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Better Learning for a Better World through People Centred Smart Learning Ecosystems.

Summary

To respond to the expectations of younger generations, decrease drop out and increase levels of employability, we have to restore the territorial significance of learning ecosystems and in particular of schools: the most widespread and robust of local networks.
We have to transform these learning ecosystems into drivers of social innovation and regional development, capable of filling the gaps between traditional educational agencies - school, parents and territorial stakeholders - and of integrating them with the new agency represented by the web and its virtual communities.
We have to transform learning ecosystems into people centered phygital places and smart agents that are able to foster the acquisition of adequate levels of design literacy, horizontal, digital and data skills, and to sustain continuous and open innovation by recovering the centrality of the project as engine of engagement, cohesion, well-being and ecosistemic smartness.
We have to sustain training, or re-training of all actors in the educational process: teachers, professors, educational managers, technicians and administrative officers; and foster innovation at both organisational and didactic levels.
We have to rethink the school-work alternation to foster cooperation between students, teachers, families and other territorial stakeholders, while generating the growth of more cohesive communities, deeply committed to innovation and more focused on the needs of the territory.
We have to fully unlock the potential of open forms of education requiring not only affordable, efficient and well maintained digital infrastructures, but also open access to networks of people and professionals.
We have to sustain the development of smart learning ecosystems by fostering the development of a fully interoperable tech-sphere to avoid barriers against innovation.
We have to discourage technological laziness, and invest all our efforts into producing technologies that are easy to use, adoptable by all, and capable of promoting cultural changes without affecting our quality of life.
We have to foster social inclusion, civic participation, community identity and social cohesion; the development of an entrepreneurial, lifelong, lifewide and lifedeep learning mind-set; the slowing down of unnecessary economic migration and the

demographic depopulation of disadvantaged areas; the acceleration of the integration of educational spaces at regional, national and European level.
Overall, we have a duty to act to achieve better learning for a better world.

Introduction

Educational institutions and course planners face increasing difficulties in responding to the expectations of a generation of young people who seem to be able to find all the social gratification they need and satisfy all their interests online.
A decline in the attraction of both the model and the content of traditional schooling can contribute to a growing number of other problems – these include dropping out, followed by marginalisation, an increasing risk of exclusion from other areas of social and civic life and in the most critical cases, the development of intolerant attitudes and behaviours, bullying and violent radicalisation.
At the same time, we are witnessing a decrease in the level of employability of young people resulting in long delays in placement; a lowering of teachers' motivation that sometimes leads to burn out; an increase in levels of conflict between teachers and parents and ultimately, a gradual decline in the economic, social and territorial significance of schools.
We have a duty to reverse these trends and find ways of defining a new role and a new centrality for learning ecosystems together with new policy proposals on social mobility and social cohesion.

Smart Learning Ecosystem for Regional Development and Social Innovation

The most widespread and robust local networks - more durable than churches, banks or post offices, more numerous than any other instances of local democracy - are made up of learning ecosystems, especially schools. While access to learning resources is less and less dependent on physical space, schools still act as a bulwark against the complete virtualisation of all social interaction and against the disintegration of social capital.
Schools are not only "service providers" but represent hubs capable of fostering capacity building and networking between people. They also have the potential to lead to social innovation and territorial development. They can become hubs within which children develop their emotional kaleidoscopes, grow as social beings, develop their brainpower, their visions and all the tools they need to survive and prosper in the world: strategies, methodologies and LIFE skills. Because of this, schools should be helped to operate not in isolation or simply as self-referential systems but, rather, to develop and maintain meaningful and trusting relationships between parents and all other territorial stakeholders.
Learning ecosystems have the potential to play a central role in helping disparate members of a community to become active citizens. Engagement, cohesion, well-being

and the development of a community, in other words its “smartness”, depends largely on the “smartness” of the learning ecosystems. Ecosystems are smart when “individuals that take part in the local processes achieve a high level of skills and, at the same time, are also strongly motivated and engaged by continuous and adequate challenges, provided that their primary needs are reasonably satisfied”.
Our duty, with the help of technology, is to support learning ecosystems to develop their people centred smartness towards becoming incubators of social innovation and engines of sustainable regional development - to begin to tackle the current discontinuity between time, technology, place, space, content and process (formal, informal, non-formal).
Our duty is also to provide methods and tools which can begin to benchmark the “smartness” of learning ecosystems and support the creation of action plans aimed at increasing their levels of “smartness”.

New Literacies, New Competencies and the Virtue of Design

To foster active citizenship and act as drivers of social innovation and sustainable regional development, learning ecosystems should sustain the acquisition of relevant literacies and the development of appropriate operational frameworks.
Taking the relevance of traditional literacies for granted, we also believe that DESIGN literacy should assume a leading role because individuals have to acquire the ability to set in place and manage complex processes aimed at achieving clearly defined goals, emerging from creative problem solving inspired by in depth scrutiny of contexts, processes and problems.
Design processes are also the best means of fostering the acquisition of a meta-design attitude - the ability to continually modify processes and methodologies and adapt them as circumstances change.
We have the duty to sustain the training, or re-training, of teachers, professors, educational managers, technicians and administrative officers to help design literacy penetrate into all learning ecosystems - to act as driver of innovation at both organisational and didactic levels and to enable the transfer of this literacy to students, as future citizens.
We have the duty to provide pedagogically inspired frameworks, with appropriate methodological support in order to facilitate the adoption of design based learning.
We have the duty to design and develop people centred phygital environments capable of simplifying the development of the design processes and the application of most suitable design methodologies, both at organisational and didactic levels.
This implies that we should also support the acquisition of digital skills and literacy and provide suitable frameworks to map these essential digital skills onto other life skills and onto all phases of the design process.

In other words, digital skills should be considered relevant not simply to train students as users of present and future products and services, but to build their individual strengths and skills in all forms of design.
It is worth highlighting that digital skills and competences are also needed to optimise the management of learning ecosystems and sustain their potential role of drivers of social innovation and regional development.
Since the development of phygital environments leads to a vastly increased production of data, we have also the duty to sustain the acquisition of adequate data literacy (see the paragraph below on "smart data") to avoid opening up further skills gaps.
The availability of a huge quantity of data produced by complex and open learning processes requires moreover the spread of a new culture of evaluation and assessment that has had to switch towards monitoring to include the ability to extract meaningful indicators.
This switch needs to be accompanied by another cultural revolution. Monitoring and evaluation should be no longer perceived as a means to reward or punish, but rather as the best way to increase the transparency of the learning processes, to identify problems, needs and expectations, and to become the starting point for the design of action plans capable of producing an increase in individuals' and ecosystems' "smartness"
Our duty is to provide analytics tools that are interoperable, easy to use and which lead to outcomes that are meaningful and easy to grasp.

The social dimension of alternating school and work

Students, parents and the wider society are increasingly demanding learning activities that convert theory into practice while preparing students for better job placements and, ultimately, for a better life.
Alternating between school and work offers the opportunity to restore learning ecosystems to their central place and to foster cooperation between students, teachers, families and other territorial stakeholders, while generating the growth of more cohesive communities, deeply committed to innovation. In time, learning ecosystems may lead to a series of projects capable of activating and keeping alive design processes focused on the needs of the territory - incubators that serve not only to train skilled human capital but also to provide viable solutions to local problems. Incubators of a project oriented mentality can help individuals to acquire skills and competencies of general interest to the whole community and generate virtuous circles in which the outcomes of a creative and innovative learning cycle become the base through which new learning cycles can be built and more advanced outcomes achieved.
The introduction of a social dimension into the dynamics of this school-work alternation entails significant changes compared to other models of territorial development - for example, the triple helix which considers industry, politics and

university/education as the driving forces of development. High schools and learning should assume a greater importance when a fourth key actor, the “community” comes into play. The community includes all other key-actors and yet plays an autonomous role, with respect to duties and functions that characterise all these other actors.
As a consequence, linear cascade models of research and technology transfer to industry are not expected to remain very effective and should be replaced by a sharing approach where parties tend to assume and adopt the role of other complementary parties. Within this landscape, learning ecosystems could and should play the role of driver of knowledge co-creation, social innovation and, at the same time, a quasi-governmental role as promoters of territorial development.
In this situation, individuals and the community as a whole, by becoming active parts of the process are challenged, and may contribute to the development of a form of positive tension, even entering into a state of “flow” - a form of engagement that has, throughout history, led to the cultural dominance of particular regions, such as Florence during the Renaissance, or Paris during the Belle Epoque.
We have the duty to support the social engagement of learning ecosystems in fostering more cohesive and inclusive communities.

Opening up education

Open access to digital resources has the potential to lead a disruptive social Innovation in teaching and learning but it could also lead to a deepening of the digital divide between regions, states and continents.
Unlocking the full potential of open forms of education requires not only affordable, efficient and well maintained digital infrastructures, but also networks of people and professionals representing both existing and emerging key stakeholders in education and innovation who are actively engaged in leading and supporting sustainable changes. This will present new challenges for governments, educational institutions, non-profit organisations, the private sector, trade unions and professional associations, as well as individual practitioners and citizens. We have the duty to both foster and contribute to the advancement of public discourse in these pressing issues. This is why both regional and transnational cooperation is needed.
We also have the duty of providing digital technologies capable of enabling the opening up of education, and of supporting the scalability of new forms of interaction.

An Interoperable Tech-sphere and the Smartness of the Machines

In Europe, penetration of smart phones is close to 100%, while internet related technologies and services are increasingly pervasive and have changed our behaviours. Phygital place, which can take advantage of the embodiment of miniaturised technologies is slowly spreading, but the situation in most learning ecosystems today is

a long way from fully incorporating these advanced technologies. In many areas, a deep gap exists between personal use and didactic use of digital technologies.
The smartness of learning ecosystems is not created merely through the availability of digital infrastructures and applications. When technologies are both available and adopted enthusiastically, they can start to make a difference in both simplifying and accelerating progress toward the achievement of that smartness. One has to keep in mind, however, that technologies are smart not because they are capable of replacing human reasoning but, rather because they can help towards achieving a people centred smartness, through streamlining mundane organisational tasks, and enhancing the skills of all actors involved in learning processes.
We should not give up on the design, development and testing of more advanced technologies but we have to be aware that only a few advanced learning ecosystems are ready to adopt the latest and most fashionable technologies.
The majority of them need much simpler, easy to use tools and services of proven effectiveness.
Our main duty is therefore to invest our resources in efforts to produce technologies that are easy to use, adoptable by all, and which lead to increase in the smartness of learning ecosystems, while at the same time promoting associated cultural change that does not adversely affect our quality of life.
But even that may not be enough. We also have the duty to try to create a fully interoperable tech-sphere. Lack of interoperability between devices, data and services has generated some of the greatest barriers against innovation and represents a damning indictment of technological laziness.
The increasing complexity of technology enhanced learning processes demands the ability to export data produced by any application or service, to combine it into a bigger picture, to fully monitor all processes and to extract meaningful and easy to interpret indicators.
Full interoperability of the tech-sphere is also important for the educational marketplace, since it will allow small enterprises to concentrate on the development of applications that can easily be integrated into any existing environment or framework, leading to a much larger range of potential customers.

Smart Data instead of Big Data

The use of any digital technology produces a multitude of electronic traces that are of potential interest in monitoring processes that take place in learning ecosystems.
However, as digital tools are used more widely, and more activities are based on the use of such tools, more data is produced which remains unused. This is the classical scenario of nothing being produced by overabundance.
Designers and managers of the learning processes have therefore to promote the integration of design literacy, monitoring literacy and data literacy. Design literacy is

useful both in the planning of data acquisition and in the selection of subsets of data that that could produce meaningful indicators. In other words, design literacy should help in the process of distinguishing smart data from merely big data.
Data literacy is the ability to ask and answer real-world questions using complex data sets. It is based on the application of core practical and creative skills. These skills include the abilities to select, clean, analyse, visualise, critique and interpret data; to tell stories from data; and to use data as part of the design process.
Data literacy should help individuals frame interesting questions from data and take full advantage of the statistical analysis that, in case of complex process requires the integration of descriptive statistics and inferential methodologies.
Our duty is, again, to design imaginative approaches to the teaching of data literacy and to develop tools that can be used by anyone to explore data, extract meanings, answer questions, and to tell stories. We need to emphasise both the mediating role and the simplifying role of technologies in these processes.
Being data literate also means being fully aware of issues of safety and security, privacy and trust. Once more our duty is to contribute to prevent and minimize the risks that may derive from technologies and make daily life easier to individuals involved in the development of people centred smart learning ecosystems.

Challenging the future

We cannot afford to simply wait for something to happen. We have a duty to help a groundswell of perceptions, needs and expectations to emerge. We have a duty to engage people in the development of viable and sustainable innovation. We have a duty to challenge the future.
We therefore have a duty to promote and sustain:
• the centrality of learning ecosystems as a driver of knowledge co-creation, social innovation and regional development;
• the recovery of stronger and more meaningful relationships between educational agencies - schools, parents, territorial and community stakeholders;
• forms of personalised and contextualised learning for all, through open access to resources;
• the social dimension of the school-work relationship;
• the acquisition of new skills and literacies - digital literacy, design literacy, data literacy, monitoring and evaluation literacy;
• the spread of incubators where new literacies can lead to innovation;
• the development of a fully interoperable tech-ecosystem of devices, data and services which is easy to access and easy to use;
• open access by all to any kind of resources: phygital places, contents, skills and competences;
• an improvement in teachers' qualifications and place in society;

• benchmarking of the “smartness” of learning ecosystems and territories.
with the aim of fostering
• social inclusion of young people not currently in education, employment or training, and anyone else that needs to be retrained or to develop new skills;
• equal opportunities for all regardless of race, religion, gender, sexuality age or social background;
• civic participation, community identity and social cohesion;
• the reduction of school drop-out;
• the development of an entrepreneurial, lifelong, lifewide and lifedeep learning mind-set;
• the slowing down of unnecessary economic migration and the demographic depopulation of disadvantaged areas;
• the acceleration of the integration of educational spaces at regional, national and European level.
Overall, we have a duty to act to achieve better learning for a better world.

signed by

ASLERD, EADTU, EATEL, EDEN, IAFeS