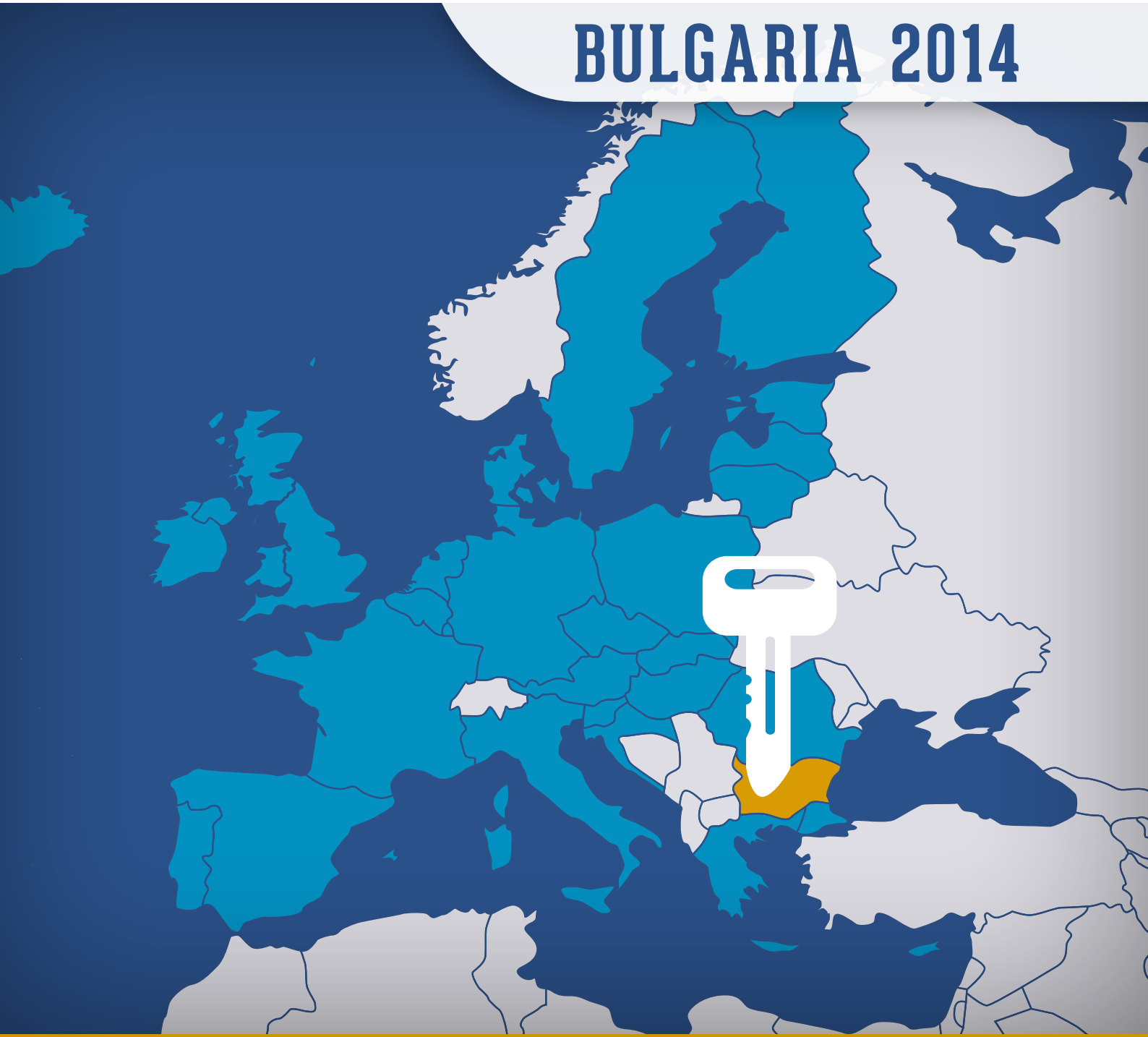
COUNTRY OVERVIEW

BULGARIA 2014



http://keyconet.eun.org

KEYCONET
Key Competence Network on School Education

European Schoolnet

SHORT SUMMARY

Providing a national description contextualizing key competence development in your country [rationale, objectives etc.]:

In times when the technologies are changing very dynamically the most important issues in the context of education are *how* and *when* to apply them so that the learners would master key competences needed today, but also would get ready for solving complex problems of tomorrow. Some promising results in designing and implementing targeted initiatives toward a competence-based education in Bulgaria include joint efforts of administrative, scientific and business institutions to create favorable conditions for: generating effective strategies and actions towards maximising the synergy between the national key competence strategies and the EC recommendations concerning the competences required in a globally competitive, knowledge-based society; implementing key competences in the school curriculum; refocusing the learning resources; implementing innovative educational approaches (e.g. inquiry-based learning), supporting schools in engaging with students (and the community as a whole) as stakeholders.There is however serious need to review and renew approaches to assessment (subject-based & cross-curricular key competences).

KCD INITIATIVES:

What relevant key competence related initiatives (e.g. curricular reform/national strategy/pilot project/public consultation etc. in relation to students' curricula and assessment, teacher training, school organisation, and learning resources) have taken place in your country over the past five years, and which are planned in the future? You may also refer here to the 2012 case notes produced for your country, and any other initiatives which will be the focus of the 2013 case notes.

After Bulgaria joined the EU there was a need to introduce significant changes in education related with the synchronisation of the level of knowledge and the key competences for lifelong learning. Thus a **National strategy for lifelong learning for the period 2008-2013** was developed (*http://www.teacher.bg/Document/Details/3143*) followed by its natural continuation, the **National strategy for lifelong learning for the period 2014-2020** (*http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=880*). The emphasis of the goals formulated in the latter is on extending the pre-school education, improving the results of the 15-year old with achievements at the lowest level (according to PISA), raising the percentage of the students with professional qualification in the technical trends, raising the percentage of the students with a higher education, raising the percentage of the population between 25-64 years having participated in educational courses.

In the **National Program "Qualification"** there is a module called "Qualification of teachers" in which the need for enhancing the social and civil competences is emphasised and relevant activities are suggested in harmony of the recommendations in *European Commission/EACEA/Eurydice, 2012. Developing Key Competences at School in Europe: Chal-*

lenges and Opportunities for Policy. Eurydice Report. Luxembourg: Publications Office of the European Union.

About 40 000 teachers, 1200 vice-principals and 2200 principals of schools and have received training in the last two years within the project **Qualification of education specialists** (BG051PO001-3.1.03-0001).

The **Competence Assessment Information System, MyCompetence** (*http://en.mycompetence.bg*) was created within the larger project "Development of a Workforce Competence Assessment System by Sectors and Regions", carried out by the Bulgarian Industrial Association (BIA) in partnership with the Confederation of the Independent Trade Unions in Bulgaria (CITUB) and the Confederation of Labour „Podkrepa" and the financial assistance of the European Social Fund. The methodology applied considers competence to be a set of knowledge, skills, attitudes and behaviours used to achieve results (performance levels) in a certain professional role or in a particular organisation. Acquiring a certain level of competence can be seen as an expression of the individual's ability to combine and integrate, independently and by developing their own know-how, different elements of skills and knowledge, of professional and personal qualities and of past experience in their behaviours. In other words, competencies are an expression of the individual's ability to perform well at work.

The Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences (IMI-BAS, *http://math.bas.bg*) has been involved in the mathematics and informatics education for a number of years (at a university and school level alike) and has been very active in the development of e-resources, professional development courses for teachers with emphasis on inquiry-based learning and key competences in the context of European projects (recently: Fibonacci - Designing, imple¬menting, testing and formalising a process of dissemination in Europe of inquiry-based teaching and learning methods in science and mathematics in primary and secondary schools, *http://fibonacci.uni-bayreuth.de/home.html*; **MaSciL** – *Mathematics and science for life, http://www.mascil-project.eu*); **KeyCoMath** - *Developing Key Competences by Mathematics Education* - *www.keycomath.eu*).

Three basic **Didactic concepts related to the key competences** have been developed within the **KeyCoMath project** by the IMI-BAS project team and later implemented experimentally with more than 300 in-service teachers :

- **Re-focusing existing resources towards key competence** - studying, evaluating and modifying existing learning environments from a new perspective with a focus on their usability for cultivating, enhancing and developing the key competences of students and teachers alike. The main repository considered has been the Virtual School Mathematics Laboratory *VirMathLab* (*http://www.math.bas.bg/omi/cabinet*) that contains dynamic scenarios developed by the IMI-BAS team in support of the inquiry-based mathematics education, IBME, as well as learning environments developed by project partners from previous and current EU projects dealing with inquiry-based learning, IBL. The

refocusing strategy lead to modifying some of these resources with specific goals oriented to key-competences – e.g. implementing the IBL in the primary school through games, developing critical thinking and imagination, project work *(inquiry-based learning, planning, organising), team work (managing, collaborating, communicating)* – which extend the set of *digital and mathematical competences* with *social competences* and the *sense of initiative*. The competence *cultural awareness and expression* is being enhanced by integrating mathematics with art in a specialised module in the VirMathLab.

- **Designing and launching a two-phase PD course based on the *Collaborative Team Teaching* as a model that teachers can follow and adapt in a class setting** – This course was designed with emphasis on the development of key competences. It consists of two phases and involves two modes of work: *Face-to-face* (first phase) and distant mode (Second phase). In the first phase, the teacher educators work collaboratively as a team (of two/three members) in an inquiry based style thus demonstrating a model for the teachers to follow and adapt in a class setting. In the second phase the teachers are expected to develop and present a course project initiated during the first phase and completed by the end of the course. The written presentations are sent for peer review to other participants in the PD course and, at the same time, to an experienced consultant. The feedback being provided in a shuttle style is followed by consecutive refinements and enrichments of the teachers' projects and the best results are considered for inclusion in the repositories of VirMathLab and Scientix.

- **A *theme of the month* – a web-based platform for developing multiple key competences (in a beyond classroom setting)** – this platform was used for launching the concept A theme of the month aimed at the development of several key competences. The idea is to utilise the free time of the students by inviting them to explore (in an attractive online way, using all available tools) problems of mathematical nature. Every theme of the month is designed as a "ladder" of problems, ordered in increasing difficulty and based on a unifying mathematical idea. Some of the problems are accompanied by dynamic geometry software so that the students could explore the specific mathematics situation, discover relevant properties, try out various strategies and find (possibly an approximate) solution. To solve the more difficult problems the students have to adapt the files accompanying earlier problems from the ladder or develop their own software tools for exploration. Thus the digital competence the students are acquiring and developing goes beyond the one of traditional IT users, reaching its most crucial part – algorithmic thinking and programing. They gain a new mathematical competence thanks to their explorations of mathematical situations, observations of mathematical facts and phenomena. Furthermore, they deepen their understanding of what applying mathematics with the help of computers is, versus learning and memorising mathematical facts.

The **KeyTTT Project** (Teamwork, Training and Technology for Development of Key Competencies - *http://www.keytttcd.cct.bg*) was initiated in the European Year of Creativity and Innovation. The outputs of the project deal with supporting teachers by producing an integrated solution consisting of a teaching methodology, teachers' guidelines book and a qualification course for teachers in mathematics and natural sciences working with schoolchil-

dren aged 9 to 14 in the system of lower secondary education. The Educational institutions from Bulgaria that have participated in this project are: The Department for Information and In-Service Teacher Training (DIITT) at Trakia University in Stara Zagora, and the Center for Creative Training in Sofia. An international conference "*Key Compétence in education – strategies and practices*" was organised providing a good platform for presenting practices for forming key competences in mathematics and science.

A *Competence Based Framework for Curriculum Development* has been developed and published within the framework of the European funded PICTET Tempus project (*http://www.pictet-tempus.sstu.ru*).The main objective of this handbook is the development and advancement of procedures and tools for designing and implementing competence based curriculum matching competences in higher education and economy.

A number of projects have been realised within the European Researchers' night initiative in which series of events and performances were focused on developing key competences of the students (*http://rn.fmi.uni-sofia.bg*).

A series of competitions and contests on national level in mathematics, science and IT is being organised by the Ministry of Education and Science (*http://www.mon.bg*), the Union of Bulgarian Mathematicians (*http://www.math.bas.bg/smb*), the Institute of Mathematics and Informatics. While enhancing both mathematical and digital competences has been expected and observed in the contests with a longer tradition, there are newer contests and forms of research at school age that contribute to an additional focus on the sense of initiative of the pupils, on *learning to learn and doing research, as well as on social competences, e.g.: National contest for key competences in natural science; Mathematics with a computer; High school institute of mathematics and informatics (http://www.math.bas.bg/hssi); High school institute at the Bulgarian Academy of Sciences.*

The participation of pupils at scientific conferences is organized in the context of various forums, e.g. at the annual conferences of the Union of the Bulgarian Mathematicians there is a special section for high school students; the attendants of the *Dynamic Mathematics in Education conference* (*http://www.math.bas.bg/omi/dmo*) organized by IMI-BAS include teams of teachers and students. In addition, there are special conferences and science fairs for high school students at which they present their research projects in mathematics, IT and science.

An essential output of all these initiatives is the enhanced motivation of teachers to implement key- competences based educational strategies and practices thanks to the joint efforts of the Ministry of Education and Science and the researchers from the Bulgarian Academy of Sciences.

OVERALL KCD APPROACH:

How would you characterise the overall approach to key competence development in your country? Is it a holistic approach characterised by an overarching strategy, or rather a targeted approach focusing on one or more specific dimension of the education system (student curriculum, assessment, teacher training, school organisation, learning resources etc.)? Does it cover formal and non-formal learning, both primary and secondary school levels?

There have been attempts to design a holistic approach to key competence development but implementing an overarching strategy turned out to be very difficult due to the political instability in the recent years leading to a lack of a new (relevant) law for the general education. As stated by the newly elected minister of education Prof. Todor Tanev (*http://www.mon.bg/?go=news&p=detail&newsId=895*): *The education law projects are being prepared for 8 years by different managements of the Ministry of Education and Science. For a law to have a lasting effect, a vision beyond the mandate of a specific government is needed.*

Thus, multiple approaches have been designed and implemented focusing on one, or more specific dimensions of the education system.

As it could be seen from the previous section, key competence development, KCD, concerns various dimensions of the education system - refocusing of the learning resources, teacher education and qualification courses, introducing new forms of students' self-expression in terms of competences, etc. Furthermore, the targeted KCD approach covers formal and non-formal learning, both primary and secondary school levels

KEY COMPETENCES ADDRESSED:

Is there a focus on any particular EU key competence/s or a combination of them, or perhaps there is more of a focus on alternative/complementary competences defined at national level?

The latest *Programme for a development of the education*, approved in 2009, has focused on competences in foreign languages and on digital competences as key factors for the further realisation of the students. Such a focus was natural since EU research shows that Bulgarian students have the lowest level of ICT skills among European countries - only 20 % of the Bulgarians acquire their ICT skills at school. Improving language learning in secondary education was determined as another key objective since the results of the Bulgarian students in this respect are far below the results of the students in most European countries.

From a scientific point of view however, the development of key-competences based education covers every single one of the eight key competences and on the synergy between them.

STAKEHOLDERS INVOLVED:

Who are the main stakeholders involved in key competence development in your country?

The key competence development is considered to be of a crucial significance for preparing the citizens of the knowledge-creativity based society. Thus stakeholders include practically every aspect of society – students, parents, teachers, educators, policy makers, business, and academic institutions.

The employment of young people and inexperienced staff leads to additional training costs and can jeopardise the production – a risk that many companies are reluctant to take. The reason behind the shortage of adequate staff does not only lie in schools but also in the existing training and lifelong learning programs. More than half of these programs are funded with public funds and most of them are run by the National Employment Agency. That is why they are aimed at the training of unemployed people and less to retraining and improving competences of employed people. Some of the problems of these programs are identical to those in professional schools: outdated education, too much theory and not enough practice, lack of connection between the needs of the labour market and skills that students acquire.

Despite these difficulties, some promising results have been achieved during the last several years. The private sector has taken steps towards organising free professional development courses and internships as well as hiring people for longer probation.

The main challenge is to prepare the citizens of the future for becoming good professionals in professions that still do not exist, in harmony with the vision that "school is not a preparation for life, it is life itself"...

KCD IMPLEMENTATION PROCESSES:

How does the implementation of key competence development/reform in school education function in your country? *(e.g. process followed, political commitment, consultation with stakeholders and their respective roles, incentives for stakeholders, dedicated funding, teaching material, definition of goals and standards, assessment and evaluation mechanisms, impact on teacher training/professional development and school practices/leadership, scaling-up approach, based on research/evidence? etc.)*

The most typical recent tendencies in Bulgarian education as identified by different studies include:

- The amount of overall funding increases progressively during the years of reforming the educational system.

- School education is lagging behind that of other European countries in terms of students' achievements.
- Teaching staff faces a number of problems, the most serious trend being the lack of young staff.
- Social inequality is the main factor behind the poor performance of Bulgarian students in international studies on the quality of education.

Improving the family environment and the school conditions in smaller settlements is therefore crucial for the improvement of the key competences of Bulgarian students.

Some promising results in implementing the key competence reform include a serious dialog between the business institutions and the Ministry of Education and Science – students are offered various forms of internships; in-service teacher qualification is being offered by state- and private institutions alike. There are well synchronized activities between the Regional inspectorates in education, on one hand, and the publishing houses on the other, concerning the renewal of learning resources. There is however serious need for reviewing and renewing approaches to assessment (subject-based & cross-curricular key competences).

OBSTACLES AND FACILITATORS:

What would you identify as obstacles and/or facilitators to developing and implementing a key competence approach in your country's education system, or to more generally introducing any type of educational reform related to the definition of key competences and revision of the curriculum, and to joint collaboration on such issues relying on the input from those working on different dimensions (e.g. teacher training, learning resources etc.)?

The main difficulties are related to the lack of relevant legislation, assessment systems, intrinsic motivation among a large percentage of students for achieving high educational results, closer cooperation with parents towards setting and pursuing ambitious goals for their children allowing for revealing their full potential, as well as to some demographic problems.

Still, some promising initiatives towards the development and the implementation of an approach based on key competences include:

- a wide spectrum of contests, fairs, summer research schools embracing students from the whole country providing them with opportunities to develop and demonstrate key competences in mathematics, digital technologies, sense of initiative, learning to learn on their own, critical thinking and imagination, working on projects (inquiry based learning, planning, organising), team work (managing, collaborating, communicating), and social competences.
- developing and publishing e-resources with open access in support of inquiry-based education and development of key-competences.

- delivering professional development courses for teachers with emphasis on key-competences based education.

The first positive feedback of such initiatives shows that the teachers and students alike raise their self-esteem and self-confidence, and feel important and taken care of. They see learning as an on-going process, and their academic results – as personal achievements rather than "entry tickets" for the next level of education. As for the teachers, they see their own role as a part of research teams rather as a "reality-check" for researchers…

ADDITIONAL INFORMATION/USEFUL URLs:

- National strategy for lifelong learning (2008-2013):
  http://www.teacher.bg/Document/Details/3143
- National strategy for lifelong learning (2014-2020):
  http://www.strategy.bg/StrategicDocuments/View.aspx?lang=bg-BG&Id=880
- Competence Assessment Information System MyCompetence:
  http://en.mycompetence.bg
- Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences (IMI-BAS):
  http://math.bas.bg
- Fibonacci project:
  http://fibonacci.uni-bayreuth.de/home.html
- MaSciL project – Mathematics and science for life:
  http://www.mascil-project.eu
- KeyCoMath project – Developing Key Competences by Mathematics Education:
  www.keycomath.eu
- Virtual School Mathematics Laboratory (VirMathLab):
  http://www.math.bas.bg/omi/cabinet
- KeyTTT Project (Teamwork, Training and Technology for Development of Key Competencies:
  http://www.keytttcd.cct.bg
- PICTET Tempus project:
  http://www.pictet-tempus.sstu.ru
- European Researchers' Night:
  http://rn.fmi.uni-sofia.bg
- Ministry of Education and Science:
  http://www.mon.bg
- Union of the Bulgarian Mathematicians:
  http://www.math.bas.bg/smb

- Dynamic Mathematics in Education conference:
  http://www.math.bas.bg/omi/dmo
- High School Students Institute of Mathematics and Informatics:
  http://www.math.bas.bg/hssi
- The Minister of Education and Science visits two schools in Sofia:
  http://www.mon.bg/?go=news&p=detail&newsId=895
- Professional high school in tourism “Aleko Konstantinov”, Pleven:
  www.pgt-pleven.com, http://www.youtube.com/watch?v=xudsQ_OfGFk (Euroscola 2014)
- eTwinning Bulgaria:
  http://www.etwinning.hrdc.bg
- National Educational Portal: h
  http://start.e-edu.bg/news.php?gid=2&gro=34
- Network of innovative teachers: h
  ttp://www.teacher.bg
- Challenges and Opportunities for Policy:
  http://eacea.ec.europa.eu/education/eurydice/thematic_reports_en.php
- Implementation of the European Agenda for Adult Learning 2012-2014, Bulgaria, Progress report:
  http://eacea.ec.europa.eu/llp/project_reports/documents/adult-learning/progress_report_bulgaria.pdf

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ABOUT EUROPEAN SCHOOLNET

European Schoolnet is the coordinator of the KeyCoNet project.

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

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

- Policy, research and innovation: information sharing and evidence building.
- Schools services: enhancing cooperation between schools across Europe.
- Advocacy: how ICT and digital media contribute to transforming teaching and learning processes.

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