



Learning Maturity Model for Digital Education Competence

EdDiCo Output 2

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Authors

Stefania Aceto, Lisa Marie Blaschke, Anthony Camilleri, Antonia Dittmann, Yasmin Djabarian, Jochen Ehrenreich, Ursula Göz, Raimund Hudak, Aida Lopez Serano, Ildiko Mazar, Stefano Menon, Carmen Padrón-Nápoles, Henri Pirkkalainen, Ira Sood, Matteo Uggeri, Daiva Urmoniene, Airina Volungeviciene, Vida Žvinienė

Contributors

The work presented here relies heavily on elements of the DigCompEdu Framework. Content originating from the DigCompEdu Framework is cited with reference to the DigCompEdu reuse policy.

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Editors

Antonia Dittmann, Yasmin Djabarian, Jochen Ehrenreich, Ursula Göz

Layout

Tara Drev

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The Learning Maturity Model for Digital Education Competence has been created as part of EdDiCo's first project phase. The aim is to create an **organisational paradigm for digital education training content**. By aligning the model's structure to the Tuning-CALOHEE framework (KSA - Knowledge, Skills, Attitudes), its compatibility with previous work (such as the [Tuning/CALOHEE Framework for Teacher Education](#)¹ has been pursued. Thus, this bears the potential to add "digital education" to the Tuning-CALOHEE framework and allow for its future-oriented expansion. The model serves as the foundation for EdDiCo's central output: **a learning directory** with more than 500 high-quality digital learning opportunities (e.g., MOOCs or OER). The learning opportunities are matched according to specific competence subsets and progression levels and will be suggested to educators through **a self-assessment tool**.

The Learning Maturity Model for Digital Education Competence describes each subset of the competences identified in the [Competence Meta Model for Digital Educators](#)² in terms of **three proficiency levels** -- Explorer, Expert, Pioneer -- and subdivides each competence into its constituent elements of (1) **knowledge**, (2) **skills** and (3) **autonomy & responsibility**. This differentiation acknowledges on the one hand that educators may not only measure their level of specific digital competences in binary terms but rather in terms of proficiency levels. On the other hand, the tripartite structure mirrors that competences are a conglomerate of content-related expertise (e.g. on digital technologies and pedagogical strategies), the application of this knowledge, and the attitude or mind-set that educators display. As the Competence Meta Model for Digital Educators heavily draws on the [European Framework for the Digital Competence of Educators \(DigCompEdu\)](#)³, the Learning Maturity Model can be understood as a proposal to further operationalise DigCompEdu.

The Learning Maturity Model for Digital Education Competence has been validated at different stages of its creation process and greatly benefitted from feedback and exchanges with various stakeholders. The EdDiCo consortium sees the proposed model as a **basis for discussion**.

¹ <https://www.calohee.eu/wp-content/uploads/2018/11/4.1-Assessment-Reference-Frameworks-for-Civil-Engineering-Teacher-Education-History-Nursing-and-Physics-FINAL-READER-v2.pdf>

² <https://eddico.eu/outputs/wp1/>

³ <https://ec.europa.eu/jrc/en/digcompedu>

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Dimension 1: Professional Engagement			
Subset 1 Organisational Communication To use digital technologies to enhance organisational communication with learners, parents and third parties. To contribute to collaboratively developing and improving organisational communication strategies. (DigCompEdu)			
Explorer (Level A)	is aware of basic means and digital technologies to enhance organisational communication	makes basic use of digital technologies to enhance communication with learners, parents, colleagues, support staff or third parties relevant to the educational project (e.g. experts to be invited, places to be visited)	interest in improving organisational communication strategies
Expert (Level B)	knows how to use a range of digital technologies to enhance organisational communication and what technology to use it depending on the specific purpose and context	uses different digital communication channels and tools, depending on the communication purpose and context (e.g. via the organisation's website or through corporate digital technologies, platforms or communication services contracted) and adapts his/her communication strategies to the specific audience	responsible attitude, communicating ethically with digital technologies (e.g. respecting netiquette)
Pioneer (Level C)	relies on a broad repertoire of digital technologies and strategies to enhance organisational communication	frequently evaluates, discusses and adapts his / her communication strategies and uses digital technologies to make administrative procedures more transparent for learners and/or parents and to allow them to make informed choices on future learning priorities	reflective approach, collaboratively discussing and re-designing organisational communication strategies, contributing to developing a coherent vision
Subset 2 Professional Collaboration To use digital technologies to engage in collaboration with other educators, sharing and exchanging knowledge and experiences and collaboratively innovating pedagogic practices. (DigCompEdu)			
Explorer (Level A)	is aware of digital technologies that enable collaboration with other educators	makes basic use of digital technologies to collaborate with his/her colleagues (e.g. on a dedicated joint project, or to exchange content, knowledge and opinions)	general interest in using digital technologies to collaborate with other educators
Expert (Level B)	knows various digital technologies and digital communities to collaborate with other educators	uses digital technologies to exchange ideas and resources with other educators and collaboratively develop digital resources with other educators within his/her organisation	explorative approach, curiosity about different ways to collaboratively work with other educators
Pioneer (Level C)	knows how to effectively, responsibly and safely use a wide array of digital technologies to collaborate with other educators and knows the use cases for the different tools	uses digital technologies to collaborate with other educators within and outside one's own institution to share knowledge, experiences and resources, to explore, reflect and develop (innovative) pedagogical practices together. fosters and supports this network of educators and progress in one's own professional development	commitment to digital collaboration with other educators and peer learning as well as strategic approach to communicating and to developing and maintaining partnerships.
Subset 3 Reflective Practice To individually and collectively reflect on, critically assess and actively develop one's own digital pedagogical practice and that of one's educational community. (DigCompEdu)			
Explorer (Level A)	is aware of the limits of his/her own digital competence and his/her development needs	reflects on his/her own digital and pedagogical practice and training needs	critical approach to his/her own digital and pedagogical practice

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Expert (Level B)	knows how to find best practices, courses or other advice to improve his/her own digital and pedagogical practice	critically reflects on his/her own digital and pedagogic practice and identifies competence gaps and uses a range of resources to develop his/her individual digital and pedagogic practices through experimenting and peer-learning scenarios	reflective approach to digital policies and practices at the organisational level, providing critical feedback
Pioneer (Level C)	follows current research on innovative teaching and knows how to integrate research findings into his/her own practice	continuously (collaboratively and) proactively expands and enhances his / her repertoire of digital pedagogical practices and helps others in developing their digital pedagogical competence	commitment to collaboratively reflect on, enhance and innovate educational policies and practices in general

Subset 4

Digital Continuous Professional Development (CPD)

To use digital sources and resources for continuous professional development. (DigCompEdu)

Explorer (Level A)	is aware of online resources that enhance subject-specific or pedagogical knowledge	makes basic use of the internet to update his/her subject specific and pedagogical knowledge	awareness of the potential of online resources for CPD
Expert (Level B)	knows where to find different online resources and learning opportunities for different needs	makes use of various formal and informal learning opportunities for professional development, e.g. conferences, webinars, online learning communities, video tutorials	explorative attitude towards online opportunities for CPD
Pioneer (Level C)	knows how to find a variety of learning resources and opportunities and how to select opportunities that allow him/her to develop particular needs	makes demand-oriented use of digital resources and learning opportunities to enhance knowledge and skills, actively participates in online learning communities and supports others in their professional development (e.g. creating training resources for others)	commitment to taking advantage of the available resources for his/her own CPD and helping others to enhance knowledge and skills as well

Dimension 2: Digital Resources

Subset 1

Selecting digital resources

To identify, assess and select digital resources for teaching and learning. To consider the specific learning objective, context, pedagogical approach, and learner group, when selecting digital resources and planning their use. (DigCompEdu)

Explorer (Level A)	is aware of the potential of digital technologies for finding resources (e.g. common educational platforms which provide educational resources) and knows simple internet search strategies	makes basic use of digital technologies for finding resources (e.g. using simple internet search strategies)	little self-confidence when assessing and selecting digital resources
Expert (Level B)	knows complex criteria to identify suitable resources	assesses and selects digital resources using complex criteria: evaluates the quality of digital resources and their suitability for his/her learner group and specific learning objective and adapts his/her search strategies accordingly	strategic approach to selecting digital resources. commitment to improve available resources by giving feedback and recommendations
Pioneer (Level C)	knows how to comprehensively identify suitable resources	considers all relevant aspects and sources (e.g. collaborative platforms, official repositories) when assessing and selecting resources and promotes the use of digital resources with fellow educators by pointing out strategies and sources as well as sharing his/her own repository of resources. when using resources in class, he/she contextualises them for the students (e.g. by pointing out their source and potential bias)	commitment towards empowering others and promoting digital resources in education among his/her students and colleagues

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Subset 2 Creating and modifying digital resources To modify and build on existing openly-licensed resources and other resources where this is permitted. To create or co-create new digital educational resources. To consider the specific learning objective, context, pedagogical approach, and learner group, when designing digital resources and planning their use. (DigCompEdu)			
Explorer (Level A)	is aware of basic means and tools to create and modify digital resources	uses basic tools (e.g. office software) to create simple digital resources and modifies resources very slightly (e.g. worksheets, quizzes, digital presentations)	interest in the creation and modification processes
Expert (Level B)	knows how to create digital resources enriched with interactive, multimedia elements and how to modify (openly-licensed) digital educational resources as to fit a specific learning context and in line with license requirements.	applies advanced strategies and tools to license-compliantly create and modify digital resources that integrate interactive elements (e.g. animations, links, multimedia, games) and match the particular learning objective and learner group	explorative attitude toward creating and modifying digital resources
Pioneer (Level C)	has comprehensive knowledge of how to (co-)create and modify complex digital resources that match respective learning objectives	creates and modifies complex, innovative, and interactive digital resources and learning activities (e.g. interactive worksheets, online assessments, online collaborative learning activities such as wikis and blogs, games, apps, visualisations) that fit the respective learning objectives and learner groups both individually and in collaboration with colleagues	great creativity and confidence in the process of (co-)creating and modifying digital resources
Subset 3 Managing, protecting and sharing digital resources To organise digital content and make it available to learners, parents and other educators. To effectively protect sensitive digital content. To respect and correctly apply privacy and copyright rules. To understand the use and creation of open licenses and open educational resources, including their proper attribution. (DigCompEdu)			
Explorer (Level A)	knows basic strategies to manage and share digital content. is aware that some digital resources are copyrighted	stores and organises digital content for his/her own future use and shares digital content using basic strategies (e.g. via e-mail attachments or through links)	awareness of data protection, privacy and copyright rules
Expert (Level B)	knows advanced strategies to manage, share and protect digital content	effectively manages and shares digital content (e.g. embedding them into digital environments). correctly references resources affected by copyright and protects personal and sensitive data (e.g. exams, students' reports)	responsible approach to data protection, privacy and copyright rules
Pioneer (Level C)	knows professional strategies to create, manage, share and protect digital content	professionally manages and shares digital content (e.g. compiles comprehensive digital content repositories and makes them available to learners or other educators). digitally publishes self-created resources and attributes (open) licenses to the respective content. effectively protects personal and sensitive data	innovative approach toward managing and sharing digital content. valuing data protection, privacy and copyright rules

Dimension 3: Teaching and Learning			
Subset 1 Teaching To plan for and implement digital devices and resources in the teaching process, so as to enhance the effectiveness of teaching interventions. To appropriately manage and orchestrate digital teaching interventions. To experiment with and develop new formats and pedagogical methods for instruction. (DigCompEdu)			
Explorer (Level A)	is aware of available digital classroom technologies (e.g. digital whiteboards, projectors, PCs)	makes use of basic digital devices and resources in the teaching process	general interest toward digital devices and resources in the teaching and learning process

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Expert (Level B)	knows a variety of digital devices and resources and has advanced knowledge of purposefully integrating them in the teaching and learning process	integrates a variety of digital devices and resources in meaningful and interactive ways into the teaching and learning process. sets up learning sessions or other interactions in a digital environment	curiosity toward the use of digital devices and resources in the teaching and learning process to increase methodological variation
Pioneer (Level C)	has comprehensive knowledge of how digital devices and resources can be purposefully and innovatively integrated and adapted to match specific learning environments	uses a variation of digital devices and resources to create complex and innovative digital learning activities that enhance teaching strategies. continuously evaluates the effectiveness of digitally enhanced teaching strategies and revises his/her strategies accordingly	creative, innovative and flexible approach to using digital devices and resources and adapting teaching methods as seen fit
Subset 2 Guidance To use digital technologies and services to enhance the interaction with learners, individually and collectively, within and outside the learning session. To use digital technologies to offer timely and targeted guidance and assistance. To experiment with and develop new forms and formats for offering guidance and support. (DigCompEdu)			
Explorer (Level A)	knows basic digital technologies and strategies to interact with learners	makes basic use of digital technologies and digital strategies to respond to learners' course-related questions and concerns (e.g. via e-mail or chat)	interest in enhancing interaction with learners
Expert (Level B)	knows advanced digital technologies and strategies for monitoring learner behaviour and assisting learners individually and collectively in the learning process	uses digital technologies to enhance interaction with learners in collaborative digital environments, monitoring their behaviour and providing guidance and support as needed. experiments with new digitally supported forms and formats for offering guidance and support	self-understanding as learning guide. explorative attitude toward guidance provision
Pioneer (Level C)	has comprehensive knowledge of how digital technologies can be strategically and purposefully used to assist learners individually and collectively in the learning process	employs digital technologies strategically and purposefully to provide guidance and support. foresees learners' needs for guidance when setting up a learning environment and remotely monitors student behaviour in order to intervene when needed, while allowing for self-regulation. develops new digitally supported forms and formats for offering guidance and support	innovative and creative approach towards guidance provision
Subset 3 Collaborative Learning To use digital technologies to foster and enhance learner collaboration. To enable learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration and collaborative knowledge creation. (DigCompEdu)			
Explorer (Level A)	knows how digital technologies can be used in collaborative learning activities	when implementing collaborative activities, he/she occasionally encourages learners to use digital technologies to support their work, e.g. for internet search or to present their results.	limited flexibility in adapting planned activities interest in learning how to strategically implement digital technologies into the design of collaborative activities
Expert (Level B)	knows the most popular collaborative activities and digital technologies in terms of limits and opportunities	implements activities, in which digital technologies are used by learners to collaboratively generate knowledge (e.g. to source and exchange information) and to document their collaborative efforts (e.g. digital presentations, videos, blog posts). sets up collaborative activities in a digital environment (e.g. blogs, wikis, moodle, virtual learning environments).	commitment towards empowering learners to collaborate and communicate. explorative approach towards using digital technologies that facilitate collaborative processes.

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Pioneer (Level C)	knows diverse collaborative learning activities and a variety of digital technologies for learners' collaborative knowledge generation and peer assessment	designs and manages diverse collaborative learning activities, where learners use a variety of digital technologies to collaboratively conduct research, document findings and reflect on their learning. uses collaborative learning also as a tool to improve the students' collaborative skills, together with other related skills like negotiation, problem solving, communication	innovative approach, using digital technologies to invent new formats for collaborative learning
Subset 4 Self-regulated learning To use digital technologies to support self-regulated learning processes, i.e. to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights and come up with creative solutions. (DigCompEdu)			
Explorer (Level A)	has basic knowledge of how students could use digital technologies in self-regulated learning activities	encourages learners to use digital technologies (e.g. blogs, diaries, planning tools) in self-regulated learning activities, e.g. for information retrieval or presenting results	general interest in the potential of digital technologies to support self-regulated learning processes
Expert (Level B)	has advanced knowledge of using digital technologies and environments to support self-regulated learning processes	uses digital technologies or environments (e.g. ePortfolios, learner's blogs, diaries, planning tools, audio or video recordings, photos) to allow learners to manage and document all stages of their learning as well as to record and showcase their work uses digital technologies for learner self-assessment and helps learners develop, apply and revise criteria for digitally supported self-assessment	commitment to empower learners to take ownership of their own learning process. explorative approach to using digital technologies to support self-regulated learning processes
Pioneer (Level C)	has comprehensive knowledge of how to use digital technologies and environments to support self-regulated learning processes	critically reflects on the appropriateness of his/her digital strategies to foster self-regulated learning and continuously enhances his/her strategies. develops new digital formats and/or pedagogical approaches for self-regulated learning	creative, innovative and iterative approach to digital strategies that support self-regulated learning processes. self-understanding as role model for students, himself/herself being a continuous learner
Subset 5 Gamification To use gamification elements such as challenges, competitions, points, badges, and leaderboards to make the learning experience more enjoyable and the learning outcome more sustainable. (our own suggestion)			
Explorer (Level A)	knows what digitally supported gamification is and how it applies through specific samples	is able to apply a digitally supported gamified process in teaching and learning situations to improve student's involvement if he/she is provided with the technology	general interest in digitally supported gamification processes
Expert (Level B)	knows the concept behind digitally supported gamification processes and the varieties and opportunities of different gamification offers.	is able to apply a digitally supported gamification process in teaching and learning situations and choose the best technology to obtain the desired learning outcomes	explorative attitude toward selecting technologies that can better drive the digitally supported gamification activities and redesigning learning activities for gamification purposes
Pioneer (Level C)	has a wide knowledge of digitally supported gamification processes in teaching and learning	is able to design, implement and evaluate a digitally supported gamification process regardless of available digital technology and integrates the activities in the whole learning process. uses the potential of digitally supported gamification for motivation, creativity & autonomy of learners, as well as for tolerance towards complexity and failure	creative approach toward creating learner-centric digitally supported gamification processes and exploring new areas for applying digitally supported gamification in learning

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Dimension 4: Assessment			
Subset 1 Assessment strategies To use digital technologies for formative and summative assessment. To enhance the diversity and suitability of assessment formats and approaches. (DigCompEdu)			
Explorer (Level A)	is aware of digital technologies that can be used for or integrated in formative and summative assessment formats	uses digital technologies for traditional assessment strategies (e.g. to create assessment tasks which are then administered in paper-format)	interest in using digital technologies for new forms of assessments
Expert (Level B)	knows a range of digital assessment formats and can identify digital technologies that are suited for formative or summative assessment	uses various digital assessment formats (e.g. quizzes, ePortfolios, games)	eagerness to explore digital technologies for assessment formats
Pioneer (Level C)	can identify and match a variety of digital technologies to formative and summative assessment formats according to the respective use cases. is aware of their benefits and drawbacks	is able to purposefully integrate digital and non-digital assessment formats and develop new innovative digital assessment formats in line with respective learning outcomes. critically reflects on his/her use of digital technologies for assessment and adapts his/her strategies accordingly	creative approach to develop suitable, new forms of assessment strategies and formats
Subset 2 Analysing evidence To generate, select, critically analyse and interpret digital evidence on learner activity, performance and progress, in order to inform teaching and learning. (DigCompEdu)			
Explorer (Level A)	is aware that learner activity and performance in digital environments generates data that can be used to monitor learners' progress	evaluates basic data on learner activity (e.g. attendance) and student performance (e.g. grades) for individual feedback and targeted interventions	general interest in the potential of digital data to inform teaching and learning
Expert (Level B)	knows how digital technologies can be strategically employed to generate and evaluate data on learners' progress	uses, combines and evaluates different sources of evidence on learners' performance and progress: uses digital technologies (e.g. quizzes, voting systems, games) within the teaching process as well as the data analysis tools provided by the digital environments in order to monitor and visualize learner activity as well as better understand individual learners' needs for support	explorative attitude towards data generation tools that can help him/her monitor learners' progress and provide support
Pioneer (Level C)	knows advanced data generation and visualisation methods (e.g. based on learning analytics) as well as their distinct value and appropriateness for data analysis use cases	continuously monitors digital activity and reflects on and synthesises digital learner data to identify learning patterns and adapt his/her teaching strategies. critically assesses and discusses the value and validity of different data sources as well as the appropriateness of common methods used for data analysis	great commitment to a holistic approach to data generation and evaluation
Subset 3 Feedback and planning To use digital technologies to provide targeted and timely feedback to learners. To adapt teaching strategies accordingly and to provide targeted support, based on the evidence generated by the digital technologies used. To enable learners and parents to understand the evidence provided by digital technologies and use it for decision-making. (DigCompEdu)			
Explorer (Level A)	is aware of digital tools that can be used to provide feedback to learners	uses digital technologies to put together a record of learners' progress and consult when providing feedback	interest in providing personal feedback

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Expert (Level B)	knows how to grade and provide feedback to learners by means of digital technologies	uses digital technologies to provide personal feedback and transparency on progress made, providing differentiated support to learners and adapt his/her teaching strategies according to the data generated by digital technologies used	commitment to providing personal feedback and adapting teaching strategies according to learner data
Pioneer (Level C)	knows what / how digital technologies can provide personalized feedback and knows how to analyse digital data on learners	provides personalized feedback and adapts teaching according to learner data; enables students to understand and use the feedback provided to jointly create individual learning plans	flexibility to re-design and innovate teaching strategies in a tailored way according to data on learner preferences and needs as well as the effectiveness of different teaching and learning formats
Subset 4 (Micro-) Credentialisation To design badges/credentials that contain all the available information to facilitate recognition (of intermediate achievements). (our own suggestion)			
Explorer (Level A)	is aware of the process of designing micro-credentials on the levels of micro and macro curriculum level and the links and meta-data between the credential and digital curriculum in a virtual learning environment	uses existing systems to issue digital credentials. designs micro-credentials on the levels of micro and macro curriculum level and the links and meta-data between the credential and digital curriculum in a virtual learning environment	interest in the potential of micro-credentials to support the principles of learning outcome recognition and ECTS transfer among EHEA
Expert (Level B)	has advanced knowledge on the process of designing micro-credentials on the levels of micro and macro curriculum level and is able to explain the links and meta-data between the credential and digital curriculum in a virtual learning environment	uses and explains a credentialing systems to issue digital credentials. consults on the process of designing digital credentials and peer-reviews micro-credentials developed on the micro and macro curriculum level and reviews as well as updates the meta-data for credentials on learning outcomes, assessment method, EQF level etc. from IT systems such as the digital curriculum in a virtual learning environment	curiosity towards digital and micro-credentials as a means to support the principles of learning outcome recognition and ECTS transfer among the EHEA
Pioneer (Level C)	has comprehensive knowledge of the process of designing micro-credentials on the levels of micro and macro curriculum level and the links and meta-data between the credential and digital curriculum in virtual learning environment	continuously monitors digital activity and reflects on and synthesises digital learner data to identify learning patterns and adapts his/her teaching strategies. critically assesses and discusses the value and validity of different data sources as well as the appropriateness of common methods used for data analysis	commitment towards empowering colleagues in designing digital and micro-credentials as a means to support the principles of learning outcome recognition and ECTS transfer among the EHEA
Subset 5 Recognition To judge information provided in learning credential and additional information to recognize skills and competences towards a larger credential. (our own suggestion)			
Explorer (Level A)	knows the institutional guidelines and tools for recognition of formal and non-formal learning	compares documented achievements and assessment methods with the learning outcomes or competences to be recognised. checks the validity of a credential. converts the grade, documents and communicates the recognition decision. applies the institutional guidelines and tools for recognition of formal and non-formal learning	positive attitude towards recognition of formal and non-formal learning

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Expert (Level B)	knows both the institutional guidelines and tools and the relevant principles and regulations for recognition of formal and non-formal learning	trains and consults on the processes for recognition of formal and non-formal learning. designs curricula to support recognition. prepares and signs credit recognition agreements. provides information to learners on open learning and how it can be recognised. applies the institutional guidelines and tools for recognition of formal and non-formal learning	commitment to convince colleagues of the advantages of recognition. advocacy for transparent and easy-to-follow processes for recognition in his/her institution
Pioneer (Level C)	knows and improves the institutional guidelines and tools and the in the light of recent discussions and updates of the relevant principles and regulations for recognition of formal and non-formal learning	explains, creates, implements and continuously improves institutional procedures and tools for recognition, such as clearly defined and harmonized processes for recognition, recognition database, data standards and digital information exchange, information to learners about open learning and how it can be recognized, stakeholder involvement. shares and discusses experiences and developments with the relevant community	commitment to ensure that the same level of criteria for recognition is applied across the institution and to (further) develop a recognition database within his/her institution

Dimension 5: Empowering Learners			
Subset 1 Accessibility and inclusion To ensure accessibility to learning resources and activities, for all learners, including those with special needs. To consider and respond to learners' (digital) expectations, abilities, uses and misconceptions, as well as contextual, physical or cognitive constraints to their use of digital technologies. (DigCompEdu)			
Explorer (Level A)	is aware of accessibility and inclusion issues in digital learning environments and the importance of ensuring equal access to the digital technologies used for all students. is aware that digital technologies can hinder or improve accessibility	does not yet implement digital technologies and pedagogical strategies to foster accessibility and inclusion	concern about accessibility and inclusion in digital education
Expert (Level B)	knows digital pedagogical strategies that adapt to learners' digital contexts (e.g. limited usage time, type of device available). is aware that compensatory digital technologies can be used for learners in need of special support (e.g. learners with physical or mental constraints; learners with learning disorders)	ensures that all students have access to the digital technologies he/she uses. employs digital technologies and strategies (e.g. assistive technologies) designed for learners' in need of special support (e.g. learners with physical or mental constraints; learners with learning disorders, visually or hearing impaired learners)	explorative attitude toward digital technologies and pedagogical strategies designed for learners' in need of special support
Pioneer (Level C)	knows digital pedagogical strategies that are fitted to learners' digital technology uses, competences, expectations, attitudes, misconceptions and misuses and ensure accessibility and inclusion	enhances accessibility and inclusion by employing digital pedagogical strategies that correspond with learners' technology uses, competences, expectations, attitudes, misconceptions and misuses and by employing design principles for increasing accessibility (e.g. as concerns font, size, colours, language, layout, structure). continuously reflects on the suitability of the measures implemented to improve accessibility. re-designs and innovates strategies accordingly	reflective, innovative and learner-centric approach towards digital technologies and pedagogical strategies that foster accessibility and inclusion in digital education

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Subset 2 Differentiation and personalisation To use digital technologies to address learners' diverse learning needs, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives. (DigCompEdu)			
Explorer (Level A)	is aware that digital technologies can support differentiation and personalisation (e.g. by providing activities at different levels and speeds)	does not use digital technologies yet to address the special needs of individual learners (e.g. dyslexia, ADHD, overachievers)	interest in learning about how digital technologies can help him/her offer personalised learning opportunities
Expert (Level B)	knows different strategies for differentiation and personalisation, using digital technologies	flexibly uses different digital technologies in order to select, design and implement learning activities that allow learners to proceed at different speeds, select different levels of difficulty and/or repeat activities previously not solved adequately (e.g. quizzes or serious games)	flexibility to adapt his/her strategies to changing circumstances or needs
Pioneer (Level C)	knows a range of strategies for differentiation and personalisation, using digital technologies	designs, in collaboration with learners and/or parents, personalised learning plans which allow all learners to follow their individual learning needs and preferences, with the aid of appropriate digital resources	innovative approach, reflecting on, discussing and re-designing pedagogic strategies for personalising education through the use of digital technologies
Subset 3 Actively engaging learners To use digital technologies to foster learners' active and creative engagement with a subject matter. To use digital technologies within pedagogic strategies that foster learners' transversal skills, deep thinking and creative expression. To open up learning to new, real-world contexts, which involve learners themselves in hands-on activities, scientific investigation or complex problem solving, or in other ways increase learners' active involvement in complex subject matters. (DigCompEdu)			
Explorer (Level A)	has basic knowledge of how to use digital technologies and digital learning activities to motivate and engage learners	uses digital technologies to visualise and explain new concepts in a motivating and engaging way (e.g. by employing animations or videos). Employs digital learning environments or activities which are motivating and engaging (e.g. games, quizzes)	openness towards new tools for enhancing engagement of learners, yet hesitancy to apply those
Expert (Level B)	knows about available digital technologies and suitable teaching strategies that foster learners' active and creative engagement with the subject matter	facilitates active learning by selecting appropriate digital technologies and teaching strategies. Uses a range of digital technologies to create a relevant and effective digital learning environment (e.g. by addressing different sensory channels, learning styles and strategies or by methodologically varying activity types and group compositions)	explorative and reflective approach toward combining digital technologies and new teaching/learning methods
Pioneer (Level C)	has comprehensive knowledge of (innovative) digital strategies for actively engaging learners	critically reflects on how suitable the different digital technologies used are in increasing learners' active learning and adapts strategies and choices accordingly, discusses, re-designs, innovates and experiments with pedagogic strategies for actively engaging learners	self confidence and innovative approach towards creating and assessing new ideas of engaging learners, supported by digital technologies
Subset 4 Agile working To empower learners in an interdisciplinary team to collaboratively develop a rapid prototype of problem solving, that creates value for the user, by employing agile and iterative methods. (our own suggestion)			

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Explorer (Level A)	is aware of agile methods and their potential to empower students to work collaboratively and iteratively on user-centric prototypes	makes basic use of digital technologies and agile methods to motivate students and prepare them to adapt to changes (e.g. using flexible learning environments and digital technologies to support active and collaborative learning)	interest in the potential of agile methods for student learning processes
Expert (Level B)	knows various agile methods and digital technologies to facilitate an agile classroom as well as the agile philosophy to encourage learners and foster growth	actively employs agile methods by effectively embedding them into the learning and teaching processes. uses collaboration, communication and innovation tools and employs innovative practices (e.g. using real-life challenges) to boost creative thinking and preparedness of learners	flexibility in creating agile and collaborative learning settings for students
Pioneer (Level C)	knows a variety of agile methods, use cases, digital technologies and pedagogical strategies that enable collaborative team work and user-centric prototyping in multidisciplinary learning environments	develops innovative pedagogical techniques that create an environment focused on supporting students in developing adaptive skills and working collaboratively and iteratively in various multidisciplinary team constellations (e.g. creates together with learners collaborative idea labs using emerging technologies such as virtual reality spaces)	entrepreneurial attitude and creative approach towards fostering agile and collaborative learning environment

Dimension 6: Facilitating Learners' Digital Competence			
Subset 1 Information and media literacy To incorporate learning activities, assignments and assessments which require learners to articulate information needs; to find information and resources in digital environments; to organise, process, analyse and interpret information; and to compare and critically evaluate the credibility and reliability of information and its sources. (DigCompEdu)			
Explorer (Level A)	knows basic strategies fostering learners' information literacy	encourages learners to use digital technologies for information retrieval (e.g. on assignments)	interest and supportive approach, encouraging learners how to use digital technologies for information retrieval
Expert (Level B)	knows a range of pedagogic strategies to foster learners' information and media literacy	implements learning activities that enable learners to analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. Guides learners in adapting search strategies based on the quality of information found. Encourages learners to meaningfully combine information from different sources and teaches them how to quote sources appropriately. Incorporates learning activities that require learners to organise, store and retrieve data, information and content in digital environments	explorative and empowering approach towards fostering learners' information and media literacy
Pioneer (Level C)	knows innovative pedagogic strategies to foster learners' information and media literacy	critically reflects on how suitable pedagogic strategies are in fostering learners' information and media literacy and adapts strategies accordingly	innovative approach, reflecting on, discussing and re-designing pedagogic strategies to foster learners' information and media literacy
Subset 2 Digital communication & collaboration To incorporate learning activities, assignments and assessments which require learners to effectively and responsibly use digital technologies for communication, collaboration and civic participation. (DigCompEdu)			

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Explorer (Level A)	is aware of the potential of digital technologies for communication and collaboration within and among various status groups	encourages learners to use digital technologies to interact with other learners, with their educators, management staff and third parties	openness towards digital technologies and pedagogic strategies to foster learners' digital communication and collaboration
Expert (Level B)	knows a range of pedagogic strategies to encourage learners to use digital technologies for communication, collaboration and civic participation	implements learning activities and employs pedagogic strategies in which learners use digital technologies for communication and collaboration. guides learners in respecting behavioural norms, adapting communication strategies to the specific audience and being aware of cultural and social diversity in digital environments. supports and encourages learners to use digital technologies to participate in public discourses and for civic participation	strategic approach towards fostering learners' digital communication and collaboration and encouraging learners to participate in society through the use of digital technologies
Pioneer (Level C)	knows innovative pedagogic strategies to foster learners' digital communication and collaboration	transforms acquired knowledge about digital technologies, methods and strategies to support learner's interactivity and participation into practice. incorporates learning activities which encourage and require learners to use digital technologies for communication and collaboration, knowledge and resources co-creation, and civic participation. reflects on, discusses, re-designs and innovates pedagogic strategies for fostering learners' digital communication and collaboration and adapts strategies as a result of his/her learner-centric reflections. guides learners in creating and managing one or multiple digital identities and in protecting one's own reputation	reflexive stance and innovative attitude-toward pedagogic strategies that foster learners' digital communication and collaboration
Subset 3 Digital content creation To incorporate assignments and learning activities which require learners to express themselves through digital means, and to modify and create digital content in different formats. To teach learners how copyright and licenses apply to digital content, how to reference sources and attribute licenses. (DigCompEdu)			
Explorer (Level A)	is aware of the potential of digital technologies to create content	encourages learners to create digital content such as texts, images, videos as a form of self-expression	positive attitude to the use of digital technologies to produce content
Expert (Level B)	knows-a range of pedagogical strategies to help students create elementary digital content. has a good knowledge of privacy and copyright rules	implements learning activities and employs pedagogic strategies as needed to enable learners to produce and share digital content by using digital technologies. enables learners to understand the concept of copyright and licenses and consider it when creating or re-using digital content	proactive and encouraging attitude towards the creation and appropriate sharing/re-sharing of digital content and alertness to copyright and licence issues

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Pioneer (Level C)	has comprehensive knowledge of pedagogic strategies, digital technologies and platforms as well as publishing and licensing rights that enable learners to produce complex digital content	guides learners in designing, re-using, publishing and licensing complex digital content (e.g. websites, blogs, games, apps) by using innovative formats. reflects on, discusses, re-designs, innovates and adapts his / her teaching strategies to the specific needs of learners. applies his / her copyright and license knowledge with the help of digital technologies e.g. for detecting and counteracting plagiarism	self-understanding as a guide for learners' responsible creation of digital content as a means for self-expression
Subset 4 Responsible use To take measures to ensure learners' physical, psychological and social wellbeing while using digital technologies. To empower learners to manage risks and use digital technologies safely and responsibly. (DigCompEdu)			
Explorer (Level A)	is aware that digital technologies can positively and negatively affect learners' physical, psychological and social wellbeing	fosters learners' awareness of the benefits and drawbacks of digital technologies and the openness of the internet	concern for learners' wellbeing, encouraging learners to use digital technologies safely and responsibly
Expert (Level B)	knows how to implement relevant measures and pedagogically support learners' use of digital technologies to ensure their wellbeing	gives practical and experience-based advice on how to protect privacy and data (e.g. using passwords, adjusting the settings of social media). assists learners in protecting their digital identity and managing their digital footprint and develops strategies to prevent, identify and respond to digital behaviour that negatively affects learners health and wellbeing (e.g. cyberbullying). encourages learners to assume a positive attitude and alertness towards digital technologies	supportive approach, encouraging learners to assume a positive attitude towards digital technologies, being aware of possible risks and limits, but confident in their self-effective navigation skills
Pioneer (Level C)	knows a variety of pedagogic strategies to foster learners' ability to use digital technologies responsibly, safely, and for their own wellbeing	enables learners to understand risks and threats in digital environments (e.g. identity theft, fraud, stalking, phishing) and how to react appropriately. critically reflects on, discusses, re-designs, innovates and flexibly adapts his/her pedagogic strategies to both foster learners' digital wellbeing and their ability to use digital technologies for their own wellbeing	innovative and empowering approach towards pedagogic strategies that foster learners' wellbeing and learners' ownership for it
Subset 6 Digital problem solving To incorporate learning and assessment activities which require learners to identify and solve technical problems or to transfer technological knowledge creatively to new situations. (DigCompEdu)			
Explorer (Level A)	is aware of digital technologies and strategies to foster learners' digital problem solving	encourages learners to solve technical problems using trial and error and to transfer their digital competence to new situations	interest in implementing learning activities that encourage learners to use digital technologies to solve problems
Expert (Level B)	knows a range of pedagogic strategies to foster learners' digital problem solving	implements learning activities in which learners use digital technologies creatively, expanding their technical repertoire and provide peer-support to fellow learners. uses different pedagogic strategies to enable learners to apply their digital competence to new situations or in new contexts empowers learners to identify competence gaps and develop strategies for competence development	supportive attitude and belief in learners' ability to be drivers of their own and their peers' competence development

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Pioneer (Level C)	has comprehensive knowledge of innovative pedagogic strategies and formats to foster learners' digital problem solving	creates and implements learning activities which enable learners to seek out different, creative technological solutions to a problem, investigate their benefits and drawbacks and critically and creatively come up with a new solution or product. reflects on, discusses, re-designs, innovates and adapts pedagogic strategies that foster learners' digital problem solving skills	innovative and iterative approach to foster learners' digital problem solving skills

Dimension 7: Health			
Health To be aware of health impact when using digital technologies, and able to communicate, interact or intervene with regard to physical or mental health of learners as well as oneself, being educator. To discover and prevent potential hazards and contribute to improvements. (our own suggestion)			
Subset 1 Dealing with Health Information and Health Conditions To be aware of health impact of digital technologies and able to explore up to date health-related information. To monitor own and learners' situation and apply evaluated information for framing meaningful use of digital technologies in learning processes. (own suggestion)			
Explorer (Level A)	is aware that digital technologies can have an impact on both one's own and learners' health and knows how to access available health-related information	matches and evaluates one's own and learners' situation with available health-related information	commitment to foster one's own and learners' health, based on an open and unbiased approach; general interest in health impact implied by use of digital technologies
Expert (Level B)	understands special issues of health impact by digital technologies and knows about support schemes or points of contact	continuously monitors one's own and learners' health conditions based on evaluated health information and integrates evaluated perception of own and learners' health condition and situation into professional routines when using digital devices and methods	eagerness to regard own and learners' health crucial for teaching and learning processes, based on responsible and explorative approach; critical monitoring of health information
Pioneer (Level C)	has comprehensive knowledge of health issues related to use of digital technologies as well as of methods to assess own or learners' situation with foresight.	anticipates future impact of digital technologies on own and learner's health condition and creates up to date health-related information	creative approach to perception, evaluation and further exploration of health-related impact of digital technologies; commitment to improve information base as well as health conditions of learners and self
Subset 2 Interaction and Intervention To support healthy use of digital technology, and maintain positive interaction with learners or peers regarding health issues. To offer or seek support if evidence requires. (our own suggestion)			
Explorer (Level A)	knows basic criteria for intervention as well as first steps of assistance for learners/educators at risk of health issues related to use of digital technologies	maintains positive communication/interaction with learners, colleagues/peers regarding own or learners' health situation; transfers and applies criteria for meaningful intervention to actual situation/condition of learner(s) or self	open mindedness towards communication interaction regarding personal issues of self or learners; awareness of urgency for supporting learners or colleagues in dealing with health impact of digital technologies
Expert (Level B)	knows how to assess situation of learner(s) or self, based on scaled criteria for intervention and knows where to get support if evidence requires (colleagues/peers, third parties)	supports learners' healthy use of digital technology and offers personal support if evidence requires; seeks personal support from colleagues/peers for own issues, and gets third party consultancy, if evidence requires; actively assists learners or organises (instant) medical/psychological support relates (digital) formats for communication/interaction regarding health impact of digital technologies; assesses situation of learner(s) or self, based on scaled criteria for intervention	sympathy and empathy for learners' personalities including physical and mental health issues; self-confidence for communicating own physical or mental health issues; readiness to actively assist and support learners or colleagues in issues related to health impacts of digital technologies

	Knowledge	Skills (Application of knowledge)	Autonomy and Responsibility (Attitudes)
Pioneer (Level C)	continuously expands knowledge about strategies and methods of communication/interaction related to health impact of digital technologies; knows how to intervene personally in different situations of learners or educators with regard to health issues related to use of digital technologies	systematically integrates interaction for in situ rectification of own and learners' health condition/ situation; intervenes actively, appropriately and immediately with effective measures if evidence requires, or sensibly supports and complements third parties in their intervention for assisting learners with health issues deriving from use of digital technologies	supportive towards creating a positive and open minded culture of communication / interaction in the respective learning environment (including learners and educators); feeling responsibility for appropriate intervention in all areas of health related to use of digital technologies
Subset 3 Improvement of Conditions and Prevention To explore, discuss and implement measures and improvements regarding learners' and own health. To foster own and learner's ability to employ digital technologies tech for sake of health. (our own suggestion)			
Explorer (Level A)	knows about basic options of monitoring, controlling and handling the use of digital technologies with regard to health of learners or self	appraises how basic options of monitoring, controlling and handling the use of digital technologies can create better conditions when using these technologies.	prepared for discussing health situation/conditions and options for prevention/improvement
Expert (Level B)	knows how to evaluate and determine which organisational, pedagogical and technological options could minimize negative health impact by digital technologies	raises awareness of health impact by digital technologies; uses organisational, pedagogical and technological knowledge for implementation of measures preventing hazards and improving conditions of health impact by digital technologies	explorative attitude towards new concepts and methods with regard to reduce negative health impact of digital technologies; foster own and learners' ability to control and employ digital technologies for sake of health
Pioneer (Level C)	has knowledge of possible future conditions/situations as well as available state of art options; continuously explores suitable methods for future controlling and handling of situations; knows about potential of digital technologies for monitoring and control of health	anticipates and conceptualises future health support and create feasible solutions for improving physical & mental health situation/conditions of learners and educators	strategic aim for sustainable prevention of hazards to users of digital technologies in education; ethical responsibility for generating a beneficial and healthy future prospecting that use of digital technology will increase



About the EdDico Project

With the advent of each new technology come predictions of fundamental changes in education. Yet few of these changes have been realized. Digital learning may indeed be the technology that breaks that pattern, but this will only come to pass if educators are empowered to take advantage of the technologies and methodologies available to them. The EdDiCo project aims at empowering individual educators to

- identify the potential technology holds to transform and improve the education they offer,
- identify the digital competences they would need to acquire to take advantage of those technologies and associated methodologies;
- find the educational resources necessary to acquire those competences.



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