and objectives. They systematically promote proposals and projects that involve exchanges with other teachers, students, and communities beyond the school. They include participation in learning communities and peer-to-peer interactions in the pedagogical-political project and other school documents.

3. Self-evaluation results reports

3.1. Individual self-evaluation results report for teachers

After completing the self-evaluation questionnaire, the teachers receive the **Results Report**, a **personalised feedback** indicating the **level of appropriation regarding their knowledge and use of digital technologies**. The results report **also contains orientations and guidelines to incentivise the central role of their professional development** to give them more autonomy in the quest to improve their practices and accompany their progress over time.

Figure 1 - Example of a teacher's results report: Consolidated results by areas

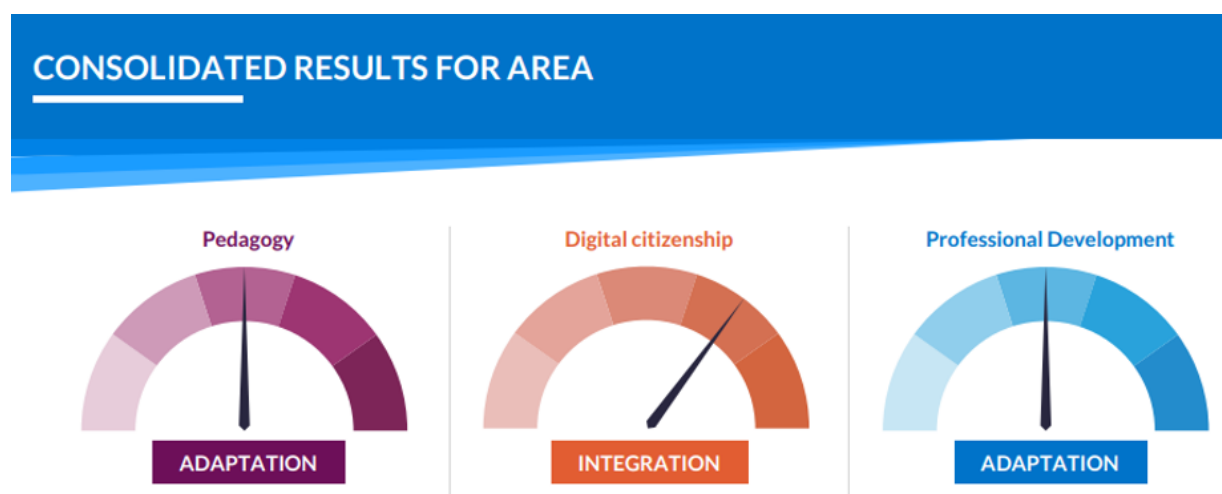


Figure 2 - Example of a teacher's Results Report: Results by areas

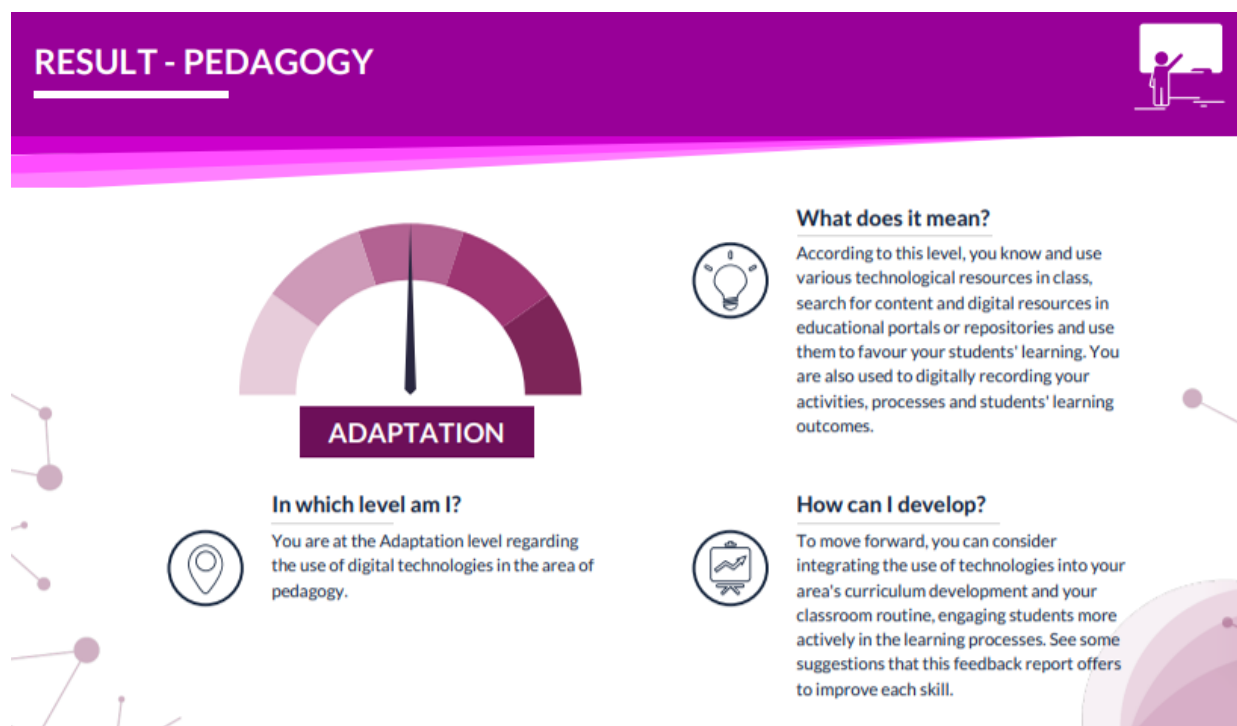


Figure 3 - Example of a teacher's Results Report: Results by skill



3.2. Self-Evaluation Aggregate Results Report

Public education networks, private educational organisations, civil society organisations, and other research and cooperation institutions that use the tool can access a dashboard with aggregated, anonymous, and nominal data and information on their teachers' appropriation levels and use of technologies. This **aggregated feedback can contribute to the planning of continuous training programmes and courses to promote the teachers' professional development** while taking digital skills to another level.

To build this aggregated view, every data associated with the user, the usage, and the self-evaluation results are collected and stored in a database. The data are then extracted, processed, and aggregated daily to present the information on the Teacher Self-Evaluation Tool dashboard.

The tool's dashboard is divided into three sections, as outlined below:

SUMMARY

It contains an overview of the number of self-evaluations carried out in each country and the dates these self-evaluations have been carried out. It also includes information that can characterise the teachers who use the tool by age range and level of education attained and distribution by subject areas taught, among other variables.

Figure 4 - View of the Summary section of the tool's dashboard



Figure 5 - View of the Summary section of the tool's dashboard (II)

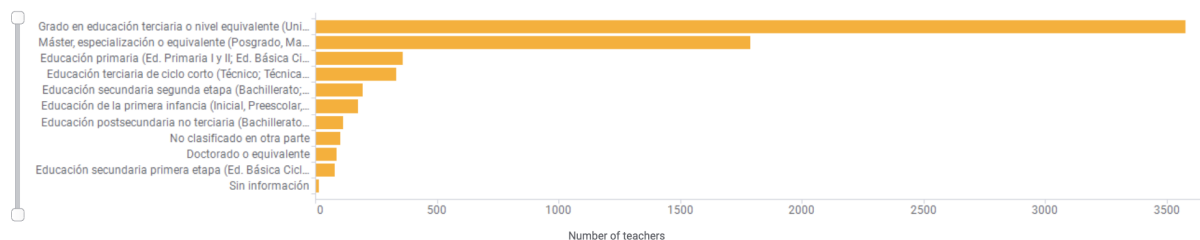
Distribution of teachers by age



Distribution of teachers by gender



What is the most recent level of education you've attained?



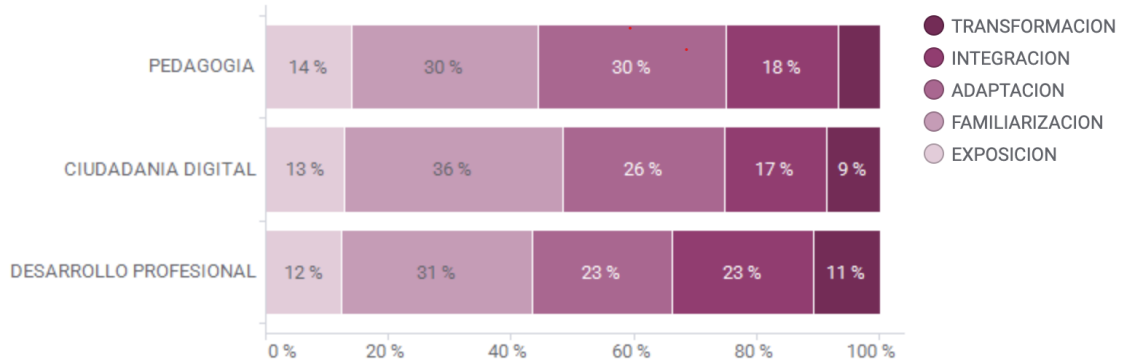
SKILLS

The Skills section shows the distribution of teachers in each skill in accordance with the level of appropriation. Filters have also been added for all the characterisation variables so that it is possible to determine what users with specific characteristics have achieved levels of appropriation.

Figure 6 - View of the Skills section of the tool's dashboard

2 Teachers' skills

Areas evaluated



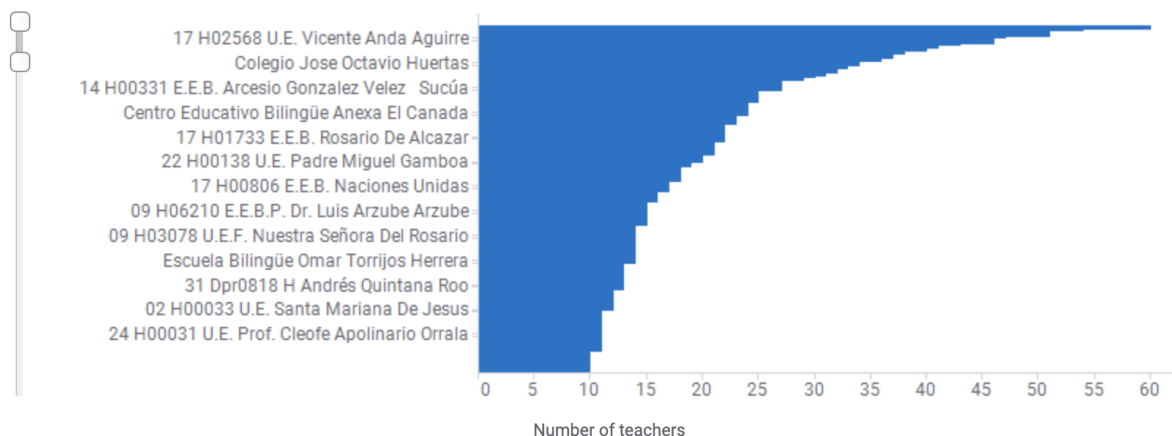
SCHOOLS

The School section includes a ranking of the schools with the highest number of associated teachers who have completed the evaluation.

Figure 7 - View of the Schools section of the tool's dashboard

3 Skills by school

Number of teachers evaluated by school



Filters can be applied to all the dashboard sections so that the information is displayed by any of the following levels of geographic aggregation: country, state, city, and school.

The analysis of these data aims to measure the evolution of the teachers between successive self-evaluations. For this purpose, the tool's data will be cross-checked with the data on the use of the training tools available to the teachers. This way, the impact of these tools on improving their skills can be evaluated.

Access to personal data not included in the dashboard will be regulated according to the current General Data Protection Regulation.

Conclusions

It is widely acknowledged that **teachers have a central role in innovation in education**. However, although teacher training is a crucial issue when proposing changes in education, **this subject remains a challenge for education networks and schools worldwide**. Because of the above, the self-evaluation tool is expected to contribute to unravelling the needs and pathways for developing the skills presented in the Digital Skill Matrix.

Therefore, this tool, whose creation and development process has been presented in this technical note, seeks to offer **support to teachers** by providing them with a resource capable of promoting reflection on their knowledge and pedagogical practices using digital technologies. At the same time, it aims to **support public and private educational institutions in mapping the digital skills of their teachers and designing meaningful training** to meet the demands of the context and the students' needs.

The interest focuses on helping to promote the highest possible quality and equity in education, regarding teachers as the key to change and technology as a facilitator of access for everyone to these changes, which are required so that teachers and students can meet the challenges of the digital age.

Similarly, as the tool is used by teachers and public and private education networks, it is expected to be updated, improved, and developed to continue accompanying the efforts made to ensure innovation and the transformation of education around the world.

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Digital Skill Self-Evaluation Tool for Teachers

TECHNICAL NOTE

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