Strengthening the edtech innovation ecosystem in Europe - a benchmark report on government initiatives

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The European Edtech Alliance is a not-for-profit international network of edtech trade associations that, through its members, represents more than 1500 Edtech start-ups and companies across 23 countries in Europe. We exist to encourage cross-border cooperation and education innovation in Europe. Our collective goal is to achieve a higher quality, more holistic and accessible education for all.

SUMMARY

The future of European education innovation depends on the quality and insightfulness of the implementation of technology in education as well as the quality and development of European educational technology, edtech. In the aftermath of the effects of the pandemic, this has never been more evident.

The corona pandemic has completely forced all forms of education into a sudden and accelerated digital transformation where the new needs create a pressure for change on both digital tools and platforms, as well as on pedagogical models, methods and business models for the education sector. The situation has challenged the ability of both education providers and employers to change.

Given the fact that education by and large is a product of the public sector, we know that the untapped opportunity of harnessing the full potential of technology is further behind development in other industries and sectors. The innovation ecosystems are under-developed, under-financed and there are few established platforms through which public and private stakeholders can cooperate and innovate. European edtech companies are small and operate often within small and fragmented markets of which many are publicly funded and regulated and thus low in risk taking and with tight budgets. SMEs and their public sector customers need support and funding for the research and development needed.

In this report, we have mapped initiatives from governments around Europe to see how they support the innovation learning ecosystems needed. Results show a clear trend of governments seeing the need to support an innovation ecosystem for edtech and education in their countries. This is good news for the future of European education.

Stimulating the innovation ecosystems will strengthen the development of edtech and educational practice. We can see, however, that much more can be done in many countries to build a sustainable innovation ecosystem for the continuous qualitative development of local edtech companies and education sectors. Emergency responses have been important and necessary, but will not sustainably solve our challenges.

Purpose

In order to better understand the recognised possibilities and challenges facing our education systems, we have mapped European initiatives such as government funding of innovation ecosystems in edtech to benchmark solutions around Europe. We have mapped national level strategies, initiatives and funding of ecosystem players like trade associations, Public Private Partnerships, clusters, testbeds or others.

Strengthened areas of collaboration are needed to develop future digital services that are used for learning between educational actors and educational technology companies in a systematic and knowledge-building way, for all parties. The exchange of experiences, collaboration and partnerships needs to be strengthened between key stakeholders, research organisations and edtech companies.

New ideas, insights and business models must be developed to meet the needs of flexible learning. This in turn will increase Europe's competitiveness on several levels: developing the relevant future skills required in society, becoming an attractive educational country for international students, as well as attracting talent to our companies and creating export opportunities for educational technology companies.

There can be no doubt that technology will play an increasingly critical role in raising the standards and accessibility of education in the next few years and beyond, especially as we look to help our young people recover and recoup learning deficits incurred as a result of the global COVID-19 pandemic.

Simultaneously, we must tackle the pan-European challenges of up-skilling and re-skilling the workforce to secure the competencies needed for both the digital and environmental transformation of all industries. Education is of utmost importance: it is integral to the prosperity and competitiveness of our continent.

Definitions

Edtech: stands for educational technology, which either supports the administration of learning or digital services and products for learning. It covers a wide range of services and products such as digital learning materials, learning resources, assessment tools, learning platforms, administrative systems, hardware, networks, communication solutions and skills.

Innovation ecosystems and value networks: An innovation ecosystem can be a physical place or a way of working and is needed to solve the major societal challenges where responsibilities and solutions are distributed among different actors. In a functioning innovation ecosystem, technology development, ethics, laws and regulations interact. In successful innovation ecosystems, there are often several value networks. A value network acts as a knowledge accelerator for the individual member who, without his or her network colleagues, would not have had a chance to keep up with developments. Industry organizations are often key parts of value networks. The Public Sector plays a crucial role in supporting these innovation ecosystems in times of large technology shifts, especially if they are direct beneficiaries or customers in the value chain[1].

Method

All members of the European Edtech Alliance participated in a detailed survey between June-August 2021. Additionally, as part of a project in the Swedish Government's Innovation Cooperation on Life-Long Learning, a desk top research was also conducted. The results should be viewed as a snapshot image of a fast changing landscape.

[1] [1] https://www.regeringen.se/rattsliga-dokument/proposition/2020/12/forskning-frihet-framtid--kunskap-och-innovation-for-sverige/

A Pan-European Perspective

Edtech companies are mainly micro-, small and medium sized

Many emerging and innovative digital education companies are currently in the early stages of growth. Edtech is a young and often fragile industry consisting of many small and medium sized companies (many of them at an early stage typically consisting of only two to five team members). A few larger corporations, predominantly American, are an exception to this although their European edtech home markets differ in size and education is often a publicly funded sector, regulated with national laws, curricula and educational systems. As an edtech company, the diversity of languages, cultures and levels of digital development can provide a difficult environment within which to navigate, scale and grow. This growth is necessary, however, in order to invest in the development of state of the art services.

The countries in Europe have completely different conditions and challenges, partly due to their size, but also due to how far they have come in their digital maturity. As a comparison, Estonia's 1.3 M inhabitants and its highly digitalised education sector has completely different challenges than Germany's 84 M inhabitants and an education sector in the beginning phase of its digital transformation.

In the last few years, trade associations or clusters supporting growth and development for their members have emerged in almost all European countries. These groups are usually financed by membership fees and thus have scarce resources. In many countries, there have been difficulties in finding the funding needed to run operations, largely due to the size of the country and the size of the industry as a total. It is evident that edtech isn't the mobility or construction industry when it comes to turnaround and resources.

Crisis responses tries to solve the digital gap

In response to the crisis at the beginning of the pandemic, major economic investments were made by many governments in order to equip the education sector digitally with infrastructure where it was lacking. These investments should be viewed as an emergency stopgap to give teachers and students the equipment and resources necessary to conduct remote teaching and learning. These investments cannot be equated with a sustainable digitisation strategy and are more the result of digital

immaturity in the existing infrastructures and a lack of access to devices and communication platforms. Stepping up to fill the large gaps left by the policy and strategies up to that point, the edtech industry throughout Europe provided free digital resources to aid the schools that had none. In the UK alone, this assistance carried a value of 36 million pounds during a six month period according to BESA[2].

Investments were also made in educational technology within the countries' regular innovation work and financing. Targeted investments in education and technology increased in correlation with the supply of innovation funds on a large scale to support economic recovery. As an example, the PIA4 can be applied for by the field of education in France. PIA is the main national investment programme to finance and support innovation in strategic areas including Education. PIA4[3] launched in 2021 also contribute to the stimulus / acceleration post covid investment strategy including the Education sector. The total investment is 20B€ over 5 years. We can see similar trends in the innovation programmes of other countries, where innovation funding was increased as part of the larger economic recovery packages, also addressing the need for massive re-skilling and up-skilling.

Initiatives on a European level

At the European level, the European Commission has launched an updated action plan for digital education 2021-2027. The action plan describes strategic areas that aim to promote the development of a highly efficient ecosystem for digital education, as well as improve digital skills and competencies for digital transformation. The EU Skills Agenda is an answer to the need for increased research and development in various industries and technology areas, including climate change and AI.

The education network, European Schoolnet, sees new technology as more necessary than ever to meet the challenges of the future in the education sector. In addition to other initiatives, the innovation of new ideas is stimulated through the seed financing of

[2] https://medium.com/educate-ventures/phenomenal-36-million-response-to-school-shutdown-by-edtech-companies-educate-webinar-hears-a039a3420f43

[3] https://www.gouvernement.fr/le-programme-d-investissements-d-avenir

€ 5.5M in the mentor program IMPACT EdTech[4] for small and medium-sized companies between 2020 and 2022.

Governments invest in innovation of edtech

In the UK, the innovation foundation, Nesta, has been commissioned by the Department for Education (DfE) to build a structure for research, schools and edtech companies to meet and develop services together, which identify evidence for well-functioning, digital education technology and its use, the Edtech Innovation Fund[5]. The project was commissioned and funded with £ 4.6 million but was suspended and redistributed to address the negative effects of the lack of access to digital tools and infrastructure due to the corona pandemic. The EdTech Demonstrator Programme was developed by the DfE to ensure schools and colleges across England could access free, expert advice on educational technology.The programme launched shortly before the Covid19 pandemic enforced an extended period of remote teaching and learning in the Spring of 2020.

In Finland, an Education Hub[6] in central Helsinki, funded by the region, will be inaugurated in the autumn of 2021. This physical location is a space for researchers, edtech companies and the city's activities to meet. The aim is to strengthen the companies, accelerate the development of training activities, and also increase the attractiveness for the establishment of innovative companies in Helsinki. Education Finland[7] is a governmental cluster programme supporting the best education providers in their growth on the international market, and has been part of Finland's export strategy for years. In 2016 KYKY[8] (Accelerated co-creation for schools and companies) operating model was created to answer the need for a systematic process for co-creation between schools, companies, and communities. This was an initiative by 6Aika, a strategy for sustainable urban development, a joint strategy of the six largest cities in Finland.

[4] http://www.eun.org/projects/detail?articleId=4863910

[5] https://www.nesta.org.uk/project/edtech-innovation-fund/

[6] https://educationhubhelsinki.fi/

[7] https://www.educationfinland.fi/

[8] https://6aika.fi/en/frontpage/

In 2018, the Digital Pact for Education[9] was announced in Germany, a national investment of € 500 billion to develop what had been to date a virtually non-existent digital infrastructure in the German education system. During the pandemic, the digital immaturity of not only the infrastructure, but also the skills to implement a digital ecosystem became painfully obvious. Today, through the Initiative Digitale Bildung12, a larger investment of multiple billions of EUR over a number of years will be invested into five different areas: digital learning environments, equipment and tools, digital competencies for teachers, digital content, methods and tools and in evidence and science.. Complicated procurement procedures and the strict division between state and federal education ministries have convoluted the implementation of the funding The non-for-profit, Bündnis für Bildung, uniquely brings together not only Ministries of Education from the federal states, cities and municipalities, but also members from the entire education industry in order to develop neutral solutions to digital education challenges.

Other initiatives worth mentioning:

- French Ministry of Education´s Edu-up programme[10] with funding of up to €70K awarded to up to 20 K-12 Edtech startups a year. This runs parallel with the Government's recovery plan for education[11], investing €105M from 2021 to support digital transformation projects in all schools.
- Swedish Edtest[12], a project co-funded by Sweden's National Agency for Innovation, Vinnova, and 12 municipalities and the edtech industry. It is a national testbed for edtech. The funding from Vinnova, a total of €600.000 over three years, ends in the spring of 2022.
- Digital Hub Denmark[13], funded by the Ministry of Foreign Affairs, the Ministry of Higher Education and Science and, the Ministry of Industry, Business and Financial Affairs brands home-grown digital solutions to attract talent, investments and

[9] https://www.digitalpaktschule.de/

[10] https://eduscol.education.fr/1603/le-dispositif-edu

[11] https://www.education.gouv.fr/plan-de-relance-continuite-pedagogique-appel-projets-pour-un-socle-numerique-dans-les-ecoles-308341

[12] [12] https://edtest.se/english/

[13] [13] https://digitalhubdenmark.dk/edtech/

international customers to new scalable tech products and services. Startups participating come from all segments and verticals, and one strand is edtech.

An overview of government funded innovation environments for edtech

As a direct effect of the pandemic, several governments across Europe are now investing in funding well-defined organizations or collaborations to stimulate the development, innovation and implementation of innovative digital learning services. The initiatives are characterized by a desire to stimulate and initiate the long-term development of competitive national edtech companies. This development will go hand in hand with the development of the education sector and meet the need for lifelong learning in each country, often with the argument of securing its autonomy from major international companies and concerns about compliance with privacy protections.

EdTech Austria is funded by the Austrian government as well as the Austrian Economic Chamber and brings together edtech companies (startups), training providers, large companies and the public sector around the use and development of educational technology. An additional project funding of €1M is now also directed to develop and establish an edtech testbed for innovation.

EdTech Estonia is funded by the Ministry of Education and Business with an initial € 350,000 to develop the ecosystem for innovation, growth and internationalization of edtech. With just over one million inhabitants in the country, the strategy is seen as necessary to ensure effective services for education and learning nationally. Edtech Estonia also works with policy development for the edtech ecosystem.

Dutch Edtech is funded by the Ministry of Education and Business Affairs and has the task of building a network and establishing cooperation between the players in the edtech sector. The goal is to be among the top three of the European edtech ecosystems.

Worth noting is that tighter collaboration between industry associations and governments is also reported. One example is the newly formed **Edtech Poland** acting as official consultant for the Ministry of Business, Labor and Digitization and the Ministry of Education.

Missing: One of the most important results of the mapping is what *we didn't find*. Many of our members reported a lack of initiatives to support the much needed innovation ecosystem. Poland, Italy, Spain, Switzerland, Norway, Sweden, UK, and Lithuania to mention a few.

Conclusions

We can see a clear trend and pattern in many countries in Europe, where education and lifelong learning is considered a key factor to develop competitiveness, productivity and necessary transformation. The need for strengthening the innovation ecosystem for education technology and it´s practice has been addressed by many governments, understanding their crucial role in the shift of the education sector. A role the Swedish Government stated in their proposition for innovation and research policy 2021-2024:

“International research points to the central role that public investment plays in extensive technological shifts. Tests and demos often require large investments and the vast majority of companies cannot afford to either build or run these on their own, especially small and medium-sized companies. Public investments from the state and municipalities are, therefore, often a prerequisite.”

It is imperative that the necessary innovation required to instigate feasible changes within digital education environments supporting the future of learning is led not only by edtech initiatives, but also by policy makers and governments. In this way we can be sure that innovation ecosystems are able to provide the education sector with the necessary solutions in order to meet the challenges of making lifelong learning accessible and sustainable for everyone, everywhere.