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PRE-VISIONS – FIRST RESULTS OF THE EDEN FELLOWS SURVEY ON THE FUTURES OF LEARNING

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Abstract

Technology is pervasive and intertwined in many aspects of modern life and society. The digital revolution that is sweeping the world has shown its potential in education during the Covid-19 pandemic. It is rapidly transforming the way students learn, and as a result, technology is expected to improve the face of education by making it more inclusive and accessible. In the framework of the EDEN Pre-Visions project, the EDEN fellows conducted a prospective study on the future trends of open and digital education in Europe in the next decade. 40 EDEN Fellows took part in an online survey launched in January 2023. In this paper, we present and analyse the first results of this exercise, describing the views of the experts on six dimensions: the European context evolution and socio-economic dynamics; EdTech research and development; EdTech practices; institutional digital transformation; societal impacts and implications; policies and regulations.

Keywords:

Open Education; Digital Education; EdTech; Educational policies and strategies; Future trends; EDEN Fellows.

Introduction

The context in which education institutions operate is complex, influenced by global megatrends such as war, pandemics, climate and energy crises as well as technological evolutions (Olcott et al., 2023). With respect to the Covid-19 pandemic in particular, the education sector was faced with the major challenge of rapidly pivoting to online education, with varying degrees of success (Bozkurt et al. (2020). This has also significantly impacted established open and distance education institutions which had to reposition, reengineer processes, innovate practices and speed up organisational transformation (Teixeira & Mota, 2020). Yet the challenges and trends stretch way beyond that of the pandemic, however immediate its impact. We thus need to take into consideration larger European and global social, economic, technological, cultural, environmental and political trends, as well as research and practice in educational technology (EdTech).

Methodology

This research was conducted between January and March 2023 in the form of a survey distributed to EDEN Fellows. The EDEN Fellows form a body of over 100 individuals who have received recognition for their contribution to EDEN and the field of distance, online and open education since 2007, in the form of EDEN Fellows and Senior Fellows Awards¹. This community is thus among the best placed to identify such trends and challenges and formed the population for the current study. Forty (40) Fellows and Senior Fellows responded to the survey, representing a response rate of almost 35%. The survey was viewed 1155 times, which indicates to us that it was consulted and analysed several times before completion and the answers are very well distributed among Europe, North and South America, with between one and three answers per country [exceptions Romania (4), Spain (4), UK (4)].

The survey consisted of 20 questions organised into 7 sections: European context evolution and socio-economic dynamics; EdTech Research and Development; EdTech practices; Institutional digital transformation; Societal impacts and implications; Policies and regulations; Leading actors and inspiring persons. The majority of sections consisted of a 5-point Likert scale (5 being the highest score) with optional text responses for further comments.

¹ <https://eden-europe.eu/team/department/fellows-council/>

The survey was designed, tested and validated by members of the EDEN Fellows Council Board, and consent obtained from all respondents.

Different methodologies were mobilised to analyse the data. In this paper the authors present basic statistical descriptions combined with selected data snapshots to provide initial insights into the main trends identified by the respondents. The data presented in the tables correspond to the number of respondents in the dataset for the respective item. The number in brackets after each data snapshot corresponds to the line number in the dataset. The more detailed qualitative and quantitative analyses will be reported in subsequent publications.

European context evolution and socio-economic dynamics

Education is always shaped by context. In the Pre-Visions survey, EDEN Fellows were invited to rate the importance of a number of social, economic, technological, cultural, environmental and political trends that may affect the future development of teaching and learning in the next decade.

Table 1: Social trends

Trend/Score	1	2	3	4	5
Well-being and health	3	0	12	15	10
Demographic changes	4	0	6	13	17
Equity, accessibility and inclusion	3	2	5	10	20

Fellows clearly identified two social trends as potentially affecting more significantly the field. These are *equity, accessibility and inclusion* and *demographic changes*. Regarding the first one, a Fellow stated: "It is very important to ensure that all students have access to high-quality education, regardless of their socio-economic status, geographic location, or other factors. That is essential for promoting social mobility and supporting the development of a skilled workforce" (33). However, Fellows also warned that in many countries there is an emerging trend towards a more elitist view of higher education which may lead to a depreciation of these issues. As for the second, a Fellow stated: "Demographic changes will certainly have a big impact but may not be fully recognised and addressed by institutions and government" (39). Surprisingly, due to the impact of the Covid-19 pandemic, *well-being and health* was not as highly rated. Even so, one of the Fellows expressed its critical importance "for deep learning and engagement, as well as effective support to learning" (33). Yes, Fellows also see digital learning as a positive force for social change: "Digital learning can improve well-being and health by enabling learning to take place in situ, rather than requiring expensive relocation and attendance in a new social milieu" (38).

Table 2: Economic trends

Trend/Score	1	2	3	4	5
Shift to remote work	1	2	3	17	17
Future work and new skills	2	1	2	10	25
Shift to remote teaching and learning	2	2	8	10	18

As for economic trends, which the Fellows seem to take as the most impactful for the future of open and digital learning, *future work and new skills* was paramount for them. "[It] is high on the agenda in Europe" (39), as one respondent stated. Another Fellow noted: "Remote work and the need for new skills will require asynchronous, readily available solutions" (38). Overall, Fellows acknowledged all these three trends to be potentially impactful as well as interdependent. However, Fellows also noted an existing backlash in the trends towards remote work and education following the dramatic impact of the Covid-19 pandemic. As one respondent stated: "Similar to remote work, there is a concerning pushback against remote teaching and learning, which the field needs to address" (39).

Table 3: Technological trends

Trend/Score	1	2	3	4	5
Artificial intelligence	1	4	8	5	22
Next-generation digital learning environment	2	3	12	14	9
Analytics and data privacy	3	1	14	12	10

Regarding technological trends, most of the Fellows indicated *Artificial Intelligence (AI)* to be the most promising development. This is coherent with their views on EdTech trends. Interestingly, they seem to award almost the same level of importance to both the *next-generation digital learning environment* and *analytics and data privacy*.

Table 4: Cultural trends

Trend/Score	1	2	3	4	5
Ethical governance	1	3	18	7	11
Expansion of digital citizenship / digital literacies	2	2	5	12	19
Disinformation in social media and the internet	3	3	7	12	15

Concerning emerging cultural trends, the majority of Fellows elected the *expansion of digital citizenship/digital literacies* as the most important development. In second place came *disinformation in social media and the internet*, awarded slightly less importance. Differently, Fellows evaluated *ethical governance* as not such a significant factor.

Table 5: Environmental trends

Trend/Score	1	2	3	4	5
Focus on sustainability	1	2	13	9	15
Implications of climate change	3	7	10	9	11
Decrease of carbon footprint	3	7	11	8	11

As to environmental trends, which impact Fellows feel less important to the future of open and digital learning, the *focus on sustainability* was the most rated. Less concern was given to the *implications of climate change* and the *decrease of carbon footprint*. Only 47,5% of the respondents rated this as important or very important.

Table 6: Political trends

Trend/Score	1	2	3	4	5
Decrease in public funding in education	1	0	7	16	16
Authoritarian surveillance	2	5	16	8	9
Deteriorating international relations	3	2	15	10	10

Finally, regarding political trends, the overwhelming concern is the *decrease in public funding in education*. As many as 80% of the Fellows rated highly. The second major concern of the Fellows is with the *deteriorating international relations*, while fewer respondents indicated a concern with *authoritarian surveillance*.

EdTech R&D

Research is a major driver for innovation and quality of educational practices. In this section we describe the results of the Fellows evaluation of the current trends in educational research which may inform future teaching and learning practices in Europe in the next decade.

Table 7: Trends in online pedagogy and learning experience design

Trend/Score	1	2	3	4	5
Open Educational Resources and Practices (including MOOCs)	1	4	9	9	17
Authentic learning experiences	1	2	9	17	11
Redesigning learning spaces	2	4	10	9	15
Hybrid learning designs (e.g., blended learning, flipped classroom)	1	3	7	8	21
Growing focus on measuring learning	1	5	10	14	10
Modularized and disaggregated degrees	1	3	8	14	14
Microcredentialing	1	4	4	13	18
Participatory learning experiences (incl. peer learning and assessment)	1	4	12	10	13

Regarding the online pedagogy and learning experience, the most rated trend was *hybrid learning designs*. More than half of the respondents rated this trend as very important. A clear majority also highlighted *microcredentialing*. As one Fellow noted: "the digitalisation of (micro-)credentials, combined with the use of

standards and digital signatures can help citizens have their knowledge and skills certified, verifiable and portable in EU/global education settings and on the labour market” (17). Another Fellow also stated that “students will increasingly opt for part-time study and micro-credentials and short-term credentials aimed at employment. They will come back to earn their formal degrees at their discretion, not ours” (7). Coherently, Fellows also awarded a very high rating to *modularized and disaggregated degrees* and to *authentic learning experiences*. Two thirds of them rated both as important or very important. *Open Educational Resources and Practices (OER/OEP)* were also considered very important by the Fellows. As pointed out by one of them: “OERs and OEPs continue to be the most powerful and influential transformation in digital learning. This is due to the flexibility they provide to learners and teachers and to the interoperability between non formal and formal learning” (11). These emerging trends seem to show an increased focus on changing how learning is organised, assessed and certified and also the disaggregation of the degree system. Interestingly, Fellows didn’t rate as highly the *growing focus on measuring learning*. The less rated trend was *participatory learning experiences*, even if one third of the respondents rated this trend as very important.

As for other powerful trends, one of the Fellows suggested *skills and competence-based learning*, which they considered to have a major impact on ODL. Additional new features may become even more important in the future, as another Fellow reminded: “Expectations of learners may change in the future. There will be necessary further differentiation between what may be fancy and what may be really accepted and used” (26).

Table 8: Emerging Technologies

Trend/Score	1	2	3	4	5
Adaptive learning technologies	2	3	5	18	12
AI/Machine learning education applications	2	2	9	5	22
Learning analytics	2	3	10	14	11
BYOD	3	6	12	14	5
Games and gamification	3	4	9	14	10
XR (AR/VR/MR/Haptic) technologies	4	4	9	11	12
The Internet of Things	3	8	8	13	8
Robotics	3	8	12	9	8

Concerning emerging technologies, Fellows were more divided. Most of the respondents elected *adaptive learning technologies* as a relevant trend. 75% of them considered it as important or very important. However, if we look only at the trends rated as very important, the majority of Fellows chose *AI/Machine learning*. Significantly, about one third of the respondents rated *XR (AR/VR/MR/Haptic) technologies* as very important, although overall it appears only as the fourth most voted trend. *Learning analytics* was not so highly rated. The same applies to the *Internet of Things*, although over half of the Fellows still rated it as important or very important. Finally, there are two technologies which were not much valued: *robotics* and *BYOD*. As one Fellow stated, it is important to note though that “technology is not always synonymous with progress” (7) and it’s important not to destroy the humanistic foundations of education.

EdTech practices

In terms of EdTech practices, respondents were invited to identify these for different sectors: child education and K12; Higher Education; further and adult education; non-formal learning. In Child education and K-12, Fellows mentioned practices such as flipped classrooms, problem-based learning, gamification and simulations, as well as broader approaches such as personalised learning and teaching and co-creation. It would be interesting to explore further the relationship between these two approaches. Accessibility concerns were mentioned, as was the fact that the technology used must be free and/or easily available. One respondent preferred to put the emphasis on mastery of writing skills at this level, as a prerequisite for later education and life.

In Higher Education, microcredentials and e-portfolios were mentioned in relation to competency-based education and employability. The technologies highlighted by respondents as good practice included the use of Virtual and Augmented Reality (VR/AR) for safety training and interactive video. Other responses focused on pedagogical approaches, with co-design of the curriculum, flipped classrooms and service learning, on the design of learning spaces, and on the use of learning analytics to support both learning and decision-making. Flexibility, equity and the need to keep the ‘open’ in open and distance learning were also mentioned.

Turning now to further and adult education, microcredentials were again mentioned in relation to employability, as were competency-based approaches, flexibility and the mobilisation of appropriate learning and teaching approaches such as heutagogy and andragogy. For non-formal learning, interestingly several respondents recommended formalising the outcomes in terms of microcredentials to facilitate the recognition of this learning 'outside the system'. Digital and media literacy were considered important, as well as second-chance education and open learning provision. Methods related to experiential learning were cited, including project-based learning and design thinking. Finally, a focus on self-directed learning and self-assessment combined with peer and mentor guidance or coaching featured among the approaches considered to be good practice in this area.

Institutional digital transformation

EDEN fellows support the idea that the digital transformation of educational institutions has been highly accelerated by the pandemic. As this process requires that a number of conditions be met, and resources be available in order to be successful, the study explored how these processes are developing and how they are changing the education sector. 47% of the fellows declared that they believe that digital citizenship and digital literacy have expanded tremendously in the last years. At the same time, only some consider that next generation digital learning environments will be further developed, as 30% consider that these will not change the fundamental characteristics of educational institutions.

The EDEN fellows also identified key issues regarding transitions across the educational institutional landscape and the resources needed. A leader from one university indicated how the university has moved from planning the digitalisation of resources and technical development to strategically thinking and planning a digital transformation that looks more at the full eco-system, the transformation of learning and changing academic culture. Indeed, another respondent pointed out that "digital transformation [is] about leadership and creating sustainable business models and not about technology" (7), a view reflected by several others. The majority pointed to the need for a holistic approach, for digital leadership combined with a vision, a true understanding of "the transformative process which is, in effect, about transforming people not technologies" (7) and deep organisational changes for a full digital transformation.

Societal impacts and implications

Fellows seem divided in how they address this topic. On the one hand, the impact of the Covid-19 pandemic in accelerating change in education is still controversial. For some respondents the negative aspects of emergency remote teaching - ERT (Hodges et al., 2020) and other online learning practices not grounded in research have produced a pushback against digital education. This may delay any significant positive transformation for some years. Others, although recognizing the poor teaching quality and lack of leadership, training and support services, draw a positive lesson from the experience. They expressed belief on educators having realised that they need to return to human basic values such as empathy and compassion. This should inspire governments, but also companies, to invest in building up the digital infrastructure. For others, the shift to online education is irreversible. In the words of one respondent: "the pandemic has shown that most work and study can be done from home offering greater flexibility for those with limited mobility, family ties and work" (35) adding: "We have shown that online education can be effective, engaging, social and rewarding if planned carefully and with suitably trained teachers. There is (...) enormous demand for higher education in remote areas, reskilling, professional development, promoting local development, in-company training (...) [which] will be mostly online or in partnership with local institutions and companies" (35).

On the other hand, there are also contrasting perspectives regarding the benefits and risks of the digital transformation of educational institutions and processes. It's important to note that Fellows do not share a single scenario. In fact, many understand this movement not towards a fully online learning environment, but an increasingly hybrid one. Others view it differently. In fact, some of the Fellows expressed clear concern with, and even criticism of, the whole process. The major risks identified relate to, as one respondent put it: "the lack of capacity of formal education systems and lifelong learning supply to sustain social inclusion and limit inequalities" (5). The risk of continual growth of the digital divide and exclusion, due to the insufficient digital competences and proper infrastructure was also mentioned by several Fellows. One other respondent mentioned the risk of "an unhealthy increase in the surveillance of learners and the learning process" (14). This also relates to the increased need for an ethical governance of data and its use, as pointed out by another Fellow. But there are

also several positive approaches to digital transformation. Some Fellows highlight its cultural implications, for instance the change in the perception of value. Others mention the dissemination of a more collaborative and less individualistic culture of learning, as well as increased diversification and personalisation of learning experiences and learner participation in the design and assessment processes.

Policies and regulation

At the transnational level, Fellows understandably highlighted the contribution and impact of European policies. Respondents mentioned the European universities alliances and the strong input of the EC on digital education. There were references to the long-tail Effect of the 'Bologna Process' and accompanying regulatory framework in HE, as well as the ECVET and lifelong learning initiatives, and the ESCO system. Most attention was given to the impact of the Digital Europe Programme² and particularly the Digital Education Action Plan 2021-27 (DEAP)³, considered by many to be the main driver. In the words of a respondent, it is: "a good example how EU policies and initiatives can be implemented on the national level" (24). Another Fellow stated: "We can no longer talk about a national and international level. Whether a country is a member of the EU or not, each country has to work together again in the creation of international digital ethics, culture, technology use and new laws" (34). Having pointed out the high number of ongoing initiatives supported by the EC leading to the establishment of competency frameworks, one Fellow expressed the wish for these frameworks to become mandatory in the EU.

Nevertheless, Fellows recognise that major differences persist between national legislations, which hinders the internationalisation of educational provision. It was noted some disbelief towards the DEAP. One respondent characterised it as a weak EU response given its "very poor achievements, except for actions by wealthy countries" (28). This is taken by others as clear ground for future improvement of DEAP: "the coming years will be crucial for contributing to shaping its successor" (39). This expectation regarding a more active European policy and cooperation was perfectly expressed by one Fellow: "The Europeans underestimate the power of the collaborative spirit in education and practice. It is remarkable and an invaluable asset for the future" (7).

In addition, the Fellows identified some emerging policy issues which need to be addressed. These were: cross-border/cross-sector micro-credential articulation, the combination of formal and non-formal credentials, Ethical issues related to A.I., and the clarification of the EU-UK regulatory issues created by Brexit. There was also a suggestion to improve the connection between professional associations and institutions with peer organisations in other geographic regions of the World, such as North and South America, Africa, and Asia.

On a national level, Fellows expressed more differentiated perspectives. Some did not provide information as they operate in global scenarios. As one respondent stated: "Digital technologies have created a common culture in all countries of the world. Regional and local conversions will not be enough. Change and transformation must be done according to global rules" (9). But many others defended an alternative view: "I believe in the local initiatives! on a local scale (city level) Cooperation between schools and the local community will result in understanding of the situation and in sustainable cooperation" (8). In this line of reasoning, some Fellows indicated national initiatives which should be reported for their significance. This was the case, for Portugal, of the recent Distance Education Regulation for Higher Education and the Distance Education Regulation for the Portuguese School System were highlighted. Regarding Spain, reference was made to the Digital Programme *Educa en digital* and the Digital Education Plan of Catalonia. Finally, in the case of Sweden, it was mentioned the publication of a national report on open education commissioned by the Government and carried out by the National Library of Sweden.

Conclusions

The results detailed above provide valuable insights into future trends in the field of open and digital education, as seen by respondents possessing significant knowledge and experience in both research and practice. From the preliminary analysis of the data, we can identify the following as the most impactful factors for the field:

- Future work and new skills
- Equity, accessibility, and inclusion

² <https://digital-strategy.ec.europa.eu/en/activities/digital-programme>

³ <https://education.ec.europa.eu/focus-topics/digital-education/action-plan>

- Digital citizenship and digital literacies

Regarding the most promising areas emerging in open and digital education, Fellows appear to select the following:

- Artificial Intelligence and machine learning applications in education
- Hybrid learning environments
- Microcredentials and new forms of certifying learning outcomes
- Open educational resources and practices, including MOOCs

These are all topics which have already been addressed by research in the field, including other prospective studies, such as the Horizon Reports (Pelletier et al., 2023) and the Open University UK Innovating Pedagogy series (Kukulka-Hulme et al., 2022) but which would benefit from being connected more explicitly. For example, the use of Artificial Intelligence and other technologies in education should not be studied (and even less so applied) without a consideration for ethical implications, linking these to digital literacies and citizenship, to sustainability in terms of the human and environmental impact (Selwyn, 2023) and to the inclusion of learners in the design of their learning.

The authors recognise the limitations of this research in the relatively small population surveyed, however the high level of knowledge and expertise of this well-defined group largely compensates in terms of the quality and relevance of the results. Furthermore, the response rate of almost 35% is a positive sign that the EDEN Fellows are engaged with the field and motivated to share their perspectives to drive forward both research and practice. Further analysis of the dataset is planned, combined with follow-up consultations, in order to generate a finer understanding of the trends that need to be addressed, while taking a critical view of technological evolutions to ensure that we embrace their potential while preserving the humanistic foundations of education.

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