



Digi-VET
**Fostering Digitisation and Industry 4.0 in vocational
education and training**
(2018-1-DE02-KA202-005145)

Competence Profile – Germany
A desktop-research report

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The following competence profile is the result of a desktop research about needed competences in the field of digitisation in enterprises and education.

The figure below illustrates the research results graphically:

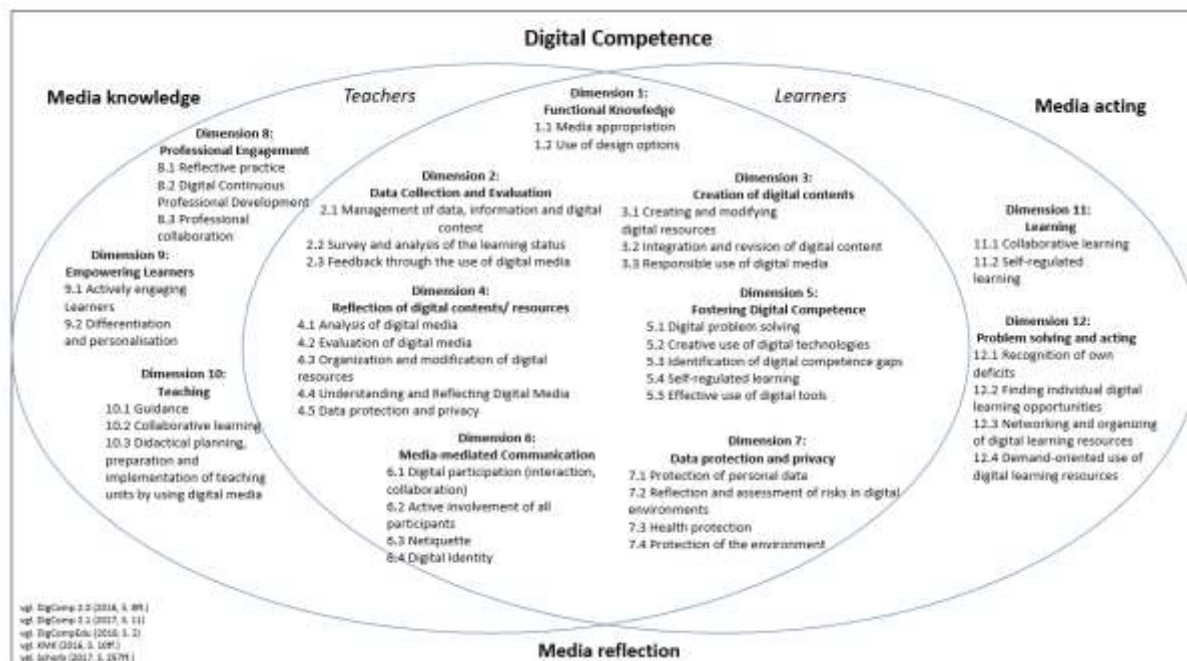


Figure 1: Digital Competence for learners and teachers

(Source: Own representation according to DIGCOMP 2.0 (2016, pp. 8ff.); DIGCOMP 2.1 (2017, p. 11); DIGCOMPEDU (2018, pp. 2); KMK (2016, pp. 10ff.); SCHORB (2017, pp. 257ff.).)

The figure shows the competence profile in the field of digitization. Under the roof of digital competence, the media knowledge, the media acting and the media reflection are located (cf. SCHORB 2017, p. 257ff.). These three types are the fundamental elements of the construct of digital competence. These elements form the framework of digital competences (cf. *ibid.*). These include in total 11 dimensions, which consists of further sub dimensions (see figure 1). Moreover, you can see that some dimensions are only for teachers or learners. There is also an intersection. In detail, it means that some dimensions of digital competences apply for both target groups.

The first element is the media knowledge, which focusses on functional and structural knowledge (cf. SCHORB 2017, p. 257ff.). Here, following dimension can be allocated:



Competence profile DiGI-VET

Digital Competences

- I. **Media knowledge (Functional and structural knowledge)**
- II. **Media reflection (Self-, media- and social-related reflection)**
- III. **Media acting (Communicative, creative and participative action)** (vgl. Schorb 2017, S. 257ff.).

I. Media Knowledge

Dimension	Sub dimension	Explanations
Dimension 1: Functional Knowledge	1.1 Media appropriation	- Requirement for instrumental-qualificational skills with regard to hard- and software
	1.2 Use of design options	- Aesthetical design knowledge - Knowledge of text and image processing programs - Use and application of design options
Dimension 2: Data Collection and Evaluation	2.1 Management of data, information and digital content	- Analysis, comparison and critical evaluation of the credibility and reliability of data sources, information and digital content
	2.2 Survey and analysis of the learning status	- Review of learning success and competence acquisition - Learning control using by digital media - Critical analysis of learning behaviour
	2.3 Feedback through the use of digital media	- Giving feedback about learning success/ competence acquisition to the participants by using media
Dimension 7: Data protection and Privacy	7.1 Protection of personal data	- Knowledge of data protection regulations - Respecting of personal information and privacy - Consideration of data security - Use of privacy statements
	7.2 Reflection and assessment of risks in digital environments	- Knowledge and reflection about the risks of digital environments - Knowledge of safety precautions - Development of protection measures
	7.3 Health protection	- Knowledge of addictive potential - Protect yourself and others from potential hazards - Health-conscious use of digital media and with a view to social well-being



	7.4 Protection of the environment	- Awareness of the impact of digital technologies on the environment
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II. Media reflection

Dimension	Sub dimensions	Explanations
Dimension 4: Reflection of digital contents/ resources	4.1 Analysis of digital media	<ul style="list-style-type: none"> - Critical analysis and evaluation of digital media - Knowledge and critical examination of the effects of digital media
	4.2 Evaluation of digital media	<ul style="list-style-type: none"> - Critical assessment and evaluation of the content of digital (educational)-resources - Knowledge and critical examination of the effects of digital media
	4.3 Organization and modification of digital resources	<ul style="list-style-type: none"> - Create, edit and modify digital (educational) resources (to the extent permitted by law) - Organize the content of digital resources and make it available to other interested parties, if necessary
	4.4 Understanding and Reflecting Digital Media	<ul style="list-style-type: none"> - Critically questioning regarding digital media - Assessment and consideration of social and ethical responsibility for oneself and others - Knowledge of the diversity of digital media/ (educational) resources - Knowledge of the importance of digital media in the social, societal and political context - Knowledge, Analyse and Reflection regarding the potential of digital media, especially in the education sector
	4.5 Data protection and privacy	<ul style="list-style-type: none"> - Knowledge of open educational resources and licenses - Creation of (open) licenses - Sensitisation within the framework of data protection regulations
Dimension 5: Fostering Digital Competence	5.1 Digital problem solving	<ul style="list-style-type: none"> - Identification of technical problems - Solving technical problems - Transferring digital knowledge to new situations
	5.2 Creative use of digital technologies	<ul style="list-style-type: none"> - Use of digital tools and technologies for knowledge creation and process innovation - To deal individually and collectively with cognitive processing in order to





		solve conceptual problem situations in digital environments.
	5.3 Identification of digital competence gaps	<ul style="list-style-type: none"> - Knowledge about (further) development of digital competences - Supporting others regarding (further) development of digital competences - Seizing opportunities to keep up with self-development and digital evolution
	5.4 Self-regulated learning	<ul style="list-style-type: none"> - Use of digital technologies to support self-regulated learning processes - Planning, implementation, control and reflection of the individual learning process
	5.5 Effective use of digital tools	<ul style="list-style-type: none"> - Knowledge about digital tools and decisions are most effective in supporting the individual learning process
Dimension 8: Professional Engagement	8.1 Reflective practice	<ul style="list-style-type: none"> - Self-critical evaluation of digital media - Reflection of the didactical preparation and use of digital media in coordination with practice
	8.2 Digital Continuous Professional Development	<ul style="list-style-type: none"> - Targeted use of digital media for own development
	8.3 Professional collaboration	<ul style="list-style-type: none"> - Collaboration and active sharing of experiences with other teachers through digital media

III. Media acting

Dimension	Sub dimensions	Explanation
Dimension 3: Creation of digital contents	3.1 Creating and modifying digital resources	<ul style="list-style-type: none"> - Creation and edition of digital content in multiple formats - Expressing yourself by digital resources
	3.2 Integration and revision of digital content	<ul style="list-style-type: none"> - Using digital media to integrate new tasks/formats/activities into the learning process in order to (further) develop digital content - Edition, presentation and sharing of digital content





	3.3 Responsible use of digital media	<ul style="list-style-type: none"> - Knowledge of copyright and licensing laws regarding data, information and digital content - Knowledge and compliance with legal requirements for the creation and further development of digital content - Respecting of personal rights
Dimension 6: Media-mediated Communication	6.1 Digital participation (interaction, collaboration)	<ul style="list-style-type: none"> - Ensuring that all stakeholders have access to the digital media - Consideration of previous knowledge of all involved parties - Knowledge and understanding of appropriate digital means of communication for a given context - Exchange data, information and digital content with others by using appropriate digital media - Participation of social, public and private services by using digital media
	6.2 Active involvement of all participants	<ul style="list-style-type: none"> - Using of digital media/technologies to increase and foster the active and creative engagement of stakeholders - Suggestions for complex problem solving processes
	6.3 Netiquette	<ul style="list-style-type: none"> - Awareness of rules of conduct with regard to the use of digital technologies and interaction in digital environments. - Adaptation of communication strategies to the respective context - Raising awareness of cultural and generational diversity in digital environments
	6.4 Digital Identity	<ul style="list-style-type: none"> - Development and management of digital identity - Protection of own reputation - Protection of data generated by multiple digital media
Dimension 9: Empowering Learners	9.1 Actively engaging Learners	<ul style="list-style-type: none"> - Fostering the active and creative engagement of learners by using digital media. - Fostering of deep, transversal thinking - Dealing with complex practical issues - Extension of teaching to real learning situations
	9.2 Differentiation and personalisation	<ul style="list-style-type: none"> - Supporting learners in their learning process in order to achieve individual





		learning aims at their own learning pace
Dimension 10: Teaching	10.1 Guidance	<ul style="list-style-type: none"> - Support learners individually and in groups by using digital media - Offering of innovative and new support strategies
	10.2 Collaborative learning	<ul style="list-style-type: none"> - Fostering of collaborative learning through digital media - Preparation learners specifically for using digital media and enable them to use digital media in group work phases, so that their cooperation and communication can be strengthened
	10.3 Didactical planning, preparation and implementation of teaching units by using digital media	<ul style="list-style-type: none"> - Conscious use of digital media in the classroom - Planning, designing and implementation of digital teaching methods
Dimension 11: Learning	11.1 Collaborative learning	<ul style="list-style-type: none"> - Using of digital tools and technologies for collaborative processes and for the development of results within group work to strengthen communicative group processes
	11.2 Self-regulated learning	<ul style="list-style-type: none"> - Using of digital media to control and support the individual learning process - Learning progress can be documented and reviewed by using digital media - Organisation of the individual learning process through digital media
Dimension 12: Problem solving and acting	12.1 Recognition of own deficits	<ul style="list-style-type: none"> - Identification of own deficits regarding the use of digital media - Developing of measures/strategies to solve the deficits
	12.2 Finding individual digital learning opportunities	<ul style="list-style-type: none"> - Knowledge, assessment, use of effective digital learning environments
	12.3 Networking and organizing of digital learning resources	<ul style="list-style-type: none"> - Organization of a personal system of networking regarding digital learning resources
	12.3 Demand-oriented use of digital learning resources	<ul style="list-style-type: none"> - Knowledge of digital tools and ability to use them adapted to the respective context - Knowledge of requirements for digital tools - Identification of digital tools which support problem solving process



Sources:

Arnold, P./ Kilian, L./ Thillosen, A./ Zimmer, G. (2018): Handbuch E-Learning (5. Auflage). Bielefeld: Bertelsmann Verlag.

DigComp 2.0 (2016): The Digital Competence Framework for Citizens. European Commission. Gefunden am 20.09.2019 unter http://publications.jrc.ec.europa.eu/repository/bitstream/JRC101254/jrc101254_digcomp%202.0%20the%20digital%20competence%20framework%20for%20citizens.%20update%20phase%201.pdf.

DigComp 2.1 (2017): The Digital Competence Framework for Citizens with eight proficiency levels and examples of use. European Commission. Gefunden am 20.09.2019 unter [http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/web-digcomp2.1pdf_\(online\).pdf](http://publications.jrc.ec.europa.eu/repository/bitstream/JRC106281/web-digcomp2.1pdf_(online).pdf).

DigCompEdu (2018): Europäischer Rahmen für die Digitale Kompetenz von Lehrenden. Digitale Kompetenz Lehrender. Europäische Kommission. Gefunden am 20.09.2019 unter https://ec.europa.eu/jrc/sites/jrcsh/files/digcompedu_leaflet_de-2018-09-21pdf.pdf.

KMK (2016): Bildung in der digitalen Welt. Strategie der Kultusministerkonferenz. Gefunden am 20.09.2019 unter https://www.kmk.org/fileadmin/Dateien/pdf/PresseUndAktuelles/2017/Strategie_neu_2017_datum_1.pdf.

Schorb, B. (2017): Medienkompetenz. In Schorb, B./ Hartung-Griemberg, A./ Dallmann, C.(Hrsg.). Grundbegriffe Medienpädagogik (6. Auflage), München 2005, S. 254-261.