

i-WOBAL

ANNEX I - Glossary

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Dual Education and Work-Based Learning

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1. Basic Concepts (Definition of Terms)

This approach involves superimposing a conceptual definition of Work-Based Learning (WBL) in higher education, onto those of ‘skills’, ‘competences’, and ‘competencies’. Skills and competences are the primary conceptual working blocks for developing Dual Education and Work-Based Learning further.

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| <p>1. Skills: ‘... skills are the ability and capacity to carry out processes and to be able to use one’s knowledge in a responsible way to achieve a goal. Skills are part of a holistic concept of competency, involving the mobilisation of knowledge, skills, attitudes and values to meet complex demands’ (OECD, 2019, p. 4). <i>Future skills</i> refer to future requirements of labour markets.</p> |
| <p>2. Competences: <i>Competences</i> can be understood in terms of ‘meta-skills’, which <i>enhance</i> reflection about, complex application and further development (learning) of skills.</p> |
| <p>3. Competencies: Should a distinction be made between competences and <i>competencies</i>, then competencies may be regarded as the ability and attitude to use skills and competences (meta-skills), but also as the ability to reflect on and develop further skills and competences (meta-skills).¹</p> |
| <p>4. Dual Education (in higher education): Dual Education focuses on (higher) education systems (academic sectors) and encourages the employability of graduates. One idea of Dual Education is to study and work simultaneously. Dual Education seeks to enhance skills (and competences and competencies) with a view to support students and graduates when they enter the labour market, to ensure progress in their work-based learning process. Skill enhancement refers to the current and future requirements of labour markets. Dual Education contributes to <i>innovation</i>. There are</p> |

¹ It could be argued that OECD reports do not really distinguish between competences and competencies. In fact, the OECD refers primarily to ‘skills’ and ‘competencies’.

various forms of organisational and institutional arrangements for Dual Education in higher education.

5. Work-Based Learning (WBL): Work-Based Learning focuses on the economy and society. Work-based learning addresses all processes and forms of learning in the labour market and the work environment. *Students and graduates of Dual Education are supported in the enhancement of their skills (and competences and competencies) in ways that allow them to engage in work-based learning, which develops their skills further. This adds to innovation.* Work-based learning in the labour market complements the Dual Education in (higher) education.

6. Academic facilitator: Academic facilitators are based in the academic organisation. They provide academic support for students and graduates throughout their Work-Based Learning. They liaise with partner companies (or other placement organisations), and reflect on whether Work-Based Learning is taking place for the students (graduates) involved. This entails ensuring that the way that students and graduates develop work-based skills and competences (competencies) enable their practical application in the workplace. Academic facilitators report to the academic organisation if and how the WBL programme must be adapted, and how it can be developed further (for example, in terms of the curriculum, teaching and pedagogical resources). These are continuous processes that feed into academic innovations. The academic facilitator (facilitating academic innovation) is in regular contact with the company facilitator. The role of the academic facilitator requires specific skills and competences (competencies).

7. Company facilitator: Company facilitators are based in the company. A company is defined as any firm or organisation hosting a placement. The company facilitator supports the students and graduates throughout their WBL process (and possibly thereafter) in the specific (practical) work environment within the company. They focus on ensuring that students (graduates) can apply and further develop their skills and competences (competencies), so that Work-Based Learning effectively takes place. This requires continuous reflection on the experiences within the placement. Company facilitators report to the cooperating academic organisation on whether the WBL programme must be adapted, and how the Dual Education programme can be developed further on an ongoing basis (for example, with

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a focus on the skills and competences to be enhanced for students and graduates). They forward their reflections on to the ‘hosting company’ and address opportunities for innovation. The company facilitator (facilitating company innovation) is in regular contact with the academic facilitator. The role of company facilitator requires specific skills and competences (competencies).

8. Learning (more generally framed): Learning addresses the acquisition of new competences. *Learning is a process in which further skills, competences and competencies are developed.* Experience is a crucial resource in this process. This requires that skills and competences be continuously reflected upon. *Learning in the context of Work-Based Learning involves skills and competences (competencies) being furthered to promote genuine improvement in how students and graduates perform in the labour market.* Innovation is therefore not only a goal, but an actual achievement. In these cases, the process entails *learning to learn*.

2. Our Approach

The approach used to develop specific conceptual definitions for Dual Education, Work-Based Learning and skills (and competences, competences) resulted from a literature review. The aim here is to provide key narratives which will be illustrated below

2.1. Dual Education

Dual Education is defined as a form of higher education that focuses on the employability of graduates in different sectors and fields of practice. This calls for a study programme specifically aimed at promoting competences among graduates that support their ability to work in different contexts. The results are the structures and processes of Dual Education in higher education, where institutions are cooperating and networking with firms and organisations in both society and the economy. This entails that practitioners can become involved in higher education teaching, for example. The aim is to make the boundaries between higher education and the social and economic contexts more ‘transparent’ and to promote links between higher education, society and the economy (Campbell et al., 2023). Dual education is designed to support innovation (Carayannis and Campbell, 2021).

There are a number of factors involved in the concept of Dual Education (in higher education). A key factor is employability, which refers to the ability for graduates to find employment after graduation, which reflects the qualifications, skills and achievements acquired during their studies. In Europe, this has been promoted by the European Commission (2021) through the ‘Bologna Process’.

Through the involvement of companies, Dual Education settings enhance students’ competence levels through demand-oriented teaching and learning models. By interacting with companies during their studies, students become prepared for better employment opportunities in the future. Dual Education has several benefits.

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Employers have more opportunities to test and select the right graduates for open positions. In addition, students gain real-world insights and learn more about the world of work while studying. Moreover, it means that matching needs in the recruitment process is not limited to written applications, interviews or evaluation methods.

However, there are also some challenges associated with Dual Education: the different academic and corporate cultures can lead to organisational, teaching and learning challenges for students. The specific settings and the cooperation between different institutions may lead to additional costs that should be taken into account. Additional common governance structures between the bodies involved also need to be put in place to manage complexity and overcome structural and/or cultural differences in the implementation of these programmes. Dual Education requires both strong commitment and financial support from the world of work.

Higher education institutions often do not have sufficient budgets to cover the additional costs of Dual Education. As well as the legal challenges that it entails, some quality issues related to curriculum design and implementation can also arise as focal points during the planning and execution phases. In summary, the barriers to the future development of Dual Education are related to the cost of organising dual programmes; limited admissions to organisations for large numbers of students; reluctance of organisations to take on and/or pay students; government policies; and the resources needed to support Dual Programmes when legal, qualitative and curricular challenges arise. However, in view of the current status and future development of dual study programmes, it is to be expected that they will continue to grow in the 21st century due to their important role in the development of practical skills.

Following Campbell et al. (2023), two innovative examples of organisational design in European higher education are:

1. Baden-Wuerttemberg Cooperative State University (DHBW) (<https://www.dhbw.de/english/home>):

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- This is a more ‘radical’ concept than the established universities of applied sciences (UoAS), or German ‘Hochschulen für angewandte Wissenschaften’).
- There is a consortium of companies that belongs to the DHBW.
- The consortium ‘selects’ the students to be sent to study.
- Prerequisite: Each student is already ‘employed’ by one of the participating companies. Therefore they do not need to look for a job.
- The company sees these dual programmes as a form of professional human resource development and is also committed to providing supportive framework conditions. This is checked and controlled by the DHBW.

2. ‘Proakademia’: (Doctoral) School for Entrepreneurship with the Tampere University of Applied Sciences (<https://proakademia.fi/en/home/>):

- The school simulates an incubator for real entrepreneurship.
- Students and doctoral candidates are trained in entrepreneurial competences.
- Students set up ‘student companies’ or at least their essential components. They consist of teams of about 20 students (‘teampreneurs’).
- Students carry out real business projects involving real financial resources and actual customers.
- In addition, students receive intensive training.
- After they complete their programme, about 40% of graduates remain as active entrepreneurs.

2.2. Work-Based Learning

The OECD (2023c) provides the following definition for Work-Based Learning: ‘WBL is often seen as a powerful vehicle for developing workplace skills and promoting productivity of the labour force. Realising the potential of work-based learning requires firms and trainees to engage in work-based learning that effectively increases productivity. The development of WBL systems often creates large challenges, in engaging the employers that must provide the work

placements, in making apprenticeship attractive to young people who might otherwise pursue academic studies, and in delivering skills that are not only immediately valuable but support career development'. Work-Based Learning also emphasises branching out into new directions for adult learning (OECD, 2023d, consequently also promoting lifelong learning.

Another report developed the argument in similar terms (CEDEFOP, 2022, p. 7): 'Work-based learning refers to all forms of learning that takes place in a real work environment. It provides individuals with the skills needed to obtain and keep jobs and progress in their professional development. Apprenticeships, internships/traineeships and on-the-job training are the most common types of work-based learning.' Further developments in WBL are also envisaged (CEDEFOP, 2022, p. 9): 'In the longer term, a more systematic and holistic approach to WBL will be needed, one that goes beyond its contribution to higher productivity, sustained growth and competitiveness, and embraces its potential for environmental sustainability.'

Patrick et al. (2008) defined Work-Based Learning (WBL) as '... career-focused learning which integrates theoretical knowledge with workplace practical application, within a vocationally designed curriculum'. In addition, WBL can be distinguished from other forms of learning-for-work through an emphasis on integrative aspects of such learning. Therefore, Work-Based Learning thus could be described as 'an educational approach that aligns academic and workplace practices for the mutual benefit of students and workplaces'. Remote Work-Integrated Learning (WIL) introduces further innovative components (Wood et al., 2020).

Learning and innovation are often seen to be related to each other. More generally framed, a 'learning process' can be defined as 'a process where knowledge is being used for the purpose of a (new) application and where also (new) knowledge is being created and where an improvement, betterment, advancement, or a reform are being (or were) achieved'. (Campbell and Pantelić, 2020, p. 3). Consequently, it may be said that: 'A learning process is an innovation process, leading to improvement. Or alternatively

formulated: in innovation processes, leading to an improvement, there is learning involved’ (Campbell and Pantelić, 2020, p. 3).

2.3. Skills and Competences

The future of education and work are often interlinked and regarded as related processes (Bast et al., 2019). The OECD frequently associates skills with labour market requirements. Along these lines, the OECD has started a new initiative called ‘The Future of Work’ (OECD, 2023). In this regard, the OECD (2023, cover page) states: ‘The future of work is now. Digitalisation and globalisation have sparked radical shifts in how we live and work. The coronavirus (COVID-19) crisis has accelerated these beyond anything we could have imagined. These changes raise essential questions about the precarity of our jobs, the support available if we're unable to work or retire, the skills we need for current and future jobs, the quality of those jobs, and what voice we have in shaping these outcomes’ (also see OECD, 2021).

The OECD provided the following core definition for skills: ‘... skills are the ability and capacity to carry out processes and to be able to use one’s knowledge in a responsible way to achieve a goal. Skills are part of a holistic concept of competency, involving the mobilisation of knowledge, skills, attitudes and values to meet complex demands’ (OECD, 2021, p. 4).

In connection with the OECD Learning Compass 2030 (OECD, 2018), a distinction was made between three types of skills:

- cognitive and meta-cognitive skills, which include critical thinking, creative thinking, learning-to-learn and self-regulation
- social and emotional skills, which include empathy, self-efficacy, responsibility and collaboration
- practical and physical skills, which include using new information and communication technology devices (OECD, 2021, p. 4).

More recently, the OECD has emphasised **‘transformative competencies’**: ‘To meet the challenges of the 21st century, students need to feel that they can help shape a world where well-being and sustainability – for themselves, for others, and for the planet – is achievable. The OECD Learning Compass 2030 identifies three “transformative competencies” that students need in order to contribute to our world and shape a better future: creating new value, reconciling tensions and dilemmas, and taking responsibility.’ (OECD, 2023e). Consequently, the OECD (2019b, p. 4) regards ‘transformative competencies’ as key competencies that are ‘types of knowledge, skills, attitudes and values students need to transform society and shape the future for better lives’. These transformative competencies are clearly associated with the forms of Work-Based Learning that embrace environmental sustainability (CEDEFOP, 2022).

Ulf-Daniel Ehlers (2020a and 2020b) provided the following reasoning on skills and competences. His primary point of departure were future skills. As Ehlers (2020a, p. 52) noted: ‘The term ‘Future Skills’ is defined as the ‘ability to act successfully on a complex problem in a future unknown context of action’. It refers to an individuals’ disposition to act in a self-organised way, visible to the outside as performance’. Ehlers (2020a, p. 57) also provided a useful graphic outline of this scope of action:

Figure: Future Skills.

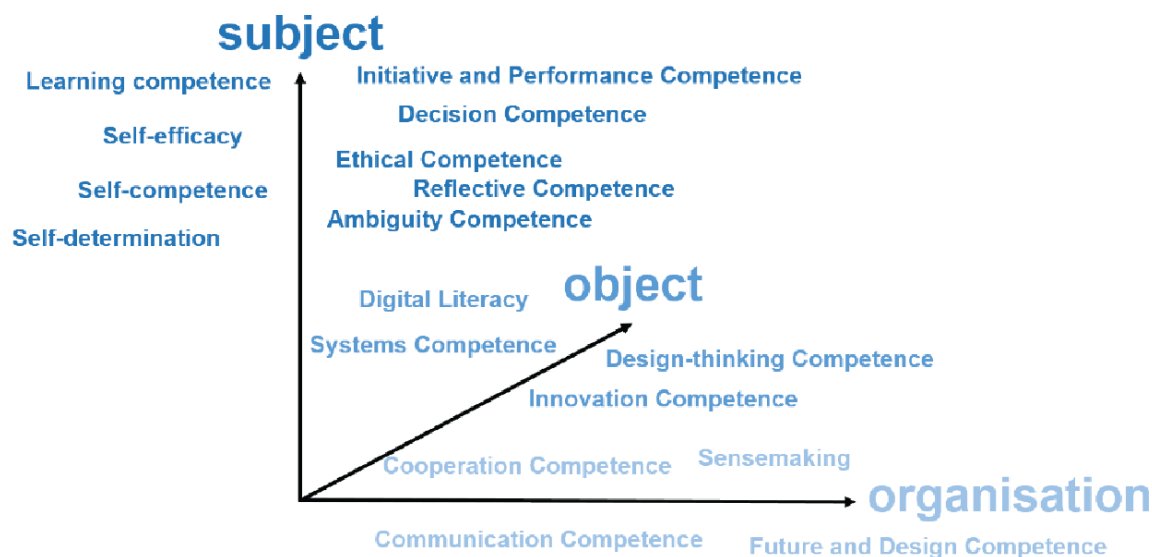


Fig. 13 *Future Skills* space of action

Source: Ehlers (2020a, p. 57).

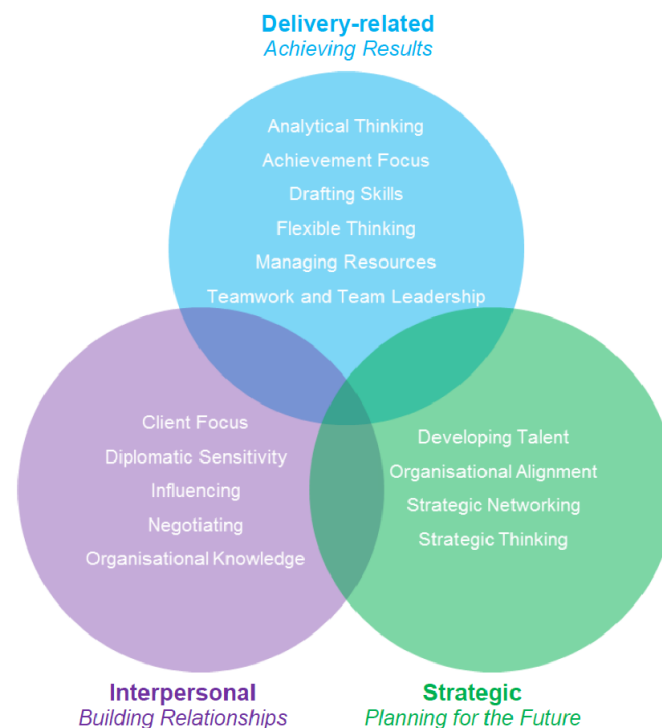
Ehlers identified the following four key drivers:

‘There are two content and curriculum related drivers (i.e. (1) personalised higher education, and (2) Future Skill focus), and two organisation-structure-related drivers (i.e. (1) multi-institutional study pathways, (2) Lifelong Higher Education)’ (Ehlers, 2020a, p. 287). Ehlers (2020a, pp. 53-96) suggests total of seventeen so-called ‘future skills’, namely: ‘learning literacy, self-efficacy, self-determination, self-competence, reflective competence, decision competence, initiative and performance competence, ambiguity competence, ethical competence, object-related competences, design-thinking competence, innovation competence, systems competence, digital literacy, sensemaking, future and design competence, cooperation competence, and communication competence. A definition for the innovation competence is provided: ‘Innovation competence as a *Future Skill* profile includes the willingness to promote innovation as an integral part of any organisational object, topic and process and the ability to contribute to the organisation as an innovation ecosystem’ (Ehlers, 2020a, p. 78).

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Within the OECD definitions sometimes there is no clear distinction between skills and competences. In the project entitled ‘Definition and Selection of Competencies (DeSeCo)’ (OECD, 2023b), the terms ‘skills’ and ‘competences’ seemed to be used interchangeably (to a certain extent). However, the OECD has provided a conceptual definition of the so-called ‘Competency Framework’ (OECD, 2014). A threefold classification of ‘core competencies’ was outlined in this framework (OECD, 2014, p. 4). The rationale here was to distinguish between the following competencies: achieving results, building relationships and planning for the future.

Figure: Different Axes of Competencies.



Source: OECD (2014, p. 4).

To summarise, *competences* may be understood more in terms of ‘meta-skills’, which *enhance* the complex application, reflection and

further development (learning) of skills. Should a distinction be made between competences and *competencies*, then competencies may be regarded as the *ability* to use skills and competences (meta-skills), but also as the ability to reflect on and develop further skills and competences (meta-skills).

2.4. Meta-Competences and Meta-Competencies

‘Meta competences’ have been approached in different ways:

1. *Meta-competences as a component of a larger ‘meta competence framework’:*

1.1. Reis (et al., 2020) emphasised the importance of entrepreneurial competences in connection with the success of policies and of venture capital investments. This matters for digital ventures and associated breakthrough innovations. There is a need, therefore, for ‘providing relevant knowledge for policy-makers’ strategy formulation processes’.

2. *Meta-competences in relation to business and technology:*

2.1. One point of interest here is to inquire to what extent meta-competences are significant for the performance of managers (Feng et al., 2008). Explicit references to meta-competences are brought into play regarding technological success.

2.2. As Wadhwa and Rao (2000) indicated, flexibility is sensitively crucial in managing high technology, for example, ‘involving a dynamic control of structural, process and resource flexibility’. Some studies have been published that focus on the cross-road of digital competences and future teacher training in digital education in higher education (for example, Rodriguez-Garcia et al., 2019).

3. *Meta-competences in relation to primary schools:*

3.1. Zhanadilova et al. (2019) referred to ‘basic requirements to professional competence and meta-competence of a primary school teacher’, and framed this in the context of more general factors and conditions that influence the development of teachers in terms of their professional competences.

3.2. Chernyavskaya and Malakhova (2016) looked at this complex terminology more from the perspective of primary school children, and proposed defining meta-competences for primary school-aged children. One key definition used was: ‘Meta-competences are defined as competences determining individual efficiency, which facilitate the acquisition of other competences’. Emotional intelligence is also believed to play an important role in this.

4. *Meta-competences in relation to secondary and tertiary education:*

4.1. A study on social work students linked teaching students to developing emotional self-regulation (Bogo et al., 2013).

4.2. The interest in supporting meta-competences among students in specialised classes in secondary school sometimes lies in connecting skills-of-the-past with skills-of-the-future, and combining hard skills with soft skills. In this regard, Furyaeva and Gudkova (2019) recommended a so-called ‘event-project format’, particularly in subjects with a focus on engineering and technology.

4.3. Teaching-learning settings can focus on communication competences in order to support students in producing (written) texts and to link this to communication goals. As Lorente and Panera (2010) showed, such competences gained in importance when communication studies was incorporated into the European Higher Education Area (EHEA).

4.4. Readiness of ‘future teachers for lifelong learning’ is associated with the ability to develop a meta-competence, and

furthermore require that universities provide and support the necessary conditions for students to develop ‘meta-cognitive abilities’. A study by Grebennikova et al. (2021) focused on 748 students who participated in teacher education programmes concluded that cognitive abilities matter for ‘future teachers’ readiness’ for lifelong education.

4.5. ‘Education 4.0’ emphasises the shift from a teaching to a learning perspective, where a ‘meta empirical competence and academic competence’ are to be brought together in a ‘digital era’, as highlighted by Simon (2022). The ‘T.A.L.A. (Teaching and learning Academy) goal setting life skills learning approach’ was applied to learning processes in chemistry lessons.

‘Meta competencies’ have been approached in the literature in the following ways:

1. *Meta-competencies and cognitive flexibility:*

1.1. Yu et al. (2019) argued that ‘cognitive flexibility’ should be regarded as a meta-competency.

2. *Meta-competencies in relation to engineering and technology:*

2.1. Innovative engineers are deemed to be crucial for competitiveness in advanced economies, such as that of the United States. Siddique et al. (2012) inquired how ‘curriculum and instructional activities that address the engineering competencies related to innovation’ may be developed further. The focus was on ‘hierarchical curriculum design model, grounded in experiential learning’. There is ample room for discussion here.

3. *Meta-competencies and the world of work:*

3.1. It is expected that there will be significant differences between leaders’ work at present and in the future, as found in a

questionnaire-based study among managers in retail industries (Van Der Merwe and Verwey, 2007).

3.2. 'Information literacy' has been regarded as a meta-competency for using information effectively. Lloyd (2003) explored the implications of being information-literate in the 'workplace context' and how information literacy can be better embedded in 'workplace practice'.

3.3. As a result of globalisation, careers are less linear and predictable, but can be characterised by 'increasing societal complexity and flexibility'. Lo Presti (2009) advocated a 'development of career meta-competencies and skills' that 'are introduced as an approach to foster career self-management'.

4. *Meta-competencies in teaching and learning:*

4.1. While there seems to be no consensus on whether or not to publish content online and whether to use online content, the actual challenge lies in how to integrate information and communication technologies in 'pedagogical approaches'. Maryam et al. (2017) proposed their own competency meta-model specifically for this purpose.

4.2. One purpose of the medical education system is to develop a competent and professional workforce. Yazdani and Yadollahi (2019) described how Walker & Avant's model could be used for promoting different groups of competences.

4.3. 'Learning outcomes' have become a focus of attention. Harden et al. (1999) provided a 'three-circle model' which emphasised: 'what the doctor should be able to do ("doing the right thing"), the approaches to doing it ("doing the thing right") and the development of the individual as a professional ("the right person doing it")'. Different learning outcomes should be specified further in this regard.

References

- Bast, Gerald / Elias G. Carayannis / David F. J. Campbell (eds.) (2019). *The Future of Education and Labor*. New York, NY: Springer (<https://www.springer.com/gp/book/9783030260675>).
- Bogo, M; Katz, E; Tufford, L (2013). Toward Understanding Meta-Competence: An Analysis of Students' Reflection on their Simulated Interviews. *Social Work Education* 32 (2), 259-273.
- Campbell, David F. J. / Ivan Pantelić (2020). Processes of Learning and Processes of Innovation, 1-6, in: Elias G. Carayannis (Editor-in-Chief): *Encyclopedia of Creativity, Invention, Innovation and Entrepreneurship*. New York, NY: Springer (Living Edition) (https://rd.springer.com/referenceworkentry/10.1007/978-1-4614-6616-1_200098-1).
- Campbell, David F. J. / Attila Pausits / Seamus Needham (2023). The Role of Dual Education in Graduate Employability: The Comparison between Europe and Africa, 535-550, in: Tania Broadley / Yuzhuo Cai / Miriam Firth / Emma Hunt / John Neugebauer (eds.): *The SAGE Handbook of Graduate Employability*. London: SAGE Publications (<https://www.sagepub.com/hi/nam/the-sage-handbook-of-graduate-employability/book277813>).
- Carayannis, Elias G. / David F. J. Campbell (2021). Democracy of Climate and Climate for Democracy: the Evolution of Quadruple and Quintuple Helix Innovation Systems. *Journal of the Knowledge Economy* 12, online first (<https://doi.org/10.1007/s13132-021-00778-x>) (<https://link.springer.com/article/10.1007/s13132-021-00778-x>).
- CEDEFOP (2022). *Work-Based Learning and the Green Transition*. Brussels: CEDEFOP (DOI: 10.2801/69991) (https://www.cedefop.europa.eu/files/2232_en_0.pdf).
- Chernyavskaya, VS and Malakhova, VR (2016). Features of meta-competences in primary school children. *Fifth Annual International Conference – Early childhood care and education* 233, 352-356.
- Ehlers, Ulf-Daniel (2020a). *Future Skills. The Future of Learning and Higher Education*. Karlsruhe: Self-Published & Books on Demand (<https://nextskills.org/wp-content/uploads/2020/03/Future-Skills-The-Future-of-learning-and-higher-education.pdf>).
- Ehlers, Ulf-Daniel (2020b). *Future Skills. Lernen der Zukunft – Hochschule der Zukunft*. Wiesbaden: Springer VS

(<https://link.springer.com/book/10.1007%2F978-3-658-29297-3#toc>).

- Feng, M; Yin, MX; Chen, W (2008). Empirical research on Managers Meta-competence Model and Its Relationship with Performance. *International Journal of Psychology* 43 (3-4), 93-93.
- Furyaeva, TV and Gudkova, OV (2019). The Development of Students' Meta-Competences in Specialized Classes with an Engineering and Technological Focus. *Tomsk State University Journal* (442), 199-203.
- Harden, RM; Crosby, JR; Friedman, M (1999). AMEE Guide No. 14: Outcome-based education: Part 5 - From competency to meta-competency: a model for the specification of learning outcomes. *Medical Teacher* 21 (6), 546-552.
- Langa, Patricio / Dorine Lugendo / Seamus Needham / Attila Pausits / David F. J. Campbell / Sigrun Nickel / Raimund Hudak / Georg Wagner / Angela Fernandez / Adriano Felix / Pedro Massinga / Lauren Daniel / Clinton Birch / Duduzile Magazi / Jabu Makhubela / Edson Charikinya / Phindile Lukhele-Olorunju / Jussi Kivisto (2018). Final Benchmarking Report (incl. supply and demand results) and Recommendations. Krems: LaTFURE Project Report (https://www.latfure.eu/wp-content/uploads/2020/11/LaTFURE_Act2.6_Final-benchmarking-report.pdf).
- Lloyd, A (2003). Information literacy: the meta-competency of the knowledge economy? An exploratory paper. *Journal of Librarianship and Information Science* 35 (2), 87-92.
- Lorente JI and Panera, A (2010). The Education of Communicators in the European Higher Education Area. Towards a Meta-Competence in Communication. EDULEARN10: *2nd International Conference on Education and New Learning Technologies* (EDULEARN).
- Lo Presti, A (2009). Snakes and ladders: stressing the role of meta-competencies for post-modern careers. *International Journal for Educational and Vocational Guidance* 9 (2), 125-134.
- Maryam, E; Mohamed, W and Amal, B (2017). Towards an adaptive learning system: An improved competency meta-model. *Proceedings of 3rd International Conference on Electrical and Information Technologies* (ICEIT 2017).
- OECD (2014). Competency Framework. Talent OECD. Learn, Perform, Succeed. Paris: OECD (https://www.oecd.org/careers/competency_framework_en.pdf).
- OECD (2018). Skills for 2030. OECD Future of Education and Skills 2030. Conceptual learning framework. Paris: OECD

(https://www.oecd.org/education/2030-project/teaching-and-learning/learning/learning-compass-2030/OECD_Learning_Compass_2030_concept_note.pdf).

- OECD (2019). Future of Education and Skills 2030. Concept Note. OECD Future of Education and Skills 2030. Conceptual learning framework. Paris: OECD ([https://www.oecd.org/education/2030-project/teaching-and-learning/learning/skills/Skills for 2030 concept note.pdf](https://www.oecd.org/education/2030-project/teaching-and-learning/learning/skills/Skills_for_2030_concept_note.pdf)).
- OECD (2019b). Transformative Competencies for 2030. OECD Future of Education and Skills 2030. Conceptual learning framework. Paris: OECD ([https://www.oecd.org/education/2030-project/teaching-and-learning/learning/transformative-competencies/Transformative Competencies for 2030 concept note .pdf](https://www.oecd.org/education/2030-project/teaching-and-learning/learning/transformative-competencies/Transformative_Competerencies_for_2030_concept_note.pdf)).
- OECD (2021). Education at a Glance 2020. OECD Indicators. Paris: OECD (<https://www.oecd.org/education/education-at-a-glance-19991487.htm/?refcode=20190209ig>).
- OECD (2023). The Future of Work. Paris: OECD (<https://www.oecd.org/future-of-work/>).
- OECD (2023b). Definition and Selection of Competencies (DeSeCo). Paris: OECD (<https://www.oecd.org/education/skills-beyond-school/definitionandselectionofcompetenciesdeseco.htm>).
- OECD (2023c). Work-Based Learning and Apprenticeships. Paris: OECD (<https://www.oecd.org/education/skills-beyond-school/work-based-learning-and-apprenticeships.htm>).
- OECD (2023d). Vocational Education and Training (VET) and Adult Learning. Paris: OECD (<https://www.oecd.org/education/skills-beyond-school/vet.htm>).
- OECD (2023e). Transformative Competencies. Paris: OECD (<https://www.oecd.org/education/2030-project/teaching-and-learning/learning/transformative-competencies/>).
- Patrick, Carol-joy / Deborah Peach / Catherine Pocknee / Fleur Webb / Marty Fletcher / Gabrielle Pretto (2008). The WIL (Work Integrated Learning) report: a national scoping study [Final Report]. Brisbane, Queensland: Queensland University of Technology (<https://eprints.qut.edu.au/216185/>).
- Reis, DA; Fleury, AL and Carvalho, MM (2020). Consolidating core entrepreneurial competences: toward a meta-competence framework. *International Journal of Entrepreneurial Behavior & Research* 27 (1), 179-204.

Project ref: 2021-1-ES01-KA220-HED-000023112

- Rodriguez-Garcia, AM; Sanchez, FR and Ruiz-Palmero, J (2019). Digital competence, higher education and teacher training: a meta-analysis study on the Web of Science. *PIXEL-BIT-Revista De Medios Y Educacion* (54), 65-81.
- Siddique, Z; Hardre, P; Mistree, F (2012). Experiential Learning Based Engineering Curriculum to Develop Meta-Competencies. *Proceedings of the ASME International Design Engineering Technical Conferences / Computers and Information in Engineering Conference (IDETC/CIE)*, 7, 705-716.
- Van Der Merwe, L and Verwey, A (2007). Leadership Competencies for the Future World of Work. *SA Journal of Human Resource Management* 5 (2), 33-41.
- Wadhwa, S and Rao, KS (2000). Flexibility: an emerging meta-competence for managing high technology. *International Journal of Technology Management* 19 (7-8), 820-845.
- Wood, Yvonne / Karsten E. Zegwaard / Wendy Fox-Turnball (2020). Conventional, Remote, Virtual and Simulated Work-Integrated Learning: A Meta-Analysis of Existing Practice. *International Journal of Work-Integrated Learning, Special Issue*, 2020, 21 (4), 331-354 (https://www.ijwil.org/files/IJWIL_21_4_331_354.pdf).
- Yazdani, S and Yadollahi, A (2019). Defining Enabling, Technical and Meta competencies: three curricular content concept analysis. *Dilemas Contemporaneos – Educacion Politica Y Valores* 6.
- Yu, C; Beckmann, JF and Birney, DP (2019). Cognitive flexibility as a meta-competency / Flexibilidad cognitiva como meta-competencia. *Estudios De Psicologia* 40 (3), 563-584.
- Zhanadilova, K; Kudabayeva, N; Shayakhmetova, A (2019). The question of integration of competence and meta-competence of primary school teacher. *AD ALTA – Journal of Interdisciplinary Research* 9 (1), 102-107.