

# Chapter 10

## The “Digital Facilitator”: An Extended Profile to Manage the Digital Transformation of Swiss Vocational Schools



Alberto A. P. Cattaneo, Luca Bonini, and Martina Rauseo

### 10.1 Introduction

In a framework in which digitalisation has strongly reappeared on the landscape of education policy—and of vocational education in particular—there is a significant need to fully develop digital competence. This has happened not only when focusing on the skills people need to be responsible citizens (see, e.g., the DigComp initiative: Carretero et al. 2017, and the Swiss initiative: Swiss Confederation 2019) and active professionals but also when focusing more explicitly on the field of education. In this respect, the digital competence of the teaching staff is essential, and one of the most acknowledged initiatives relates to the European Framework for the Digital Competence of Educators (DigCompEdu) (Redecker and Punie 2017).

Within this general framework, the Swiss Confederation also issued a series of initiatives focused on the need to implement the digitalisation of its training system and its teachers (Swiss Confederation 2017a, 2018; EDK-CDIP 2018). As a federal centre of competence, in 2016, the Swiss Federal Institute for Vocational Education and Training (SFIVET) developed a Certificate of Advanced Studies (CAS) for the professional development of digital competence, whose reference competence profile is compliant with the DigCompEdu framework as well as other profiles from the Swiss vocational context (e.g., Boldrini and Cattaneo 2011).

Although teachers can be considered to be key players in the digital transformation of schools (e.g., Niederhauser and Lindstrom 2018; Scherer and Teo 2019), and because more work is needed with respect to developing teachers’ digital competence, institutional factors also play a significant role in effectively supporting this transformation (e.g., Petko et al. 2018; Tondeur et al. 2008; Vanderlinde et al. 2014). Therefore, it is extremely important to create the proper conditions to promote digital transformation in schools by effectively and fully exploiting the affordances and

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A. A. P. Cattaneo (✉) · L. Bonini · M. Rauseo  
Swiss Federal Institute for Vocational Education and Training, Lugano, Switzerland  
e-mail: [alberto.cattaneo@iuffp.swiss](mailto:alberto.cattaneo@iuffp.swiss)

added values of technology. Consequently, the existing CAS profile has recently been enriched with a new dimension to address this issue. In fact, the Cantonal Office for vocational education in Ticino was interested in defining the professional profile of an individual who—in addition to having the basic skills for digital teaching and instruction—should also help manage the digital transformation within schools. The objective of this chapter is to present the competence profile of a Digital Facilitator (“Animatore Digitale” in its original Italian denomination), its origins, the process for its development, and its specificities. We begin by presenting the context in which the initiative takes place, with respect to Switzerland and to vocational education in particular. We then summarise some of the theoretical elements concerning teachers’ digital competence. Finally, we present the Digital Facilitator profile and the process through which it was defined.

## 10.2 Digitalisation and Vocational Education in Switzerland

When dealing with vocational training, the emphasis is simultaneously on two mutually essential, interrelated components of the system that are difficult to completely separate: the economy and education. This is also true in the case of Switzerland, which has one of the most effective and acknowledged vocational education and training (VET) systems in the world (Bonoli et al. 2018; Strahm et al. 2016).

A few years ago, as a result of some respectable and, at that time, pioneering studies (e.g., Frey and Osborne 2013; more recently Bühner and Hagist 2017), it was believed that a considerable percentage of professions would disappear in a short period of time as a result of digitalisation, automation and robotization. A new industrial revolution (also known as “Industry 4.0”), more powerful and drastic than all previous ones, was looming on the horizon (Brynjolfsson and McAfee 2014; Schwab 2016), generating a strong feeling of insecurity and instability in society. Over time, this alarmist and anxious emphasis was replaced by more optimistic positions, emphasising that “the interplay between machine and human comparative advantage allows computers to substitute for workers in performing routine, codifiable tasks”, while simultaneously amplifying “the comparative advantage of workers in supplying problem-solving skills, adaptability, and creativity” (Autor 2015, p. 5; see also Pfeiffer 2018). Concerning Switzerland, a number of subsequent studies (e.g., Aepli et al. 2017) supported these more conservative positions; while there certainly has been a decrease in repetitive manual activities, other analytical and non-repetitive activities, which can hardly be automated, have also increased in the last 10 years.

While the debate is ongoing, the emphasis on the digitalisation of the job market has contributed to increasing economic and political awareness about the need to keep the state of the art up to date. Instead of being a source of insecurity and fear, digitalisation has begun to be perceived as a positive challenge and, above all, as an opportunity to be exploited in order to maintain certain economic advantages and to

remain globally competitive. In this sense, the state can create the economic policy framework conditions for a favourable environment. In January 2017, the federal government in Switzerland published a report in which five areas (labour market, research and development, sharing economy, digital finance and competition policy) and the related challenges were analysed in-depth (Swiss Confederation 2017b). From the analysis, eight concrete measures to improve the framework conditions for the digital economy emerged. These include one measure about an “in-depth analysis of the challenges in the fields of education and research and development (universities)” to “assess the horizontal and vertical impact of digitalisation on the education system” and to understand “whether vocational training (basic vocational training, higher vocational training) and Swiss universities (academic training) can make an adequate contribution in terms of preparing new employees” (p. 176). Six months later, in July 2017, a specific report on the challenges that digitalisation poses to training was published in which eight fields of action were identified (Swiss Confederation 2017a). The report confirmed the shift in emphasis on the need to train people to manage the digital transformation, e.g., focusing on the development of digital skills, computational thinking and the skills needed to conduct fundamental research in the fields of computing and computer science. This is fully consistent with the general assumption that the higher the level of training, the more the share of manual tasks decreases in favour of non-routine analytical and interactive tasks (Apeli et al. 2017).

Within this general context, vocational education has also developed strategies. In 2018, the Swiss government in collaboration with the VET stakeholders promoted a specific programme to further develop the VET system (see <https://berufsbildung2030.ch/de/>). The definition of the priorities was established through a voting process held in the second half of 2016. Digitalisation was perceived by 69% of the voters as a factor destined to have a very strong influence on the evolution of the system. Thus, it was the most important and urgent mega-trend to address (followed by upskilling, de-industrialisation and globalisation). Industry 4.0 will not drastically reduce the number of jobs; rather, it will replace certain occupations in favour of newly emerging ones that require new skills. Consequently, the underlying challenge needs to be scaled down and re-framed as the need to ensure basic training, continuing education and re-training of the workforce, starting from initial vocational education.

For VET, the issue is to ensure that the system evolves in a way that enables it to respond to the new needs of the job market. This means both promoting the emergence of new professions—and keeping existing ones up to date (Trede and Lüthi 2018)—and facilitating the development of the skills workers need to compete in this new type of economy, offering (re- and up-)skilling opportunities, where necessary. In line with international studies (e.g., Bauer et al. 2015; Loveder 2017; Pfeiffer 2015) and those conducted in Switzerland (Genner 2017; Scharnhorst and Kaiser 2018), attention has been drawn to the need to train apprentices on the necessary interplay between digital competences (in the strictest sense of the word) and transversal skills (e.g., related to problem-solving, critical thinking, creativity, flexibility, adaptability, resilience, time management, communication, collaboration,

entrepreneurship and interculturality), because the combination of these two sets of competences is valuable and effective for properly facing the digital transformation challenge.

### 10.3 Teachers' Digital Competence

As previously noted, the concept of digital competence is multifaceted and difficult to comprehensively define. While it is not possible to exhaustively review the significant amount of existing literature on this topic, we provide a brief overview of the definition of digital competence and then apply it to the specific professional target group of teachers.

#### 10.3.1 *The Concept of Digital Competence: A Brief Overview of Its Evolution*

The concept of digital competence began to appear with some frequency in the literature in the late 1990s. At that time, the most widely used label referred to the concept as “digital literacy” (Gilster 1997) and emphasised the cognitive dimension, although, in practice, this often encompassed an approach more oriented to technical aspects and to individual tools and products (Menichetti 2017). In terms of literacy, a reference was implicitly made to a series of primary literacy skills that are necessary for anyone (Logan 1995), thus assigning the same status to digital literacy that is typically reserved for reading, writing and counting. The concept also included other contiguous literacies, such as computer literacy, network literacy (Pérez-Tornero 2004), information and communication technology (ICT) literacy, information literacy and media literacy (Martin 2005).

With the new millennium, the concept also began to make its way into European Union (EU) policies and to appear in several European projects. Within the framework of one of these projects, the definition of digital literacy was extended to include not only skills and attitudes but also a (meta-)reflexive dimension and a specific “awareness” trait (Martin 2005). The reference to the dimensions characterising competence (knowledge, know-how and attitudes, cfr. Le Boterf 1994) ensures that the concept of digital competence progressively replaces the previous one (Ryken and Salganik 2003) used in the official texts of the EU (e.g., Recommendation 2006/962/EC on key competences for lifelong learning). Since then, many different digital competence definitions and models have been proposed.

For example, Calvani et al. (2010) defined digital competence as a multidimensional, transversal, historically connotated, product-independent and declinable-in-various-contexts-of-use concept. They also proposed characterising it using three pedagogically significant dimensions: a technological dimension (not only allowing

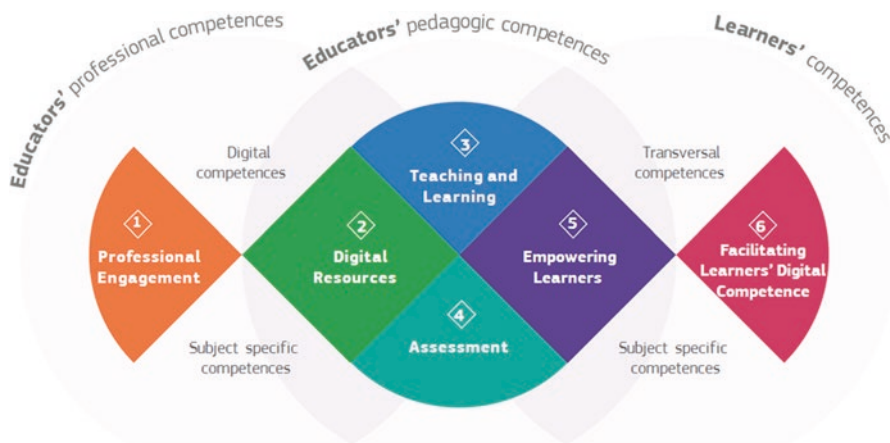
an explorative attitude but also including the capability to select the proper technology with respect its ability to accomplish a task), a cognitive dimension (including coding skills, e.g., applied to three-dimensional [3D] printing and the development of computational thinking) and an ethical dimension (often connected to media education and related to a critical and informed attitude, e.g., with respect to security and privacy issues, to one’s digital footprint, to the reliability of news and to netiquette). More recently, Ilomäki et al. (2016) scanned the literature in search of a comprehensive definition of digital competence and showed its relationship with background disciplines and related terms. They concluded that digital competence is a multifaceted term consisting of four elements: “1. Technical skills and practices in using digital technologies [...] 2. Abilities to use and apply digital technologies in a meaningful way and as an appropriate tool for working, studying and for various activities in everyday life in general [...] 3. Abilities to understand the phenomena of digital technologies [...] 4. Motivation to participate and engage in the digital culture” (Ilomäki et al. 2016, p. 671).

In terms of digital competence models, DigComp is the one most widely used in Europe; its 2.1 version has now been published (Carretero et al. 2017). A similar model has been proposed by the German KMK Strategy (KMK 2016), which is also based on six competence areas for an updated digital education. For a list of other pertinent models, see Ferrari (2012). Consistent with what we presented in the previous section, the basic assumption is that the international policies have to guarantee the development of digital competences for all citizens as a prerequisite (both in the sense of a right and a duty) so people can fully participate in the civic, social and professional arenas without any discrimination. In Switzerland, something similar to DigComp is also in effect (see Swiss Confederation 2019) to create the conditions in which every citizen can acquire and maintain basic skills, including digital skills.

### 10.3.2 *Digital Competence and Teachers’ Professional Profile*

Within this overall framework, this chapter pays attention to the digital competence that *teachers* need to acquire to be effective professionals in the digital era. In a sense, this constitutes an additional layer of competence, on top of the one, previously mentioned, applying to all citizens. The specific need to empower teachers and train them with well-developed digital competence is clearly and explicitly mentioned as one of the priorities and key actions in the main policy documents introduced earlier (Swiss Confederation 2017a, 2018; EDK-CDIP 2018). However, in this case, the issue is not a novelty. Several competence frameworks have been developed on this topic (see Kelentrić et al. 2017 for a short list). Some of the frameworks are more conceptual and theory-driven, while others clearly have a policy intent and are practice-oriented.

The Technology, Pedagogy and Content Knowledge (TPACK) model (Koehler et al. 2014; Mishra and Koehler 2006) clearly belongs to the former group, and it is



**Fig. 10.1** The DigCompEdu 2.0 framework competence structure

probably the most well-known. TPACK proposes that teachers should develop technological, pedagogical and content knowledge. These three types of knowledge overlap and interact synergistically, thus revealing additional components (technological content knowledge, technological pedagogical knowledge and pedagogical content knowledge), in turn preluding to the essential core of the model, which is technological pedagogical content knowledge. Rosenberg and Koehler (2015) also emphasised the role that context knowledge plays in such a holistic integration.

As per the latter group, one of the most known reference is surely the DigCompEdu, the European framework for the digital competence of Educators (Redecker and Punie 2017). DigCompEdu organises a set of 22 competences in six main areas aiming to detail “how digital technologies can be used to enhance and innovate education and training”. Each competence is then described for educators so they can achieve different stages of competence development and mastery. Looking at how the six areas are presented (Fig. 10.1), it is interesting to note that this framework, although focused on educators, also tries to integrate the learners’ perspective (on the right), moving from the *professional* competence of educators towards the empowerment of their students through the mastery of the *pedagogical* component.

The Technology-Enhanced Training Self-Assessment Tool (TET-SAT)<sup>1</sup> and the Self-reflection on Effective Learning by Fostering the use of Innovative Educational Technologies (SELFIE)<sup>2</sup> are interesting tools connected to the DigCompEdu framework. Both tools are connected to European projects, and they easily allow teachers to self-assess their digital competence development. The former is an online self-assessment tool that aims to help teachers “develop digital pedagogical competence;

<sup>1</sup> <http://mentep.eun.org/tet-sat>

<sup>2</sup> [https://ec.europa.eu/education/schools-go-digital\\_en](https://ec.europa.eu/education/schools-go-digital_en)

Engage more actively in reflecting on their pedagogical practice using ICT, stimulated by a structured self-assessment exercise providing feedback according to five levels of progression; [...] Establish a personal competence profile which can be compared to other teachers” (MENTEP 2018). With a structure similar to DigCompEdu, TET-SAT is organised along four main dimensions (digital pedagogy, digital content use and production, digital communication and collaboration and digital citizenship) connected to 15 sub-dimensions. Each sub-dimension includes competences based on five levels of mastery. SELFIE, available in more than 24 languages, is “a tool designed to help schools embed digital technologies into teaching, learning and student assessment” that gathers and combines the views of teachers, students and school leaders on how technology is used in their school.

Looking at these two tools—especially SELFIE—enables us to emphasise how often teachers’ competence models are finalised and combined with larger technology *integration* models that go beyond the skill component of competence to consider larger dimensions. In general, these models reveal that digital competence is only one component, necessary but not sufficient, to guarantee the effective integration of technologies in the educational context. For this to happen, it is necessary to work on competences in the strictest sense of that term, as well as on attitudes and beliefs at the individual level—as posited, for example, by the Will-Skill-Tool-Pedagogy (Knezek and Christensen 2016)—and on leadership and school culture at the institutional level (e.g., Christensen et al. 2018). Thus, it is also necessary to be aware of the close relationship between these two dimensions; for example, in a context where beliefs are difficult to change, the availability of leadership supportive of promoting technology integration can make a difference (Petko et al. 2018). In the Swiss VET context, Seufert et al. (2018) and Seufert and Scheffler (2018) also proposed a model of teachers’ digital competence that includes different facets. These studies addressed teachers’ digital competence as an *extension* of their existing professional competences. They start from the well-acknowledged model of professional teaching competence by Baumert and Kunter (2006) (see also Kunter et al. 2009, 2011), “which comprises professional knowledge, convictions in the sense of personally biased basic orientations, values, motivational orientations, and self-regulation” (Seufert et al. 2018, p. 95). The TPACK (being itself an extension of Shulman’s 1987 model) is then considered to define professional knowledge when technology comes into play. As per the skills a teacher needs, Seufert and colleagues also refer to Blömeke’s (2005) model, which not only takes into account the two core tasks of media didactics (teaching and learning with media) and media education (teaching and learning about media) but also considers the media-specific requirements of the learners and the school environment (including infrastructures and support structures). Finally, Seufert et al. (2018) noted that, apart from *product-oriented* models, such as TPACK, *process-oriented* and *action-based* models must be included when considering teachers’ digital competence. Thus, in addition to the knowledge and skills required by the teachers and the organisational support structures, the attitudes and beliefs of the teachers and informal learning opportunities play an equally important and explicit role. This last point is particularly interesting, as it emphasises that teachers should develop their skills while acting (and critically



reflecting on action) in the informal context of their practice, and it reinforces the importance of learning communities, i.e., of an informal exchange with colleagues engaged in the same practice.

Proceeding on this track, it is possible to conclude our argument by considering how these micro- and meso-perspectives influence the macro, community perspective: the countries that are best able to profit from the digital transformation are those that can combine and promote both education and labour market policies, thus “integrati[ng] digital technology in the global education ecosystem” and “supporting educational reforms with proper teacher training” (UNESCO 2018, p. 1).

In this sense, it is worth mentioning the recent work by Aagaard and Lund (2020). They propose four dimensions (generic digital competence, didactical digital competence, professionally oriented digital competence and transformative digital competence) on which to ground the concept of Professional Digital Competence (PDC) in the light of cultural-historical activity theory (Engeström 1987). PDC goes beyond simple mastery. First, it requires appropriation. According to Aagaard and Lund (2020), “Appropriation differs from mastery in the sense that mastery can be exercised as control over tools; it is basically instrumental, unidirectional and manipulative. Appropriation, on the other hand, involves transformation of tools and contexts as well as agents but not necessarily without resistance” (p. 72). Appropriation is only one of the vital issues in the learning sciences that teachers need to connect to the affordances of digital technologies in order to develop their PDC. In the appropriation concept, as well as in the transformative dimension, we see a possible operationalisation of what was presented above as the interplay between digital competence as a trait of an individual and technology integration as something that occurs in a wider educational context and is related to the digital transformation process. Moreover, a second characteristic of the PDC concept is relevant for us when specifically dealing with VET. Specifying its *professional* component, in fact, Aagaard and Lund (2020) indicate that “competence is linked to work-life processes” and that “PDC for a teacher demands awareness of how subjects [as well as professions] change in a digitalized society; competences to relate school to such a changing society [...]; the ability to identify and address ethical questions and dilemmas that emerge in a digitalized society [...] to bridge current campus practices with (future) workplace practices” (pp. 78, 80).

Consequently, we define teachers’ digital competence as a complex and reciprocally interplaying set of resources—i.e., knowledge, skills and attitudes—concerning teaching-and-learning *with* media and *about* media. The professional component includes the knowledge and skills related to the technological, pedagogical and content dimensions, as well as the attitudes (including beliefs, values, motivation and awareness) related to the digital world. This further implies the need to consider the composite and systemic interaction among the cognitive, metacognitive, ethical and contextual dimensions that digitalisation entails. In the case of vocational education, this also includes the consequences of digitalisation on vocations, on the skills requirements and on the world of work in general. It assumes mastery (e.g., of digi-



tal tools), but it goes beyond that to emphasise integration and appropriation—resulting from critical use and reflection on practice—of the dynamics between digital tools, people and contexts. Finally, it requires effective interactions between the individual and the collective subjects. In fact, it requires not only effective leadership and a supportive school culture and the presence of infrastructures and support structures but also the possibility of having informal exchanges with colleagues and of belonging to a community of teachers who profit from the informal and non-formal occasions of learning, as well as the formal ones.

## 10.4 Towards a Digital Facilitator Profile

In this overall scenario, the experiences promoted by the SFIVET also occur. We already referred to the initiative conducted years ago to define a professional profile consisting of 11 competences related to technology integration in vocational schools (Boldrini and Cattaneo 2011; Cattaneo and Boldrini 2009). The context was that of a large national project that was promoted at the beginning of the new millennium to incentivise schools to adopt educational technology to support learning. Therefore, the resulting competence profile for vocational teachers using technology was derived from two complementary efforts: the analysis of existing international frameworks and the analysis of existing technology integration projects in vocational schools. Moreover, in the official curriculum for teachers to obtain their federal teaching diploma, a module is dedicated to the topic. It considers many of the facets highlighted in the previous section, providing for a minimum level of digital literacy and addressing the cognitive, instructional, ethical, economic and societal issues related to digitalisation. However, as part of the basic training curriculum, the module only briefly addresses these issues; it does not delve into them deeply.

Thus, as a competence centre sensitive to the topic, in 2016, SFIVET also developed a continuing education programme under the umbrella of a Certificate of Advanced Studies (CAS) to further develop digital competence. However, due to the time constraints given by the structure based on two modules corresponding to 5 ECTS each, the CAS “Form@tore digitale” (Digital Tr@iner), was conceived with a strong emphasis on didactical and instructional aspects, lacking to delve more deeply into some of the other issues.

However, under the impulse of the most recent national educational policies, and profiting from the boost assured by the Cantonal Office for VET in Ticino (the Italian-speaking canton of Switzerland), we revised the profile of the Digital Tr@iner and at the same time identified the competence profile of an educator who not only fully integrates the affordances of educational technology into her/his practice but can also promote digital transformation within her/his educational institution. We refer to this as a Digital Facilitator profile, whose genesis is reported in the following section.

### 10.4.1 Procedure

The project was first organised at the cantonal level; at a later stage, it was extended to the national level. Locally, having received the mandate from the canton, a team of three people was created to manage the project. This operating group immediately constituted a larger accompanying and counselling group composed of practitioners in the field. In addition to representatives of the canton, this included people from the vocational school management, teachers from different areas and disciplines, information technology (IT) technicians and academics who are experts on digital competences in the field of education. The operating group constantly consulted with and periodically met the counselling group throughout the duration of the project and after each of the main phases described below. At the national level, one member of the operating group shared the results with the members of the national group in charge of defining the curricula for the courses (including the CASs), while everyone in the operating group participated in discussions about and validation of the competence profile with a larger national group of trainers and project managers from the three regional sites of SFIVET.

The project then progressed through the following steps:

*Definition of a standard competence profile (as a starting point).* First, the operating group conducted a comparative analysis of the relevant existing profiles. The competence profile upon which the CAS Digital Tr@iner was developed was compared with the frameworks mentioned earlier, in particular DigCompEdu, as well as the digital competence profile of the VET teacher already developed in the Swiss VET context (Cattaneo and Boldrini, 2007) and the official module offered in the basic training curriculum. In addition to these elements, the modules constituting the Federal Vocational Certificate of Trainer (Swiss Federation for Continuing Education, 2019) and the CAS of the Zurich High School of Education (PHZH, 2019), which offers a similar type of training, were also considered. This phase resulted in the development of the first competence profile, mainly related to the didactical and technological dimensions. The profile was fully compliant with the international frameworks that were considered, but it was also contextualised with respect to the specificities of Swiss vocational education and the effective ways to integrate technologies into vocational education (Schwendimann et al. 2015).

*Validation of the first profile.* The emerging profile was presented to the counselling group to be discussed and improved based on further reflections and arguments by the group; then it was validated.

*Sketching the missing component for the full profile.* The same meeting provided the opportunity to gather spontaneous ideas about additional activities and expertise that were needed to upgrade the Digital Tr@iner profile to the Digital Facilitator profile. After the meeting, the operating group systematised and categorised the collected ideas and compared the results to already existing profiles in the Swiss context.

*Presentation of the Digital Facilitator profile, discussion and cantonal validation.* In this phase, the completed profile was discussed again, then finalised and

validated by the counselling group. The consultation also included discussions on the practical and organisational aspects related to the institutional positioning of the resulting profile, as well as proposals for recommendations that should be made to educational policymakers.

*National discussion and validation of the complete Digital Facilitator competence profile.* The last step of the procedure focused on the presentation, discussion and validation of the full profile to a national group of SFIVET teacher educators, trainers and project managers from all three linguistic regions of Switzerland. For this phase, French was chosen as the common language. Due to the richness of the discussion and its implications, this step required multiple sessions, conducted in-person and online. It is important to note how the cultural component—mirrored in the linguistic expressions chosen to describe each competence (the profile was syntactically available in French, German and Italian) and the original correspondences in English to the international frameworks—affected the interaction, enriching the background as well as the semantic range of each label used to identify the competence. Each expression was then double-checked from and to the second translation language, thus assuring a higher consistency throughout the translations.

## 10.4.2 Results

The resulting Digital Facilitator professional competence profile is presented in Table 10.1.

The finalised Digital Facilitator profile consists of three levels, organised around four main areas. Each area includes sub-areas (for a total of 13, level 2) within which are found the basic building competences (level 3). Each competence is then described in detail in the full framework, which is not included in this chapter (the detailed version is available upon request).

## 10.5 Discussion

With respect to the two main competences that have been developed in the Digital Tr@iner profile since 2016, the Digital Facilitator profile extends the previous profile in at least three main ways: it includes a media literacy dimension, previously largely under-represented; it more explicitly considers the addressees of the trainer interventions, and then it is more oriented towards the development of the trainees’ digital competences; and it foresees a completely new key area related to the active promotion of digital transformation within educational institutions.

In general, the Digital Facilitator profile is fully aligned with the models described in the previous section of this chapter. With respect to the TPACK model (Koehler et al. 2014), the technological and pedagogical components and the ways in which they intersect are more evident than the content and subject-related component, in

**Table 10.1** Competence professional profile for the Digital Facilitator

Competence area	Sub-area	Competences
1. Building a professional digital identity and culture	1.1 Professional development and commitment	1.1.1 Continuous digital professional development 1.1.2 Professional collaboration 1.1.3 Reflective practice and research posture 1.1.4 Digital identity
	1.2 Approach to technology	1.2.1 Curiosity and an open-minded attitude 1.2.2 Critical approach according to various perspectives 1.2.3 Digital resource choices
2. Integration of digital technology in training	2.1 Elaboration of the devices	2.1.1 Scenarisation of educational activities 2.1.2 Fostering the learners' involvement 2.1.3 Articulation and structuring of learning environments
	2.2 Appropriation of digital artefacts	2.2.1 Selection of digital resources 2.2.2 Development of digital resources
	2.3 Support for the learning processes	2.3.1 Interactions management 2.3.2 Differentiation and heterogeneity 2.3.3 Accessibility and inclusion
	2.4 Learning processes regulation	2.4.1 Evaluation strategies 2.4.2 Digital traces analysis
3. Developing the learners' digital skills	3.1 Learners' digital citizenship development	3.1.1 Encouraging responsible use 3.1.2 Fostering various types of collaboration through digital technology
	3.2 Digital resources and services promotion	3.2.1 Information literacy and media education 3.2.2 Digital problem solving
	3.3 Support for the production of digital artefacts	3.3.1 Learners' support in the creation of digital content 3.3.2 Raising awareness of the legal basis for using digital data
4. Promotion of digitalisation in educational institutions	4.1 Analysis of existing and potential needs	4.1.1 Proposals for innovative practices 4.1.2 Training needs inventories 4.1.3 Demand analysis
	4.2 Project development	4.2.1 Organisation of continuing education opportunities 4.2.2 Accompaniment for digitalisation projects 4.2.3 Project management elements
	4.3 Support/ accompaniment	4.3.1 Assuming the role of the digital facilitator 4.3.2 Accompaniment
	4.4 Interventions evaluation	4.4.1 Evaluation and assessment 4.4.2 Reflective posture

which the declensions and the transfer of the general principles presented in the course are directly ascribed to the participants. In fact, the composition of the classes is usually heterogeneous with respect to the disciplines of the participants and the subject matter they teach. While discipline homogeneity is fostered for some group assignments, most of the time heterogeneity is exploited as a means to de-centralise oneself, listen to other perspectives and enrich the possible transfer.

The six main areas of the DigCompEdu framework (Redecker and Punie 2017) are all taken into account, although the final structure is based on four main areas. However, one can see that the three main groupings of DigCompEdu are recognisable in the Digital Facilitator profile. Moreover, with respect to the previous version, an explicit reference to the orientation of teaching towards empowering the learners’ digital competence is now present; looking at the single competence formulation, one can see that many of them evidently resonate with the DigCompEdu formulations. At the same time, we abandoned the idea of proposing different descriptions for each competence, according to the levels of mastery. That approach does not always allow the reader to clearly distinguish between the levels because sometimes they overlap.

Three out of the four components of the Will Skill Tool Pedagogy model (Knezek and Christensen 2016) strongly constitute the basis for the Digital Facilitator profile. The first dimension, related to teachers’ beliefs, is more implicit and related to the first area of the profile, which focuses on professional development and includes an important component related to critical thinking and reflective practice.

We see the main foci of the PDC framework (Aagaard and Lund 2020) reflected in the Digital Facilitator profile, starting from the concept of appropriation (see above with respect to the simple identification of mastery levels), which also explicitly appears in the definition of one sub-area (the 2.2); to the relevance of the context and the role of digitalisation in the world of work; to the declination of digital teaching competence with respect to the specific professional context where the learners are active in their apprenticeship and the related challenge of learning across sites (Ludvigsen et al. 2011).

The reference to the institutional context and its important interplay with the individual competence—which is transversal to many of the above-cited models and highlighted in particular by the model of Seufert et al. (2018)—is subsumed in the fourth area, completely new and fully devoted to this aspect. It more fully characterises the specificity of the Digital Facilitator than the other three aspects.

Consequently, the Digital Facilitator is a professional who—in addition to possessing teaching skills related to the effective, critical and sense-making integration of technologies in the education system already emphasised by other profiles—integrates a strong media education competence. This is an important consideration given the ways in which digitalisation has changed the world of work, and it results in an orientation towards the development of learners’ digital competence. Additionally, it seriously considers the specificities of vocational education, and in particular the articulation and interplay among and across learning sites (Aprèa and Cattaneo 2019; Schaap et al. 2012). Thus, the Digital Facilitator completes her/his profile by developing knowledge, skills and attitudes (i.e., competence) aimed at

promoting digital transformation in educational institutions, which also assumes an updated and critical thinking attitude towards the digitalisation of the job market and of vocation profiles. This competence is especially related to the project dimension (including management aspects), the relational and accompanying dimension and the reflexive-evaluating dimension of the implemented interventions. A fundamental characteristic of the Digital Facilitator is that he/she is a resource for colleagues within his/her own school premises. Therefore, the Digital Facilitator becomes a reference both for digital teaching and for the concrete implementation of digital-oriented projects—from the smallest experiments to more structural implementations—in educational institutions. In this way, Digital Facilitators support their colleagues in the development of their ideas, promote their own ideas by bringing them to the attention of the entire teaching staff and motivate people that are more resistant to digitalisation. This also means seriously considering what Seufert et al. (2018) suggested with respect to the relevancy of informal occasions of digitalised practices and of a community of peers with which to discuss and compare one's practices. Whatever the situation, the Digital Facilitator will always approach the task in the most (constructively) critical spirit possible. The Digital Facilitator is not a technology promoter at all costs; he/she only does so when it has a real pedagogical and educational benefit. The Digital Facilitator is also characterised by a predisposition to experimentation and proactivity, as well as to listening, negotiating and collaborating with others. To adequately fulfil these tasks, it is important that the Digital Facilitator be open-minded and available for continuous training and skills updating, as well as being able to deal with other Digital Facilitators who may be facing or have already faced similar situations, thus contributing to building a new professional community or practice.

## 10.6 Conclusion

In this chapter, we addressed the question of whether a specific individual is needed to promote the digital transformation of Swiss vocational schools. Through a regional research-and-development project implemented in the Canton of Ticino and validated by a group of VET educators at the national level, we identified the professional profile of the Digital Facilitator. This person would add to the key digital competences that every teacher should possess, including specific competences in the logic of media education (including a critical perspective on digitalisation, in particular with respect to its consequences on the world of work and the development of professions). Above all, the Digital Facilitator should have specific skills to promote digital transformation within school institutions, acting as a hinge, an interface and a mediator between the school management, colleagues and other institutional stakeholders that are active in the territory.

This naturally requires coordination with educational policies, so that digital competence can be institutionalised and implemented in the field. Moreover, it is very important to create a reference community, especially since each school would

have not more than one Digital Facilitator (see also Seufert et al. 2018). This coordination has not been fully achieved yet. Although the project was born from the explicit political will to develop such a figure, in fact, the work is currently more the result of a theoretical reflection. On the theoretical level, we see its first implication: being grounded in international contributions about the digitalisation debate, in fact, it applies to constitute a possible general reference for managing and piloting the digital transformation of learning organisations, especially in the vocational sector. Ultimately, it is necessary to confirm and validate this profile based on evidence—which is the main implication for research—after its introduction into the real world of vocational schools, at least in a pilot project. Indeed, despite its theoretical grounding, the actual Digital Facilitator profile is strongly contextualised. Its validity, applicability and generalisability outside regional and national borders must be verified. Although the dual nature of Swiss vocational training has been strongly considered in the definition of the profile—for example by adding specific skills to the general reference framework provided by DigCompEdu—the experiences of promoting digital transformation linked to the business world have only been marginally considered. This could provide interesting feedback on the profile itself and on the articulation that a person, such as the Digital Facilitator, might have to promote and foster in order to be effective throughout the entire VET system and, in general, for any learning organisation.

The complexity of the resulting professional profile also suggests the need to investigate it by conducting further research on its competence components and the relationship among them (e.g., How in-depth does the project management part need to be? How important is it for IT skills to be a prerequisite for the Digital Facilitator? How can the Digital Facilitator’s position within the school be interfaced at the organisational level with the other stakeholders already in place?). Additional research is also needed to determine how effective a Digital Facilitator would be in promoting digital transformation within an actual school.

The first step in this direction, and a strong premise for identifying the important consequences for practice, will be to reflect how to train a Digital Facilitator so that the training is anchored to professional practice. A proposal has already been made to restructure the former CAS and extend it to include four different modules that combine two different CASs, also possibly leading to a Diploma of Advanced Studies (DAS).<sup>3</sup> Based on the analysis presented here, and the other existing models considered so far, the training will emphasise the “experimental” approach in the field and will focus on more ways to promote sharing and collaboration, profiting from the existing community of already qualified digital trainers.

Finally, although digital transformation is already part of everyday life, from an educational point of view many challenges still need to be faced, especially in the

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<sup>3</sup>In compliance with the profile, the four modules would deal respectively with: (1) the development of a digital learning environment; (2) digital education tools and pedagogical devices, where “education” includes both teaching and learning and learning at school and at the workplace; (3) media education, meant in the wide sense clarified above, strongly including a critical attitude towards the digitalisation of the world of work; (4) digital transformation project management.



VET context. Hopefully, the profile presented here can be a much-needed cornerstone in building a better digital future for the field of education.

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