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The Future of Learning is Lifelong, Lifewide and Open

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Christine has been working at the Information Society Unit of the European Commission's Joint Research Centre IPTS in Seville since 2008. During this period she has investigated the

potential of social media for enhancing learning opportunities both inside and outside formal education and training¹. She led a Foresight study into 'The Future of Learning'² and research on the use of ICT for the assessment of key competences. She is currently leading work on Open Educational Resources and Practices in a study that focuses on developing visions for Open Education 2030 in the three

areas of Lifelong Learning, Higher Education and School Education. Christine holds a PhD in Philosophy of Mathematics and has a research profile in didactics. She has also worked in education as a secondary school teacher, as a teacher trainer and as a university lecturer.

Disclaimer: The views presented here are those of the author and should not be regarded as the official position of the European Commission. The scenario work on Open Education is work in progress. It is done on behalf of DG Education and Culture. It is intended to stimulate discussion and does not constitute an official policy position of the European Commission.

Towards a better understanding of learning in the future

In an attempt to look over the horizon at what learning will be like in the future, the EU commissioned a Foresight study in 2009. This study aimed to identify, understand and visualise major changes to learning in the future. It developed a descriptive vision of the future, based on existing trends and drivers, and a normative vision outlining how future learning opportunities should be developed to contribute to social cohesion, socio-economic inclusion and economic growth. Figure 1 summarises the most important components of this vision¹.

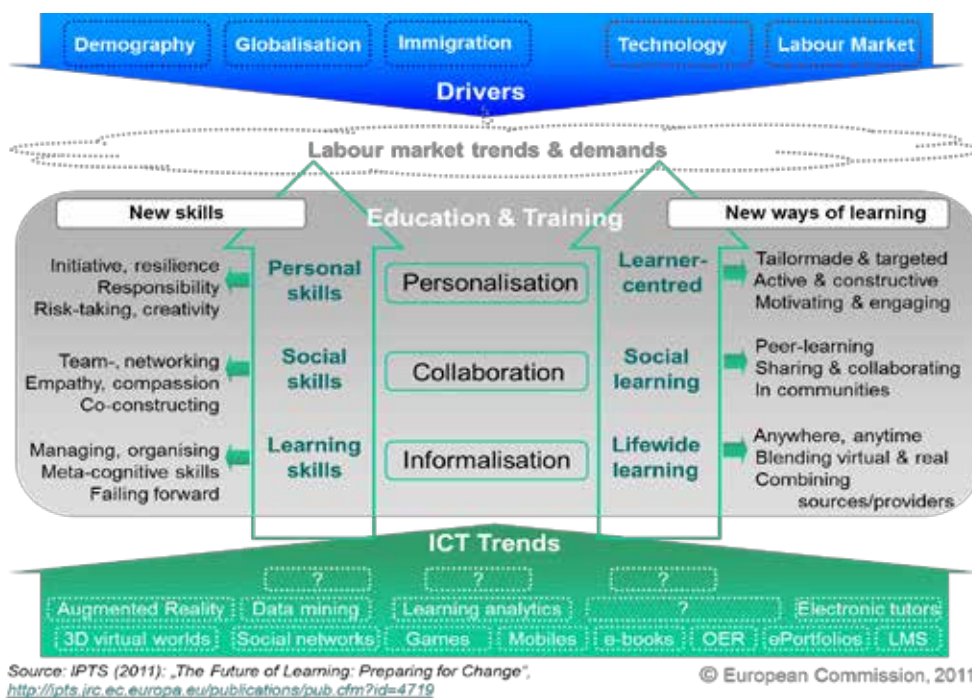
The overall vision is that personalisation, collaboration and informalisation (informal learning) will be at the core of learning in the future. These terms are not new in education and training but they will become the central guiding principle for organising learning and teaching. The central learning paradigm is thus characterised by lifelong and lifewide learning and shaped by the ubiquity of Information and Communication Technologies (ICT). At the same time, due to fast advances in technology and structural changes to European labour markets related to demographic change, globalisation and

immigration, generic and transversal skills are becoming more important. These skills should help citizens to become lifelong learners who flexibly respond to change, are able to pro-actively develop their competences and thrive in collaborative learning and working environments.

Growing out of this study was a rising awareness of the importance of 'opening up' our current educational systems, approaches, resources and practices to enable society to realise the potential contained within this vision. It is also worth drawing attention to the explicit role played by lifewide learning in this lifelong vision of future learning.

Building on this foresight study, this article focuses the ways in which our higher education institutions might become more open to open forms of learning and education.

Figure 1 Conceptual map of the future of learning



The paradox of education in a digital world

We are currently confronted with the paradox that although digital technologies are embedded in all facets of our lives and there is a worldwide expansion of on-line (open) educational resources that allow easy access to knowledge and learning, education systems have been so far unable to systematically exploit the potential of ICT to modernise teaching and learning practices. The recent rise of Massive Open Online Courses (MOOCs) in particular has drawn attention to the fact that a vast range of high quality learning opportunities are available to (almost) everyone at virtually no cost.

The great promise of "Open Education" is to provide every citizen with exactly the kind of learning s/he needs, when, where and how s/he needs it. This is a fundamental shift from

most of formal education today where learners generally comply with the when, where and how an institution chooses to provide its educational opportunities.

To better understand how such an ideal education system could be developed for the medium-term future, a participative foresight study is being conducted by the Joint Research Centre IPTS. The process is 'open' to contributions from anyone who is interested in submitting their views and it has involved engaging a high number of highly knowledgeable experts in developing visions and scenarios for "Open Education 2030" for the three sectors: School Education, Higher Education, Adult Learning². The aim of the study is to guide and direct policy making beyond the timeframe of 2020 and support current policy efforts at European level to Open Up Education³. It continues the work completed under the previous foresight study on "The Future of Learning"¹.

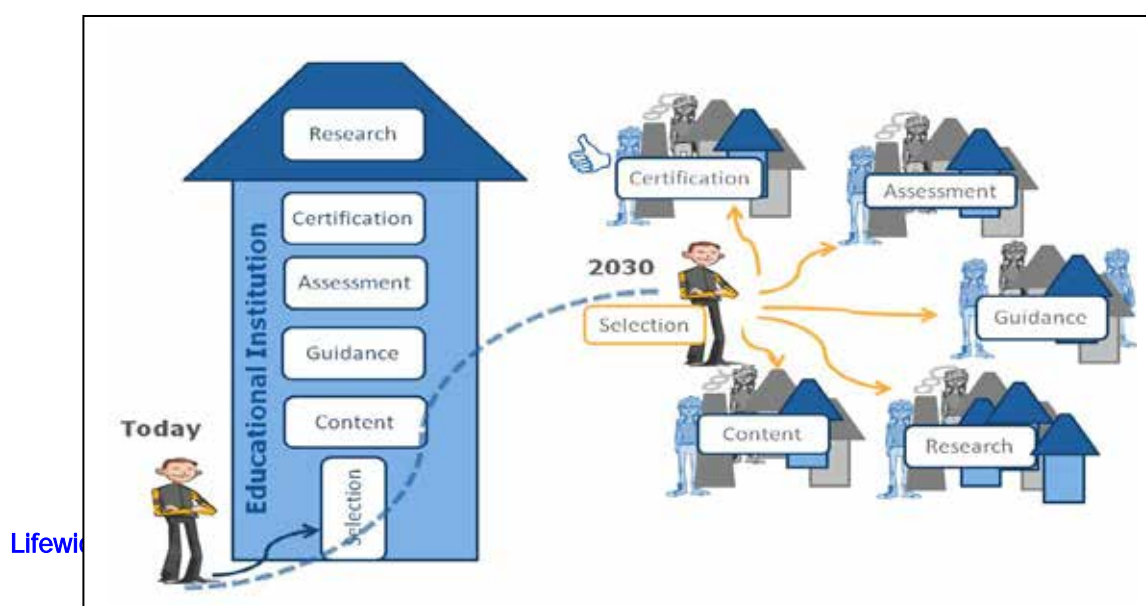
What will, could or should "Open Education" look like in 2030?

Of course, there are no easy or straight forward answers to this question. The future cannot be predicted accurately. However, there are some trends visible today that allow us to move beyond forecasting to envisage how education could be opened up to become lifelong and lifewide, so that it would provide every individual learner with exactly the learning opportunities s/he needs when they need them.

The most apparent of these trends is a power shift, from the institutions to the learners. Whereas traditionally, learners enrol with a designated educational provider like a school, a university, or a training centre - the current MOOCs development illustrates that it could be the other way round. Instead of an educational institution producing and administering learning opportunities to enrolled students as a package, it could be the learners who produce their own learning pathways by selecting and combining different learning opportunities offered by different educational providers to suit their learning needs.

Thus, in the future, learners could be able to design their learning pathways themselves by pooling the different (learning) resources available, and combining them in a way that allows them to learn efficiently and effectively. Learners would be able to learn what, when, where and how they want to learn (the "4W" of Open Education).

Figure 2 Unbundling of institutional functions and practices to create the package the learner requires



However, completely self-guided "open" learning strategies, where all four dimensions are decided and designed by the learner (as suggested in Figure 1) may not be the best option for all learners and all learning needs. In general, there are two core challenges that emerge and that give rise to a set of three further, intermediate scenarios.

Challenge 1: Guidance

Learning opportunities that emerge in a completely unstructured learning ecology⁵ require learners who can and/or want to learn autonomously, in a self-directed way. Learners who are less able or willing to navigate through a universe of disaggregated learning resources to personalise their own learning journey will need guidance to identify suitable resources, for example through networks and learning communities ("Guided discovery"), and/or enrol more formally in a structured course or class that will navigate them through the learning process, check on progress and keep them motivated ("Guided journey"). Depending on the learners' specific support needs, guidance will take many different forms, from documentation and peer collaboration through to targeted tutoring, mentoring and coaching.

Challenge 2: Learning goals

The second pre-requisite for truly open learning is that the competences acquired as such are of value for the learner. Completely open learning strategies work well for learners who set the learning goals themselves, i.e. who are interested in acquiring a certain skill or know about a certain topic out of personal or professional interest and the personal learning objectives are determined and fulfilled by the personal satisfaction with the expertise gained.

In many cases, however, learners need to acquire skills in view of future career perspectives and will therefore want to demonstrate, in one way or another, that they have achieved certain specific, externally defined, learning goals.

Thus, for some learners and for some learning situations a more guided learning context will make open learning more efficient, effective and worthwhile. Furthermore, for many learning needs, e.g. for the acquisition of basic and vocational skills, learning goals are externally set and will remain so in the future. In this case, learners have no choice on their learning goals (the "what"), while they should have a choice on "how" to learn the necessary skills.

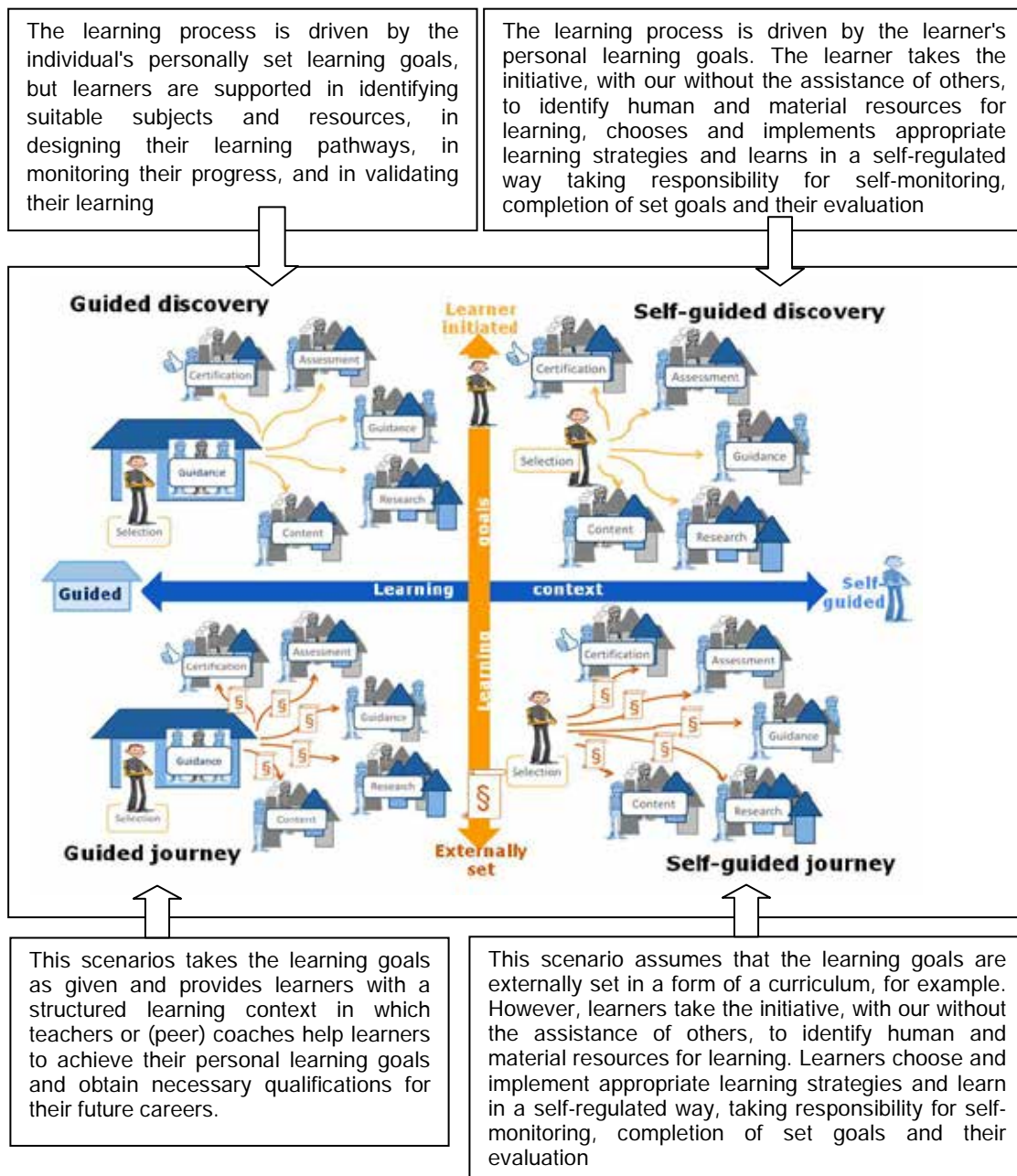
Hence, guidance (x-axis) and curricula (y-axis) - as expression of the control over learning goals - emerge as two core challenges, which structure the Open Education landscape of the future. As a consequence, four different scenarios emerge, that jointly sketch out what Open Education 2030 could look like (Figure 3).

The four scenarios spell out different options and manifestations for a common vision of Open Education 2030. In all four learning situations, the learning process is conceived as an endeavour that is led and designed by the learner. This endeavour may take the shape of a journey with a concrete destination, towards an externally set learning goal or qualification; or it can look more like a discovery trip, where learners decide themselves what to

investigate, when, where and how (y-axis). It can be a self-guided tour, where each learner follows their own directions, in loose exchange with others, or a collaborative endeavour, in which the support offered by peers and guides makes the learning endeavour worthwhile (x-axis).

The latter scenario - guided journey - is the most recognisable from the current point of view. It should be noted, however, that even in this scenario education is "open" in the sense that learners will learn with different open educational resources, tailored to their needs, in a variety of different collaborative learning groups, online and offline. They will learn according to their preferences and needs and adapt pacing and timing to their lifestyles. Curricula will also be "open" in the sense that they will allow for as much variation in content, order and modularity as possible.

Figure 3 Scenarios for Open Education 2030



What are the implications of this level of openness?

If we look at this emerging landscape of learner-centred lifewide and lifelong learning, there are two important implications for policy making and these concern *curricula* (which currently specify learning goals and outcomes) and *institutions* (which traditionally provide the learning context and resources).

Curricula: If informal learning becomes normal practice and learning goals are increasingly defined by the learners themselves, according to their concrete, practical learning needs, curricula remain relevant only in areas where there is a societal consensus that a central control over learning goals and outcomes is needed. However, even in these areas, curricula could be replaced by the accreditation mechanisms through which the corresponding achievements are certified. Thus, anyone who can produce evidence - by means of a range of possible validation formats - of having achieved the learning goals specified (in curricula or by the assessment formats employed) would be eligible for being accredited these competences. Furthermore, curricula as such have to change and to open up as a means to foster experimentation, problem-solving, innovation, risk-taking, reflection and collaboration as key skills for Europe's future.

This insight is not necessarily new and is already reflected in recent policy initiatives. With the Council Recommendation on Key Competences for Lifelong Learning in 2006⁶ a process was started that led many Member States to open up school curricula, by concentrating more holistically on competences, instead of knowledge, and by allowing for greater variety and choice. In the context of Enhanced European Cooperation, through the Bologna Process in Higher Education and the Copenhagen Process in the area of vocational education and training, first steps have been taken towards recognising skills and competences achieved under different curricula across borders. The credit transfer systems in place in both areas (ECTS⁷/ECVET⁸) further contribute to focusing curricula on the core competences relevant for a specific degree and for each specific level or step towards it. The recent Council Recommendation (2012) on the validation of non-formal and informal learning goes a decisive step further by asking Member States to "have in place, no later than 2018 [...] arrangements for the validation of non-formal and informal learning"⁹.

In this respect the scenarios confirm that informal learning is already a reality and will become even more important in the future, so that traditional validation and recognition mechanisms need to be adapted. The scenarios go a step further in highlighting that if recognition mechanisms become more open, this will have a backwash effect on curricula. If there are a range of alternative validation formats, curricula either have to reflect this variety, or they could become obsolete and be replaced by the corresponding validation mechanisms.

Institutions: While there is a high level of awareness among policy makers, educators and researchers that recognition systems have to change, the other implication from the scenario development - the changing role of institutions - has not yet been given much attention.

Currently educational institutions serve multiple purposes. They provide tuition, career guidance, mentorship; they recommend resources, publish them, modify and adapt them; they assess, validate, certify and accredit competences; they provide a social environment of (peer) support; they serve different learning goals at the same time, such as skills training in view of labour market needs with cultural, social, and soft skills development; they tend to holistically foster the progress and well-being of their learners by offering miscellaneous services, such as sports facilities and events, libraries, social clubs, and social and cultural events, and last, but not least, they are places that generate a feeling of belonging to a special social community, they are the learners' home and family.

We see these as normal functions for an educational institution and it is very difficult for us to imagine an institution differently because they have always been this way. However, the scenarios developed illustrate that in the future these different services may be unbundled, with the consequence that current institutions may - if they want to continue to play an important role in our educational systems - have to give up some of their traditional functions to become better and more competitive in particular functions.

We might speculate that some education institutions will become learning hubs which focus on offering guidance to those learners that choose a guided context for their learning, i.e. in the two scenarios on the left of figure 3. Other institutions may concentrate on content production, networking, research or on certification and accreditation. Some could even be reduced to brands or labels that convey a certain level of quality for the content offered or for the certification awarded ie they fulfil a quality assurance role.

As a result, instead of schools, vocational training institutions, colleges and universities, there would be different educational players involved for content, tuition, guidance, assessment, validation, certification and accreditation. Some of these players may be the legal successors of current education institutions, other will be new actors in the field: actors that have yet to be invented! All of them will be participating in a global open education arena, which will put pressure on institutions to develop new business models and international partnerships to seize the benefits of open education.

Conclusions

In 2030, educational opportunities will be much greater than what is currently being offered by individual institutions in a structured way towards a given learning objective, goal or outcome. Here are

In the future education will embrace individuals' lifewide learning

Education will be spread across different formal and informal networks and communities. It will involve many different public and private players and will be intertwined with other activities - work, leisure, personal interest and personal relationships. It will be truly lifewide. The sum of these relevant interactions and activities can become proxy for achievement and performance and may ultimately replace more formally obtained degrees or certificates. Current trends such as open badges and peer or expert endorsement show how it could be possible to receive recognition for skills and expertise displayed in practical and work related

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contexts. In the UK, the movement of higher education institutions towards a lifewide curriculum⁵ and the work of the Lifewide Education community are both contributing to this type of development.

everything and anything we learn counts ...

Whatever we learn or achieve over the course of our lifetimes - whether in this space or not - is relevant for us and others and can be documented in such a way as to help us seize career opportunities or raise employability prospects. The capabilities to record our learning and extract meaning from experience are key.

...calling for "fluidity" between educational and other learning contexts and scenarios...

Learners who initially engage with a topic out of personal interest, either freely and self-directedly or by engaging in a community of interest or practice, can, for example, later decide to convert the expertise they acquire into labour-market relevant qualifications. Again the keeping of records of learning, development and achievement are crucial to providing evidence for such recognition.

...and for new validation and recognition mechanisms...

In order to better exploit this fluidity, in 2030 multiple mechanisms of assessment, recognition and certification will coexist, which allow learners to convert any kind of relevant learning experience into a valuable asset. The issue for learners is to decide the most appropriate forms of recognition for their purposes.

...embedded in a new open education culture which values informal learning.

Changing mind-sets and recognising that learning outside of the formal context is important is a key issue in achieving full implementation of Open Education. Learners need to understand the nature of open learning and to develop the capabilities, attitudes and self-directing study skills to exploit the abundance of opportunity provided and document and extract meaning from their lifewide learning and educational experiences.

For Open Education 2030 to become a reality, three key ingredients are necessary:

- The abundance of a variety of high quality, specific, adaptable, instructionally designed and openly available learning resources; and the capabilities to generate such resources as and when required by learners
- An open learning culture, with new learning strategies, pedagogies, collaboration patterns, and validation mechanisms. This change not only require institutions to refocus their strategies, but also learners to develop the necessary learning to learn skills.
- Open curricula accompanied by new recognition mechanisms including micro-credentialing, automatic credit transfer and external certification, which allow learners to receive full official recognition for self-directed learning activities.

Information sources

1 Redecker, C., Leis, M., Leendertse, M., Punie, Y., Gijsbers, G., Kirschner, P. Stoyanov, S. and Hoogveld, B. (2011) *The Future of Learning: Preparing for Change*. European Commission Joint Research Centre Institute for Prospective Technological Studies EUR 24960 EN Luxembourg: Publications Office of the European Union

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<http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=4719>

- 2 For more information on the methodology, inputs and findings, see:
<http://blogs.ec.europa.eu/openeducation2030/>.
- 3 The study on Open Education 2030 is being done by the OER team at IPTS: Christine Redecker, Yves Punie, Jonatan Castaño, Andreia Inamorato dos Santos & Riina Vuorikari. cf.
<http://ec.europa.eu/education/policy/strategic-framework/education-technology.htm>.
- 4 cf. <http://is.jrc.ec.europa.eu/pages/EAP/ForCiel.html>
- 5 see Norman Jackson's article Towards a Lifewide Curriculum
- 6 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:394:0010:0018:en:PDF>.
- 7 cf. http://ec.europa.eu/education/tools/ects_en.htm.
- 8 cf. <http://www.ecvet-toolkit.eu/site/home>.
- 9 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2012:398:0001:0005:EN:PDF>.