European Schoolnet

Driving Innovation in Education

How far we have come and where we are going

European Schoolnet (www.europeanschoolnet.org) is a network of 31 Ministries of Education from across Europe, leading educational innovation at European level. As a major international think tank, European Schoolnet operates key European services in education on behalf of member Ministries of Education, the European Commission, and industry partners.

European Schoolnet's activities are divided among three areas of work:

- Providing concrete evidence and data in the area of innovation in education on which to base policy recommendations;
- Supporting schools and teachers in their teaching practices;
- Developing and sustaining a network of schools engaged in innovative teaching and learning approaches.

FOREWORD

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*Chair of
European Schoolnet*

Marc Durando
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A word from European Schoolnet's Chair and Executive Director

Twenty years have passed since European Schoolnet was first created, and to mark the occasion this document takes stock of the network's key achievements to date, as well as looking forward to our future priorities.

When European Schoolnet was first created, the debate about how to make the best use of technology in schools was just starting. The discourse during this period was about the various new opportunities ICT could offer to schools, but not yet how ICT could completely transform the way we teach and learn. The network's main objective at this time was limited to facilitating the inclusion of ICT in schools. During this first phase, European Schoolnet's

activities focused on identifying in which subjects ICT should be used for teaching and learning, and which school services could be enhanced by ICT. This was in line with the subject-focused pedagogy prevalent at the time. Today, however, our understanding of effective teaching and learning has moved on, and is rather more holistic. Frontal instruction and subject-based learning have given way to new learning environments, competence-based education, and student-centred learning. It is thanks to ICT that much of this educational transformation has been able to take place, and it is for this reason that European Schoolnet has expanded its work in recent years to focus on how ICT can further

support these new modes of teaching and learning.

How far have we come?

Having begun as a network of 18 Ministries of Education in 1997, today we count 31 members, all united in our mission to transform education in Europe. Improving teaching and learning, especially through harnessing the benefits of the pedagogical use of technology, has always been at the heart of what we do, whether through pan-European school networking activities, policy experimentation through pilot projects, working on interoperability and the exchange of learning resources, or focusing on digital skills and citizenship issues, as well as STEM education.

To ensure the results of the various innovative projects we run can be further developed and reach a much larger number of teachers and schools, we have recently created two flagship European Schoolnet initiatives: the Future Classroom Lab (launched in 2012) and the European Schoolnet Academy (launched in 2014). The Future Classroom Lab allows ministries, industry as well as teachers and students to explore and experiment with new technologies, a flexible learning space and accompanying innovative pedagogies. The European Schoolnet Academy on the other hand offers free online professional development to educators across the globe. It provides them with pedagogical tools, methods, hands-on learning experiences and collaborative opportunities to help teachers benefit from the innovations we are developing and, more importantly, use those innovations where they can benefit their students in the classroom.

Where are we going?

ICT and digitisation continue to be a particular focus of European Schoolnet's work, because of the critical role they play in terms of designing and implementing future classroom scenarios and supporting new forms of learning both in and out of school. However, the evolution of ICT in education over the last 20 years has naturally led us to focus increasingly on innovation in a broader sense. What our Ministry of Education members now need is evidence

acquired through projects, on how new technologies impact various dimensions of the education system, as ICT has become such an intrinsic part of everyday school life. Having matured into a key think tank focused on the transformation of education processes for 21st century teaching and learning in digitized societies, European Schoolnet is now in a good position to continue and further develop this service to its member ministries.

During the past twenty years, the educational landscape and society in general has changed rapidly thanks to the development of new technologies. These changes will require European Schoolnet in the future not only to focus on the digital skills of teachers and students, but also on supporting citizens in a digital society, more holistically. Furthermore, developing flexible learning environments to facilitate innovative formal, non-formal and informal learning opportunities will also be important. In addition to these priorities, two areas will certainly remain at the centre of European Schoolnet's work, because they continue to represent challenges for our Ministry of Education members and other education stakeholders: teacher education and mainstreaming innovation. It is vital to train future generations of teachers effectively to work in an increasingly multi-digital working environment, where new pedagogies, new ways of working between teachers and among schools, and new ways of accessing professional development opportunities are made possible by technological development. Moreover, a key priority for the future will be to consolidate our work on identifying and refining effective mechanisms to foster large-scale adoption of the wide range of successful innovations emanating from our projects.

European Schoolnet's key strength to date is its ability to act as an effective broker between educational policy and practice. Through working closely with schools on European cooperation projects, European Schoolnet will continue to be uniquely placed to provide relevant evidence to its Ministry of Education members to support informed policy-making.

This document encapsulates

the shared reflections of our network on the key milestones we have reached in our first 20 years of existence, while also looking forward to the future challenges and priorities which lie ahead on this continuous journey to drive innovation in education. We hope you will find both our journey so far, as well our vision for the future, as inspiring as we do.

We would like to thank all our Ministry of Education members, staff, our Future Classroom Lab and other industry partners, as well as institutional stakeholders, including the European Commission, who continue to contribute to and put their trust in European Schoolnet's work. Needless to say, we are also enormously grateful to all the teachers, school heads, students and school staff involved in our various activities, for their continued commitment and passion over the years in our joint mission to transform education in Europe. Our strength has always been our networking capacity. We look forward to growing our prized network and to continuing to improve the future of education, together with all our valued members, partners and stakeholders.

Giovanni Biondi & **Marc Durando**
Chair & Executive Director of European Schoolnet

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CONTINUING TO TRANSFORM EDUCATION: FROM ICT TO INNOVATION

Twenty years ago, 18 Ministries of Education came together in a joint initiative to establish European Schoolnet as a peer exchange and information network to promote the use of ICT in education. Policymakers who attended the initial launching conference[1] recognised that there was a long journey ahead and many challenges to address before every school in Europe was connected to the internet and before all teachers would be proficient in the use of technology as an instrument to support pedagogical innovation.

The original objective of European Schoolnet was thus to exchange and support the development and implementation of national initiatives through knowledge exchange focused on the implementation and integration of educational technologies in schools. Over the past two decades, the use of ICT has increasingly permeated classrooms in most countries. Meanwhile, European Schoolnet expanded into a pan-European network of 31 education ministries, providing inspiration and support to countries in the process of setting up their own national school networks. It also evolved, particularly over the last decade, into a key think tank focused on the transformation of education processes for 21st century teaching and learning in digitized societies.

Twenty years later, European Schoolnet faces new challenges. Over the years ahead, European Schoolnet will carry on being a reference point in Europe for innovative learning leadership at classroom, school, community and system levels, supported by technologies. Digitisation plays a critical role in designing and implementing future classroom scenarios and in supporting new forms of learning both in and out of school. Increasingly, though, policy makers are requiring evidence and pilots on how educational technologies impact all aspects of school

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1   European Schoolnet Launching Conference: Making IT Work for Schools (1998). http://rubble.heppell.net/ccem/pdf/A23906a.pdf

life, including: the design and use of flexible learning spaces; energy management; evaluation of pupils and staff; integration of migrants and newcomers; communication with parents; data use, re-use and analytics; teacher and school cooperation.

The direction of future travel is clear. ICT is increasingly regarded as an intrinsic aspect of teaching and learning while already becoming much less visible as a discrete policy dimension in several countries. For this reason, while ICT and digitisation will remain at the centre of European Schoolnet's work, the network has a renewed focus on:

- identifying and testing all forms of innovative educational practices (through large validation school projects);

- sharing evidence on their impact;

- supporting mainstreaming of teaching and learning practices aligned with 21st century expectations.

1997–2017:
ACHIEVEMENTS FROM
20 YEARS OF COOPERATION

Since 1997 European Schoolnet has been providing education policy makers across Europe with a unique platform for cooperation, enabling each member ministry or agency responsible for ICT in schools to develop informed education policies and national strategies for the effective use of new technologies in school education.

During the past 20 years, the network has developed through various stages and addressed different priorities:

POLICY NETWORKING

1997

Stage 1: The creation of the European network of Ministries of Education

European Schoolnet began work in 1997, primarily as a platform for exchange between Ministries of Education. The aim was to build a rich, multi-lingual European community for innovation and collaboration in educational policy and practice and to act as a seamless European gateway to national and regional education networks and their resources and services.

SCHOOL NETWORKING

2000

Stage 2: Initiation of pan-European school networking activities

Well before the rise of social media and social networks, European Schoolnet identified the need for schools and teachers across Europe to become part of an integrated system whose strength was to link the most advanced and well-equipped schools with other less advanced schools, which are still the majority, for the benefit and growth of the whole network. Very rapidly European Schoolnet initiated

pan-European school networking activities (starting in 2000), through various projects (such as Virtual School, MyEurope, ENIS - European Network of Innovative Schools, eSchola, Spring Day in Europe, eLearning Awards). These projects prepared the ground for the development of eTwinning, which today is the largest community for schools in Europe. European Schoolnet currently provides the Central Support Service for eTwinning, funded under the Erasmus+ programme, on behalf of the European Commission.

2002 Stage 3: The launch of the European Schoolnet Learning Resource Exchange

Beginning in 2002, European Schoolnet, with the support of the European Commission's Research & Development framework programme, developed a series of research activities on interoperability and exchange of learning resources and content standardisation processes. This contributed in a significant way to the emergence and gradual adoption of the concept of open educational resources (OER). The European Schoolnet Learning Resource Exchange (LRE) was launched in 2008 and is now sustained by education ministries. It currently offers over 330,000 OERs from 80 content providers via its publicly available portal, along with a range of networking, consultancy and support services.

2006 Stage 4: Promotion of the responsible use of the internet and young people's digital skills

Since 2006, European Schoolnet has been a key player in the responsible use of the internet and mobile technologies, particularly concerning eSafety in schools. Since 2010, under the Connecting Europe Facility (CEF), European Schoolnet has

developed and maintained – on behalf of the European Commission – a Better Internet for Kids (BIK) core service platform that aims to create a better internet for children and young people. In parallel, Ministries of Education have reaffirmed the necessity to prepare young European students to live and thrive safely in a digitalised society. In that context, the eSafety Label was created - a European-wide accreditation and support service through which schools can review their own eSafety infrastructure, policy and practices.

European Schoolnet has also focused since 2010 on the development of digital skills for youth beyond formal education. The network contributed to the eSkills Weeks and campaigns (to raise awareness of the need for citizens to improve their digital skills for work), and to the Grand Coalition for Digital Jobs and the subsequent Digital Skills and Jobs Coalition (which takes action to tackle the lack of digital skills in Europe).

2007 Stage 5: Action research initiatives on STEM education

In 2007, European Schoolnet was mandated by its Ministries of Education to develop action research initiatives focused on analysing the persisting lack of interest of young students in STEM (Science, Technology, Engineering, Mathematics) studies and related careers. These STEM education challenges are now accepted as a mainstream issue on the European Union's agenda, and European Schoolnet will continue its active contribution based on the experience and evidence it has gathered over the last decade.

European Schoolnet is currently leading two strategic initiatives in STEM education in Europe: (1) the STEM Alliance - building on the InGenious initiative (2011-2014) - is co-managed with CSR

Europe (the European business network for Corporate Social Responsibility) and supported by 15 major industry and private partners, aiming to strengthen links between STEM education and careers, involving all schools in Europe; and (2) the Scientix project (supported by the Science with and for Society programme of the European Commission), which since 2009 promotes the sharing of teaching materials from STEM projects and supports Europe-wide collaboration among Science and Mathematics teachers, researchers, policy-makers and other STEM education professionals.

MAIN-STREAMING INNOVATION

2010

Stage 6: Exploring effective ways of mainstreaming innovative practices

Since 2010, European Schoolnet has also focused on testing new pedagogical approaches within projects and exploring how innovative practices can be mainstreamed and scaled up. For example, the iTEC (Innovative Technologies for an Engaging Classroom) project involved 17 education ministries and was supported by the European Commission's FP7 programme. European Schoolnet has also provided Ministries of Education with evidence, recommendations and practical guidelines that have directly informed policy development at national level and provided a sustainable model for fundamentally redesigning teaching and learning. The development of policy experimentations (supported by the Erasmus+ programme, such as MENTEP) involved significant validation activities conducted using robust research methodologies including randomized sampling approaches to gather meaningful evidence. The "Survey of Schools: ICT in education" commissioned by the European Commission (2013) was the first quantitative randomized survey conducted by European Schoolnet to benchmark progress concerning ICT in education in the EU27, Iceland, Norway, Croatia and

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Turkey, by surveying students, head teachers and teachers on the availability and use of ICT in schools, as well as opinions and attitudes in this area.

2012

Stage 7: Providing professional development through the Future Classroom Lab and the European Schoolnet Academy

Over many years, the results of successful projects (generally supported by European Commission funding) have enabled European Schoolnet and its Ministries of Education to develop a sustainability strategy and implement capacity-building initiatives for schools and teachers all over Europe. The creation of the Future Classroom Lab (in 2012) and the European Schoolnet Academy (in 2014) are two recent major initiatives whose success confirms the importance of further focusing resources on the professional development of teachers and initial teacher education.

Through these initiatives European Schoolnet supports its member ministries by providing both face-to-face and online professional development for teachers across Europe. The Future Classroom Lab (FCL) is an innovative, fully equipped, reconfigurable and inspirational learning environment in Brussels, helping rethink the role of pedagogy and technology. It is an experimental hub where representatives from ministries, industry as well as teachers and students come to explore new technologies and accompanying innovative pedagogies through workshops and hands- on events. Today it is self-sustaining through the support it receives from over 30 industry partners. The FCL model has inspired several ministries at national level.

Future Classroom Lab

European Schoolnet Academy

The European Schoolnet Academy offers free online professional development to educators via MOOCs (Massive Open Online Courses) on a variety of topics concerned with innovation in education, and is the

first of its kind. The active learning model developed by the European Schoolnet Academy has already been very successful in facilitating collaboration between teachers. By involving teachers in the production process as well as closely associating them in the overall learning design, the Academy has also achieved outstandingly high course retention rates. The European Schoolnet Academy has amassed more than 43,000 enrolments since its inception, with a very high average completion rate (48%), far beyond what many similar MOOCs achieve. The Academy infrastructure for online professional development is also available to Ministries of Education to host their own courses, or for adaptation and translation of existing courses for use on members' national platforms.

TEN KEY EDUCATION AREAS NEEDING FUTURE ACTION

European Schoolnet is nowadays a network that provides Ministries of Education with a multi-stakeholder platform for schools, head teachers, teachers, teacher trainers, researchers, and industry, using exchange mechanisms, study visits, working groups, projects, and cross-country policy experimentations to support the transformation of education in Europe.

The network is moving into an exciting new era. With the ongoing support of all of its members, European Schoolnet will strengthen its role as a major think tank addressing upcoming educational challenges. Ministries are faced at national level with key challenges and issues, and the added value of the network is to continue to support all ministries in exchanging policy approaches, teacher capacity-building, whole school approaches to implementing innovative practices, and working with others to bring about systemic change in education systems in Europe.

In order to bring about this transformation over the next decade, **the central focus of European Schoolnet will be on a wider range of school education issues.** More particularly, European Schoolnet has identified **several key areas for action** which will guide its future activities.

Life and work skills for today and tomorrow

Digital citizenship: in an increasingly digital society, schools have an obligation to prepare young people to be responsible and critical citizens in an online world. Every student and teacher must acquire digital competences - and digital citizenship competences - so they can thrive in our digital society and be prepared to respond positively to new opportunities and challenges.

Skills and employment: education and employment must be seen as inter-related issues in any healthy and thriving

economy. Education has a major role to play in partnership with business and other relevant stakeholders to help increase the attractiveness of STEM studies and STEM jobs. Initiatives such as the STEM Alliance must be strengthened and further developed. More widely, the services for schools to provide information and guidance on careers should be an integral part of strategy development in this area.

New teaching practices

Innovative teacher education: the quality of teaching and learning depends on high-quality initial and continuing professional development of teachers alongside committed school leadership. Capacity-building of teachers (including future teachers) and encouraging innovative pedagogy will remain a key mission of European Schoolnet and will be amplified – alongside other initiatives - through the Future Classroom Lab and the European Schoolnet Academy.

Assessment: the evolution of teaching and learning can only be accompanied by matching innovation and change in the way learning is assessed and examined. It is an area where new approaches adapted to new learning modes and models could usefully be developed and piloted.

Schools as evolving organisations

Whole school change: developing innovative schools and supporting whole school change management will require the ongoing development of practical tools such as the Future Classroom Toolkit, but this will also require new projects and initiatives that engage school leaders and help promote shared leadership approaches at school level. The development of new flexible learning spaces in schools will increasingly be key to facilitating widespread adoption of innovative teaching and learning approaches. The Future Classroom Lab and linked

public-private partnerships will continue to provide the basis for further experimentation and mainstreaming.

School networking: exchanges between schools will remain one of the most efficient and cost-effective ways of improving teaching and learning at classroom level. Communities of practice and peer learning, especially when self-regulated, is a highly effective means of spreading inspiring innovative practices, and the number of schools engaged in eTwinning and other collaborative projects is testimony to this approach.

Formal, non-formal and informal learning: our education systems will need to progressively redefine the boundaries between formal, non-formal and informal learning that takes place in and out of school. Technology will continue to transform how, where and when people learn.

Innovation at scale

Education technology: it is of key importance to continue to leverage digital technologies to support learners and teachers, to underpin institutional change, and to enable and mainstream innovation. Appropriately used, educational technologies will continue to play a critical role in implementing future learning scenarios.

Pilot and demonstration projects: the network will continue to provide policy makers with important evidence on which to base policy decisions. Qualitative and exploratory investigation/research is still needed to better understand how some innovative practice can be supported by technology before considering randomised control trials (RCT) approaches. For the practices about which preliminary research already exists, European Schoolnet will continue to explore the added value of RCT approaches in school pilots and include regular exchanges with ministries to define new indicators and new mechanisms for collecting survey data. More research that explores the relationship between learning that takes place in and out of school will also need to be conducted, as well as research on system-wide learning leadership.

Large scale deployment: Europe needs to focus more on supporting successful models for large-scale deployment and adoption of the wide variety of project-based innovations. In order to accelerate the mainstreaming of the Future Classroom Lab concept in both schools and initial teacher education organisations, participative ways must be found to more easily leverage existing funding programmes (especially from EU programmes) and instruments. In addition, cooperation with all institutional stakeholders (especially regions and cities) is essential for contributing to large scale adoption of successful innovation developed in pilot and experimental projects.

FOUR FUTURE PRIORITIES FOR EUROPEAN SCHOOLNET

Policymakers who were involved in the creation of European Schoolnet could not have anticipated to what extent the educational landscape and society in general would change under the impact of ICT over the subsequent 20 years. In 1997 social media did not yet exist, connectivity was slow, and there was little online activity; smartphones and other mobile devices that could access the internet were still a decade or more away from mass adoption, and the downsides such as fake news, screen addiction and cyberbullying were only just beginning to become apparent. In 20 years, great strides in Europe's schools have been made in terms of hardware provision, broadband connectivity, and quality digital content, resulting in rich learning experiences for many young people. Certain challenges, however, remain the same: notably teacher education, school reform, assessment, and mainstreaming innovation.

Where will we be in 2027, or even 20 years from now? Will learning be richer and more personalised, supported by artificial intelligence, assessment invisible and constant, teaching more like tutoring and schools more like social centres? The rapid extension of automation and robotics (e.g. driverless cars, the exponential rise in the use of robots) is profoundly transforming the nature of traditional jobs, and also giving rise to new occupations requiring high levels of digital skills. The Internet of Things is raising new concerns over cybersecurity and privacy. And a future that includes the development of Artificial Intelligence in education is also now a subject for serious discussion.

In line with the changes that stem from the widespread uptake of technologies, society as a whole has changed. The acknowledgement of new societal challenges led in March 2015 to the adoption of the Paris Declaration on promoting citizenship and the common values of freedom, tolerance and non-discrimination through education. Education systems are called upon to foster tolerance, respect for diversity, and civic responsibility from a young age.

Education needs to grapple with all these changes and more. Students born today will graduate from their studies into a very different and changing world. By 2025, our education systems will increasingly need to equip students to think creatively, ethically, rigorously, collaboratively and independently.

According to the key education areas highlighted in the section above, and in line with the changes in society and education, European Schoolnet has identified four priority areas to focus on as a network.

1 Supporting learners to become active and responsible citizens in a digital society

The digital society places new expectations and responsibilities on education and its major actors, school leaders, teachers and pupils, not only as regards the place and use of new technology but also on the values which come into play when it is used inside and outside the classroom. This brings both challenges and opportunities.

Children and young people are growing up in difficult times, times made more challenging when technology - through filter bubbles, fake news, online hate for example - compounds existing inequalities. Meanwhile, a digital gap may exist between school and home and places in between. In this sense, technology can blur questions of citizenship, impacting negatively on formal and informal education experiences. To make the most of digital opportunities, schools need to ensure that digital citizenship is framed in the students' interest. Education should not only allow pupils to engage, but empower them to participate as citizens in a genuine and meaningful way.

Digital citizenship is a multi-faceted concept, covering various dimensions, including:

Media and digital literacy – the knowledge, skills and attitudes children and young people (as pupils and citizens) need in order to deal with the complex, ever-changing and mediatised world, and to participate in society in an active, conscious and critical way.

Digital competence – the need to foster and promote the development of digital competence among teachers, to make sure education systems keep pace with rapid technological developments, in turn preparing pupils for evolving societal demands, both in work and life.

Digitalisation of education – how technology is changing the nature of education, and the role and responsibility of schools in response to societal hopes and concerns as regards copyright, big data, data protection, ethics, and so forth. In this regard, the challenges now faced by the digitalisation of education (including how student data is used, the use of the internet in assignments and exams, the sometimes disruptive use of mobile technologies and social media in schools etc.) must also be properly addressed.

In an increasingly digital world, a key role of schools is to prepare students to behave responsibly. European Schoolnet will further develop and reinforce its actions related to **digital citizenship education**. This will include new initiatives to help develop a fully inclusive education system and equip teachers and students with the culture and tools needed to function effectively in a digital society.

Capacity building of teachers

The main element of the teacher's job is to support, assist and encourage students in learning. The development of personalised learning approaches for students, and of new pedagogical approaches based on project-based learning and collaborative multidisciplinary approaches, is also increasingly motivating teachers to develop new expertise in learning itself. One of the key challenges is to support the emergence of reflective teachers working in collaboration with their colleagues.

European Schoolnet will continue to support the **professional development** of teachers and carry out further work to support new developments in **initial teacher education**. This will include exploring new ways in which the Future Classroom Lab concept can further promote teacher training. The appearance of replica FCLs in a growing number of countries demonstrates how the concept has inspired different stakeholders. Current

funding programmes or instruments can be leveraged in order to significantly accelerate the take-up of the FCL model in Europe.

In this context, the European Schoolnet Academy is a key instrument for supporting large-scale professional development of teachers (both continuing professional development and initial teacher education). In the next phase of development, the European Schoolnet Academy's annual course programme will continue to address key issues regarding innovation in education linked to teacher practices, leadership and school organisation. Ministries of Education will also examine opportunities to develop a European accreditation system for online courses connected to national policies, allowing full recognition of teachers' investment in the Academy courses they choose to follow.

There have been many positive developments in schools such as the development of new pedagogical approaches supported by appropriate educational technologies; new ways of working between teachers and among schools; new ways of accessing training opportunities; and new ways of sharing and exchanging experiences. These developments need to be analysed and lessons from them reflected in the curricula of initial teacher education institutions in order for them to effectively prepare future generations of teachers. Unless we further develop how student teachers are trained and then supported in the early stages of their careers, we stand to lose a key opportunity to mainstream innovative practice in schools. European Schoolnet has already started extending its work into initial teacher education via various projects. Working closely with initial teacher education institutions is an obvious route for mainstreaming successful innovation and preparing future teachers to be fully prepared for when they enter the profession.

⭐3 New learning environments

While innovative, high quality teachers are key for all our education systems, the concurrent challenge is now to move forward on developing innovative schools and supporting whole school change management.

The pace of technological and digital change has an important effect on our economies and societies: schools need to be able to respond in the best way to this new reality. Schools can no longer be considered as isolated learning environments. As technology continues to pervade every aspect of society, there will be an increasing need to **link formal, non-formal and informal learning opportunities** that take place in and out of school.

There will be an increasing focus on connecting the school with its community. This is certain to provide education ministries with opportunities to explore new teaching and learning models, including working closely with the European Commission on the concept of 'open schooling', and how to support new forms of collaboration between formal, non-formal and informal education providers. One vital area here is the contextualisation of STEM teaching connected to industry practices. Through European Schoolnet, ministries of education will further develop and reinforce their work on **innovative STEM education**.

Appropriate leadership strategies are at the centre of this. School leaders, teachers, support staff and administrators will need to work together to identify school needs. This will also mean empowering students to participate in leadership opportunities in their classroom and throughout the school. In the coming years, European Schoolnet will place greater emphasis, therefore, on **developing shared leadership approaches in school**.

In order to support whole school change management, European Schoolnet will continue to further develop three important strategic dimensions which require an appropriate overall school approach: digital citizenship education, STEM education, and innovative pedagogies. This will be taken forward alongside other specific actions supporting the development of skills and competences of key actors in the school, such as carrying out more in-depth work on the competencies required by ICT administrators and support staff in schools (such as guidance counsellors) and the new forms of professional development opportunities required by these staff.

There is also a growing recognition by several education ministries in Europe that the development of new flexible learning spaces in schools is a key factor in facilitating innovative teaching and

learning approaches: further work on this issue by European Schoolnet in the coming years will be important.

⭐ Scaling innovation

Sustainable, large-scale transformation of regular teaching and learning practices requires changes in the practices themselves and the development of implementation capacity to support those practices in education systems. The capacity for **scaling up innovations** has to exist at multiple levels in the education infrastructure (micro, meso and macro), and full and effective use of innovations can only occur if all levels are consciously and permanently geared to change.

Pilot and demonstration projects are a necessary part of how change can be implemented in schools, but, unfortunately, they rarely lead to widespread or sustainable use of innovative pedagogical practice. Part of the reason is that most demonstration projects are focused only on making a limited number of specific interventions without discussing the systemic changes (e.g. policy, funding, regulatory) or establishing implementation capacity to allow innovations and demonstrations to be deployed effectively and more widely.

Drawing on the latest thinking on mainstreaming innovation in education, a key focus for European Schoolnet and Ministries of Education in the coming years will be to intensify work on defining the most appropriate innovative ecosystems and approaches that support large scale deployment and adoption of the wide variety of successful innovations developed in its various projects. In that context, associating territorial authorities (regions, cities) in this process is an essential component to be further developed from the initial cooperation already developed by European Schoolnet.

MAKING IT HAPPEN THROUGH EUROPEAN COOPERATION

Policy level cooperation:

For Ministries of Education, the central purpose of European Schoolnet in 2017 is to develop further the existing mechanisms set up for regular **exchange of knowledge and experience** between policy makers on all issues linked to innovation in education. This greater focus on innovation in education will support countries as they develop their own national policy agendas.

Moving forward, this network will continue to help countries disseminate and share national policy documents, exchange and debate best practices, and organise study visits for the benefit of the whole network community. Co-constructive ways of working on new practice implementation will ensure that all ministries, and particularly those looking at the cutting edge of educational innovation, continue to see value in sharing their experience with other countries. Joining forces to define and test inspirational pilot solutions to issues and challenges will continue to be preferred to the replication of unique and top-down defined patterns or models, and provide room for adaptation to respective national/regional contexts.

By strengthening its connections with each of its members, European Schoolnet will rely on appropriate frameworks (including funding from EU initiatives) to enable European cooperation in testing the development of innovative approaches in education. More particularly, the development of validation pilots and the involvement of ministries in policy experimentations are essential for **collecting the evidence** on which countries can base policy recommendations and through which they can establish a bridge between policies and practices.

School and teacher cooperation:

European Schoolnet not only enables cooperation between Ministries of Education but also brings **schools and teachers**

together. Well before the rise of social media and social networks, European Schoolnet identified the need for schools and teachers across Europe to become part of a 'network of networks' whose strength was to bring together both the most innovative schools and pioneer teachers and those from the majority of schools and teachers, for the benefit and growth of an integrated whole: bringing the "over there" and the "over here" together.

By providing opportunities to meet and work together, European Schoolnet enables educators from different countries and from varied backgrounds to **learn from each other**, be inspired to tackle new challenges and **realize that innovative teaching and learning activities are not limited to others and can also take place within their own environment**. A common feature of EC- and industry-funded projects managed by European Schoolnet is that schools and teachers are brought together from different countries to test new practices and ideas in rich and contrasting contexts and then disseminate the results widely to maximise impact.

Policy and practice:

The strength of European Schoolnet is its ability to act as the **interface between policy and practice**, and it is for this reason that the established connection with schools is so important. Supporting Ministries of Education as a network implies having a well-developed interface between policies and practices. Working with schools and teachers on European cooperation activities represents the best way to collect appropriate evidence on which ministries can base policy recommendations. The network will therefore continue to identify, foster, document and disseminate key innovative practices in schools.

Education is a multi-stakeholder activity and so it is essential to offer schools, teachers, students, policy-makers, researchers and industry opportunities to interact with counterparts from other countries in Europe. This exchange between people has been at the core of European Schoolnet's activities since its early days and will continue to be at the heart of the vision for the innovation we cultivate.

Annex I: Websites

European Schoolnet initiatives

European Schoolnet Academy   www.europeanschoolnetacademy.eu

Future Classroom Lab   fcl.eun.org

lreforschools.eun.org

STEM Alliance inGenious education & industry   www.stemalliance.eu

Projects

all you need is C<3DE   www.allyouneediscode.eu

Amgen | Teach Engaging Science Educators   www.amgenteach.eu

Better Internet for Kids   www.betterinternetforkids.eu

CO-LAB Collaborative Education Lab   colab.eun.org

Digital Skills and Jobs Coalition   ec.europa.eu/digital-single-market/en/digital-skills-jobs-coalition

www.allyouneediscode.eu/dis-code
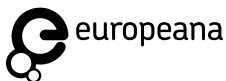
www.econfidence.eu

www.esafetylabel.eu

www.etwinning.net

plus.etwinning.net

pro.europeana.eu/use-our-data/education

fcl.eun.org/fcl-regio

www.i-linc.eu

www.inducas.eu

itelab.eun.org

mentep.eun.org

 https://teacherstrainning.wixsite.com/nestterasmusplus

 http://bit.ly/EUN-next-lab

 www.schooleducationgateway.eu

 www.scientix.eu

 www.space-awareness.org

 stemschoollabel.eun.org

 systemic.eun.org

 www.schooleducationgateway.eu/teacheracademy

 teachup.eun.org

 www.webwewant.eu

The projects listed above include all those in which European Schoolnet is currently involved in at the time of publication. For a full list of European Schoolnet's past and current projects please visit www.eun.org/projects.

Annex II: European Commission funded projects

Co-funded by the Erasmus+ programme of the European Union	CO-LAB · DISCODE FCL-Regio · ITELab MENTEP · Nestt STEM School Label · SYSTEMIC TeachUP
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Financed by the European Union Connecting Europe Facility	Better Internet for Kids
European Commission	Digital Skills and Jobs Coalition Inducas

Annex III: Future Classroom Lab industry partners

Annex IV:
STEM Alliance partners

Premium Partners

General Partners

STEM Alliance is coordinated by **European Schoolnet** and **CSR Europe** (the European business network for Corporate Social Responsibility), and is supported by the above 15 partners.

Annex IV:
European Schoolnet members

This document is the joint result of contributions from all our Ministry of Education members listed below.

AUSTRIA
Federal Ministry of Education - www.bmb.gv.at

BELGIUM (FR)
Ministry of the Federation Wallonia-Brussels, General Administration of Education (AGE) - www.enseignement.be

DENMARK
National Agency for IT and Learning - www.stil.dk

FINLAND
Finnish National Agency for Education - www.oph.fi

GREECE
Ministry of Education and Religious Affairs - www.minedu.gov.gr

IRELAND
Department of Education & Skills - www.education.ie

ITALY
National Instuition of Documentation, Innovation and Innovative Research - www.indire.it

BELGIUM (NL)
Flemish Ministry of Education and Training - onderwijs.vlaanderen.be

CZECH REPUBLIC
Centre for International Cooperation in Education - www.dzs.cz

ESTONIA
Information Technology Foundation for Education - www.hitsa.ee

FRANCE
Ministry of National Education - eduscol.education.fr

HUNGARY
Educational Authority - www.oktatas.hu

ISRAEL
MAKASH and Ministry of Education - www.makash.org.il

LITHUANIA
Centre of Information Technologies of Education - www.itc.smm.lt

LUXEMBOURG
Ministry of Education, Children and Youth - Grand Duchy of Luxembourg - www.men.lu

MALTA
Ministry for Education and Employment - www.education.gov.mt

NETHERLANDS
Kennisnet Foundation - www.kennisnet.nl

NORWAY
Norwegian Centre for ICT in Education - iktsenteret.no

POLAND
Ministry of National Education - www.men.gov.pl

PORTUGAL
Ministry of Education and Science - www.dge.mec.pt

SLOVAKIA
Ministry of Education, Science, Research and Sport - www.minedu.sk

SPAIN
National Institute for Educational Technologies and Teacher Training - www.educalab.es

SWEDEN
Swedish National Agency for Education - www.skolverket.se

SWITZERLAND
Specialist Agency for ICT and Education - www.educa.ch

TURKEY
Ministry of National Education - www.meb.gov.tr

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