



Supporting Key Competence Development: Learning approaches and environments in school education

Conference Report

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1. Conference overview

Developing key competences for all is at the heart of the [European Education Area](#) where everyone should have access to high quality education, training and lifelong learning. In today's world, young people need a broad range of competences to find fulfilling jobs and become independent, active citizens.

The European Council adopted [Recommendation on Key Competences for Lifelong Learning](#) on 22nd May 2018 and set out eight key competences we all need for personal fulfilment and development, employability, active citizenship and social inclusion. The Recommendation urges Member States to ensure that everybody develops key competences throughout life by using variety of learning approaches and environments, supporting their teachers and trainers and assessing and validating key competences.

The European Commission organised the international conference on *Supporting Key Competence Development: Learning approaches and environments in school education*, in Brussels on 12-13 November 2019. The **aim of the conference** was to encourage participants to develop and implement concrete school policy actions to support the development of key competences. Participants discussed learning approaches and environments in school education, including Early Childhood Education and Care (ECEC) and initial Vocational Education and Training (IVET).

The conference gathered **over 230 participants** including policymakers, EU level stakeholders, practitioners, researchers and experts involved in school education policies and reforms (Annex 4: Participant list). Participants represented over 30 European countries and sixty-six participants were official representatives of 23 EU Member States and Norway. Representatives of 3 Eastern partnership countries (Moldova, Georgia, Ukraine) also took part.

The conference was opened by Themis Christophidou, Director General for Education, Youth, Sport and Culture and the **conference programme** (Annex 1) included keynote speakers, panel discussions and workshops. The **participatory approach** to the conference provided many opportunities to engage with the speakers and with each other through workshops, plenary sessions, a Pro-Action Café and a Gallery Walk. Participants were invited to contribute to the discussions by voting on topics in real-time through Mentimeter (mentimeter.com). There were also opportunities to engage with relevant

Erasmus+, eTwinning and Horizon 2020 projects in the conference exhibition area. Local Performance Art group, Zikit (zikit.be) added a fresh perspective to the proceedings by involving the audience in an artistic performance to get the energy flowing. Participants welcomed the opportunity to hear more about the cultural heritage of the La Plaza hotel in the very interesting Cinema Room where the conference was held.

There was strong support through the conference for encouraging a broadening of learning approaches and environments, both within schools and classrooms and through interacting with the world outside, whether that be through virtual means (Maker education, Beaconing or Online labs and virtual simulators for engineering education) or physically (Collaborating with external organisations or Outdoor learning).

In considering how policy actions, that support the development of learning approaches and environments, can be developed and implemented a number of **key messages** were drawn from the discussions. These are:

1. Focus on system-wide developments.
2. Recognise the central role of teachers.
3. Encourage flexible approaches to curriculum and assessment.
4. Support stakeholder engagement and collaboration.
5. Develop a clear vision and purpose for the use of digital technologies.
6. Embrace and promote language diversity.

We invite you to read this report to find out more about the conference discussions and key messages.

An input paper and other materials relating to the conference can be found on the [conference website](#).



2. Keynotes

Themis Christophidou, Director General for Education, Youth, Sport and Culture welcomed participants and set the agenda for the two days by emphasising the need to drive transitions rather than being driven by them. Mrs. Christophidou focused on two of these transitions: the transitions to a digitalised society and to an inclusive society.

Dr. Tiina Silander, Director, Department for Higher Education and Social Policy and General Upper Secondary Education of the Ministry of Education, Finland outlined some recent reforms in the Finnish education system, where a new core curriculum has been in place since 2016 with a strong emphasis on values based on four pillars:

- Respect the uniqueness of each student
- Promoting each student as individual
- Valuing cultural diversity
- Understanding the necessity to develop a sustainable way of living.

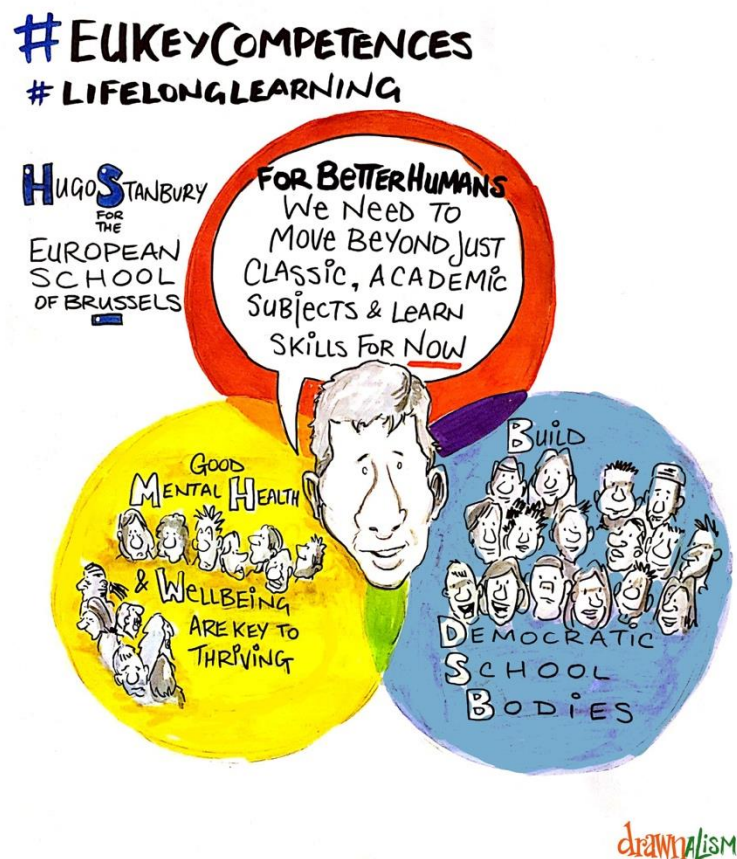
She highlighted professional development of teachers as key to implementing change with focus points on peer support, research-based education, collaboration, participation in national and international research and a Teacher Education Forum.

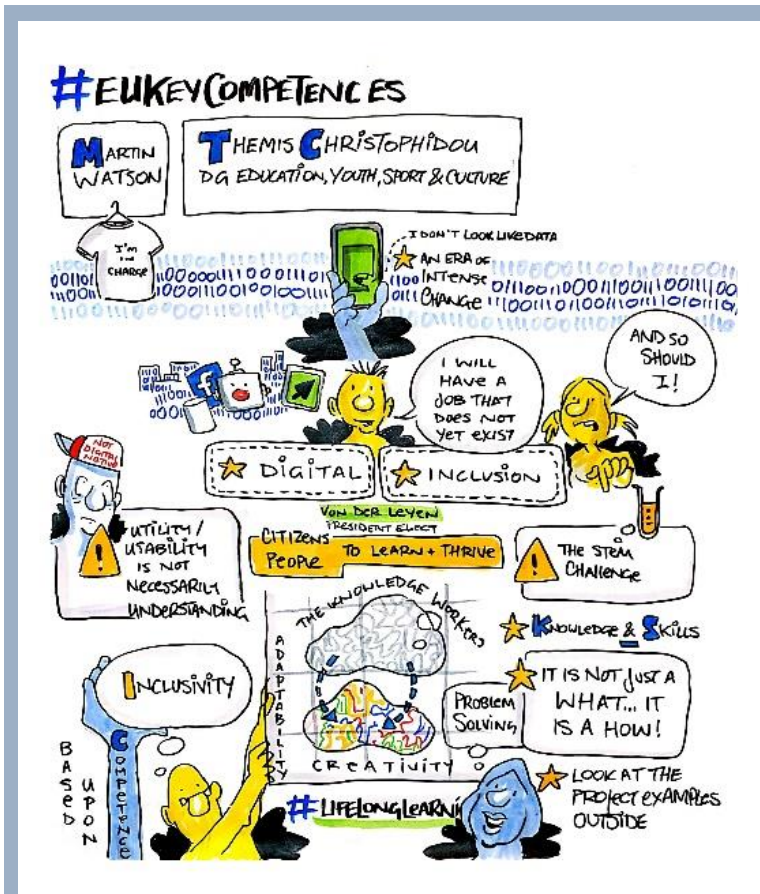
Dr. Alexandre Pachulski brought conference participants on a tour of the workplace of the future where work is going 'multi' – multiple people, multiple projects, multiple employers and multiple expectations and posed the question, "how are we going to adapt to these changes?" Added to this is the beginning of 'robulation' – the introduction of robots and artificial intelligence to the world of work and life in general and whether we should be worried about the impact of these technological advances or whether we should see them as opportunities. Dr. Pachulski encouraged participants to work together by building a society that works with everyone's uniqueness and to really start thinking about how to develop an ethical and regulatory framework for the technology and for artificial intelligence.

Cesar Bona, teacher and Global finalist in the 2014 Global Teacher Awards questioned the current approach to education, where the focus is on preparing children for the future, to be employable beings and for jobs that don't exist yet. He asked participants to reflect on education as providing the tools we need to get to know ourselves, to socialise, and to interact with the environment. What is important is that children learn to create networks and to find ways to share; that they learn from each other.

Peter Tabichi, 2019 Global Teacher Prize Winner, spoke to the conference through video about the importance of good teaching. His message was that to be a great teacher you have to be creative and you have to embrace technology and to promote modern ways of teaching. Teachers need to enable students to think beyond the confines of the classroom and understand that what they learn applies to and impacts their lives outside of school.

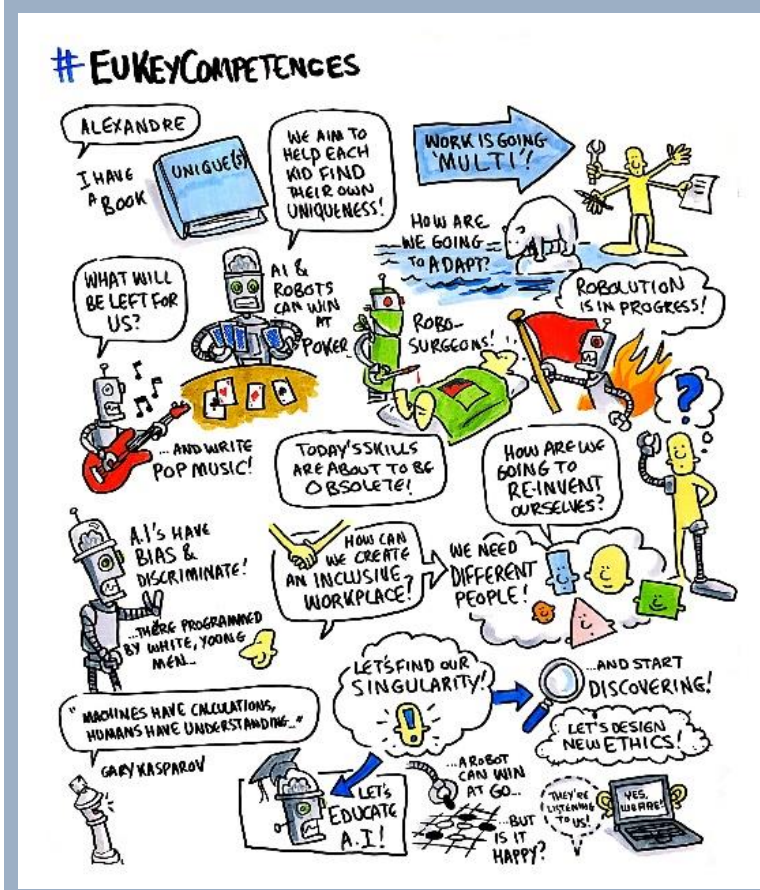
Hugo Stanbury from European School Brussels III spoke on behalf of the students present at the conference. He said that there is a need to support subjects that are sometimes not valued in education systems. Many of these subjects are important for developing competences such as debating and critical thinking. He referenced Art for the development of collaboration and perseverance and Music for discipline. Competences make healthy, well rounded and good human beings and therefore these are the types of subjects that we should promote and value more.





Themis Christophidou, Director General for Education, Youth and Culture

"We want high quality, innovative and inclusive education all across Europe. And, key competences can support this vision".

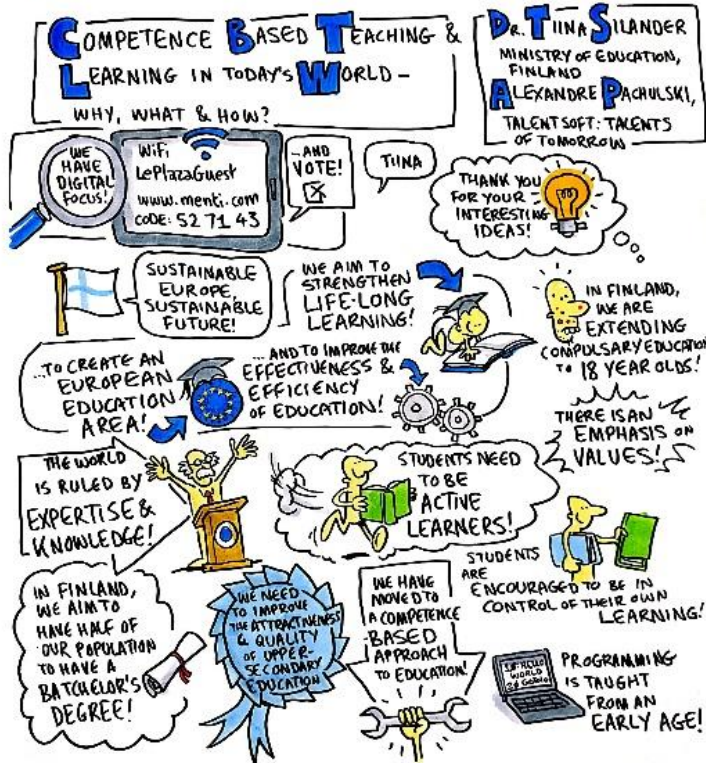


Alexandre Pachulski, Talentsoft: Talents of tomorrow

"We are at the beginning of 'robolution' – the introduction of robots and artificial intelligence to the world of work and life in general. Should we be worried about the impact of these technological advances or should we see them as opportunities?"

"We need to start thinking about how to develop an ethical and regulatory framework for new technology and for artificial intelligence".

#EUKEYCOMPETENCES

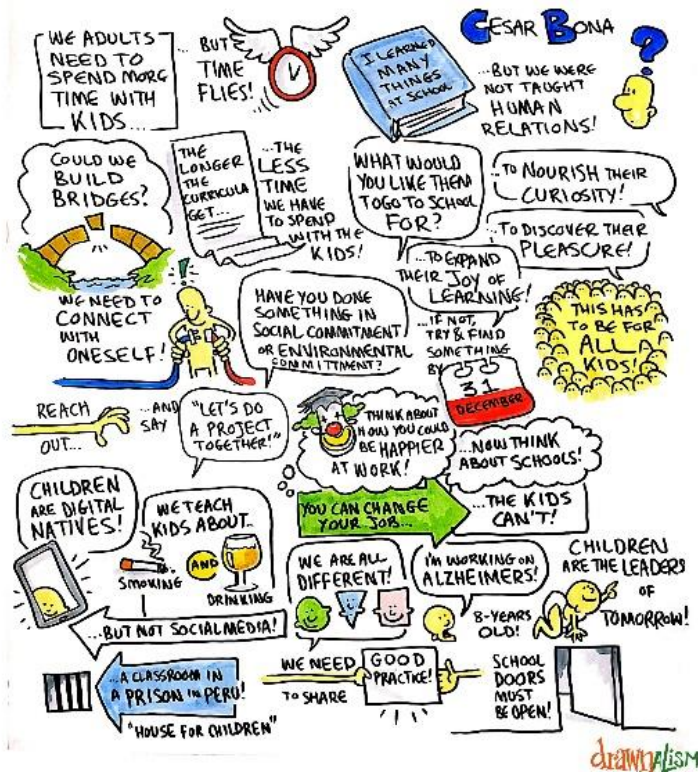


Tiina Silander, Ministry of Education, Finland

"There is a strong emphasis on values and the development of a collaborative school culture in Finnish schools."

"As schools are changing, teacher education must change also. In Finland the focus points are peer support, research-based education, collaboration, participation in national and international research and a Teacher education forum".

#EUKEYCOMPETENCES



Cesar Bona, teacher and author. Finalist of Global Teacher Prize 2014

"Children go to school to nourish curiosity, to fulfil their own Potential, to discover intellectual pleasure, to spark their creativity, to learn the joy of learning, to make new friends and to socialise".

"Let's make the school a place that children decide to go every day".

3. Panel Discussion

National educational reforms supporting key competences development in school education in Europe

Four panelists discussed national educational reforms supporting key competences development in school education. This was followed by questions from conference participants. The quotations give a sense of the key themes of this discussion.



"There are many success factors to reform processes, but stakeholder engagement and capacity building were the most important in Ireland".

Harold Hislop, Chief Inspector, Ireland



"Teachers as active participants, engaged stakeholders, involved in the process and not just end consumers".

Margit Timakov, Head of Estonia Teacher Association



"To see reform happen we have to work with the teachers, parents, students and wider community".

Lidija Kralj, Assistant Minister, Croatia



"We should not be focusing on individual teachers; we should be focusing on a whole-school approach".

Kris van den Branden, KU Leuven, Belgium

Dr. Harold Hislop, Chief Inspector from the Department of Education and Skills in Ireland described the Irish experience of implementing curriculum and assessment reforms that incorporated competence-based approaches to teaching and learning and assessment. His strong message for the conference was that stakeholder engagement and capacity building in the system were the most important factors and he cited teachers as the main group of change agents who need support to understand the changes being introduced.

Lidija Kralj, Assistant Minister, Croatia followed with an account of the reforms currently underway in Croatia. Key competences are mirrored and easily recognised in the curriculum. She reinforced the need to work closely with teachers, parents, students and the wider community. Croatia designed a model based on a whole school approach and worked on active learning and also on assessment. Effort was put into teacher professional development and building key competence development with the teachers. It will take time to embed this work in the whole system but to have sustainable reform all teachers need to be involved.

Margit Timakov, Head of the Estonian Teacher Association brought a 'reality check' to the discussions stating that policy makers need to consider the impact of policies on

teachers and schools. Policy makers should pay attention to what kind of policies they are developing and use criteria for ensuring 'good policies' are in place. These criteria could include:

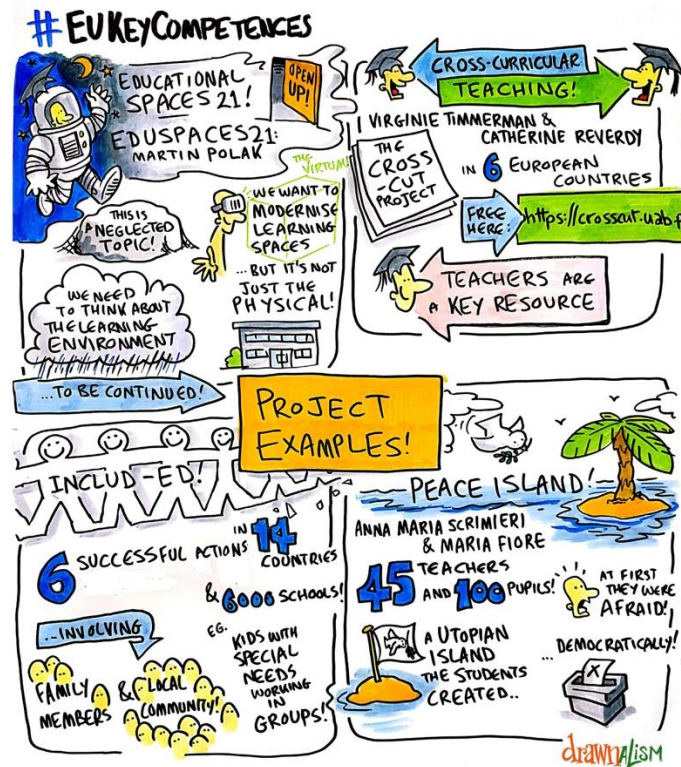
- What is the scope of the policy versus what is happening in classrooms;
- Will the policy increase the teacher's workload or help them to deal with it;
- What is the balance between theory and practice and the 'ideal' or 'real-world'?

Prof. Kris van den Branden, from KU Leuven in Belgium told the conference that if we are taking the development of key competences seriously, we will have to take teacher education seriously as this is a key factor for success. Research tells us that we should focus on a whole-school approach to professional development rather than on individual teachers and that schools should be supported to develop agency. Teachers professional development needs to be firmly embedded in the classroom context, rather than going out to expert centres to get expert advice.

4. Exhibition projects

Twenty-four projects from Erasmus+, eTwinning and Horizon 2020 (Annex 2) were on display in the exhibition area throughout the conference. These projects presented dynamic displays and co-ordinators were on hand to discuss the activities with participants. The projects helped participants to learn about innovative approaches supporting competence development that are already underway.

Projects ranged from gamified lesson plans, using stories and narratives (Beaconing) to art entrepreneurial projects (Find your way through Art). A project entitled 'Pollution! Find a Stem Solution' increases students' interest in STEM, while 'CO-LAB' is all about collaborative learning.



The projects informed the conference discussions by helping participants to envisage creative approaches to competence development. Photographs on the next page give a flavour of the engagement with the projects.



5. Workshops

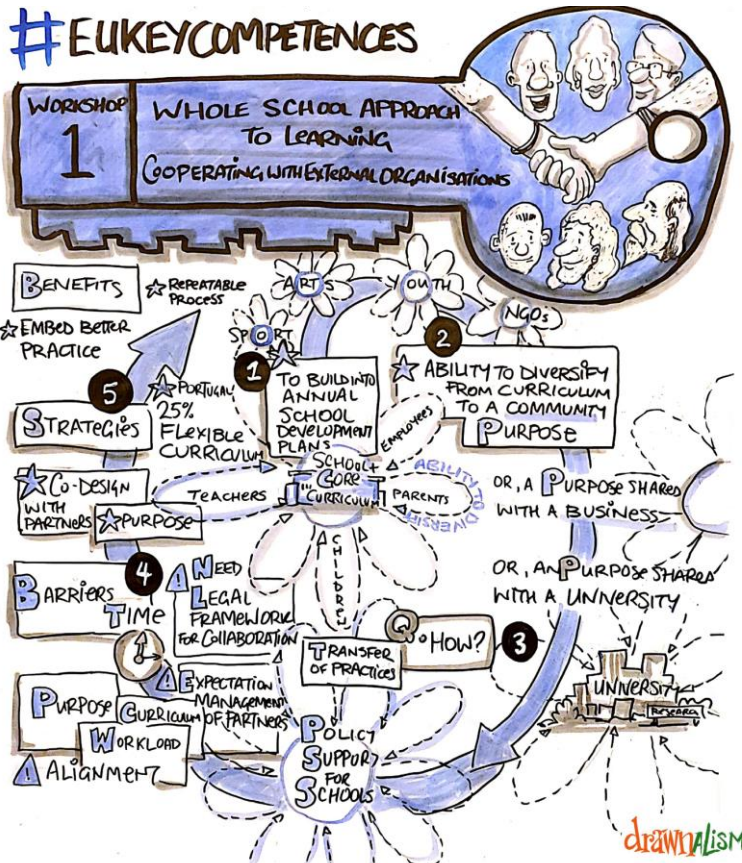
Six parallel workshops had inclusion and high quality education and training as their underlying concepts. The workshops explored conference themes further and gave participants the opportunity to explore relevant topics in greater depth.

Outputs from the workshops included key messages and practical actions. The key messages were shared with all conference participants in a plenary on Day 2. Practical actions were presented and discussed further at the Pro-Action café (Day 2). Overview of practical actions is presented in Annex 3.



WORKSHOP 1

Whole School Approach to Learning – Schools cooperating with external organizations



This workshop looked at how a Whole School Approach can create learning environments and contexts that foster competence development for all learners, valuing diversity amongst pupils, and taking into account disadvantaged pupils.

An illustrative example of good practice, presented by **Teresa Sordé Marti**, outlined **examples of collaboration with outside partners and stakeholders** such as business, arts, sport and youth community, higher education or research institutes.

There was a consensus that cognitive and social learning depends more on exposure to diverse interactions, in terms of quantity and quality. The role that external actors can play in expanding these interactions is crucial, to help schools to be much more connected to the real world. There is a recognition that European educational systems are already doing this, but also that there is potential to do much more.

Challenges identified

- » Finding time to engage with external organisations and deciding which collaborations to focus on.
- » Systems that are too centralised and lack flexibility to promote activities “outside” the curriculum.
- » Lack of coordination between partners in defining the activity resulting in different expectations.
- » Lack of financial resources.
- » How to move beyond examples of one teacher setting up collaborations out of personal interest to a more systemic approach.

Key messages from the discussion

1. There are obstacles that make this type of collaboration difficult. These include finding a common purpose and lack of time and flexibility.
2. Strategies needed to improve cooperation with external organisations include the promotion of processes of co-creation to develop shared understanding and expectations; finding ways to incentivise schools and teachers to become involved; and making curricula more open and flexible (Portugal cited as an example).
3. A framework is needed to ensure that schools have the time needed.

Strategies proposed

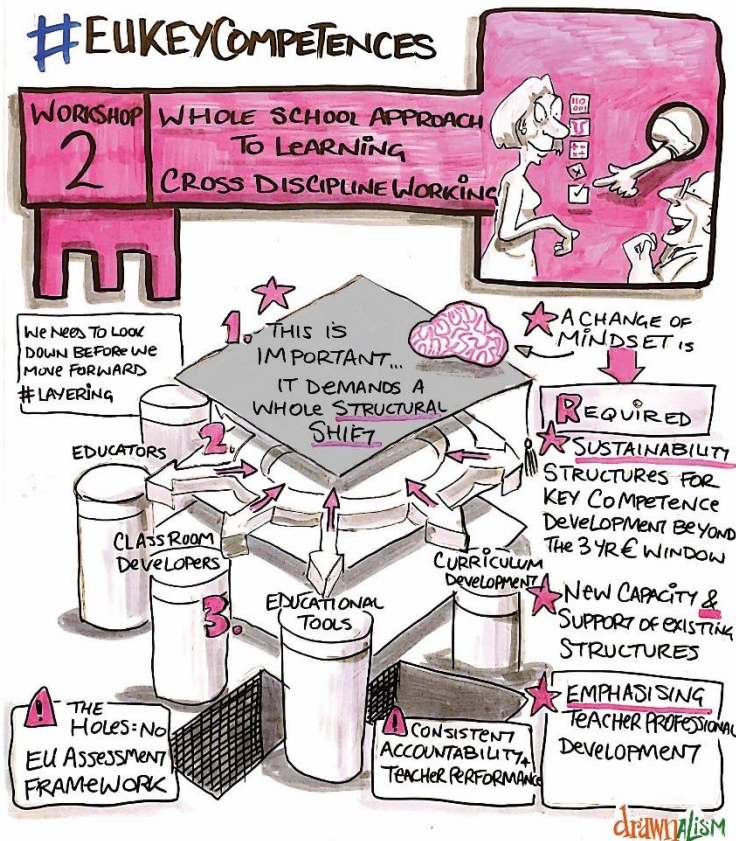
- » Creativity in identifying ways that challenges can be converted into opportunities.
- » Promoting processes of co-creation to develop a shared understanding and expectations.
- » Making curricula more open and flexible as exemplified new approaches in Portugal.
- » Providing teachers with time to organize collaborations.
- » Providing recognition for the teachers, students etc.
- » Incentivisation for schools to include this type of collaboration in their school planning.
- » Introducing guidelines for quality assurance mechanisms.

Practical actions proposed

1. A general framework to systematize the collaboration between schools and external actors, in order to make sure that a process of co-creation is followed. This would include the basic conditions of the collaboration, establishing the basis of it, official recognition, ethical code, types of participation, terms and conditions.
2. Raise awareness about the benefits of collaborating with external actors.

WORKSHOP 2

Whole School Approach to Learning - Cross-discipline learning



This workshop was based on the idea that the development of key competences is often facilitated by the provision of context from other disciplines. For example, teaching science in the context of the arts, humanities and social sciences is recognised as an important learning aid. Another example is Content and language integrated learning (CLIL).

Five illustrative examples of good practice were presented:

- » Connecting mathematics and science competence with citizenship competence (ICSE) presented by **Katja Maass**;
- » Le Bal: the digital and educational platform presented by **Marie Doyon**;
- » Developing assessment to support key competences presented by **Constantinos P. Costantinou**;
- » Innovative learning environments presented by **Franz Bogner**;
- » The CLIL Experience in Italy presented by **Letizia Cingano**.

Key messages from the discussion

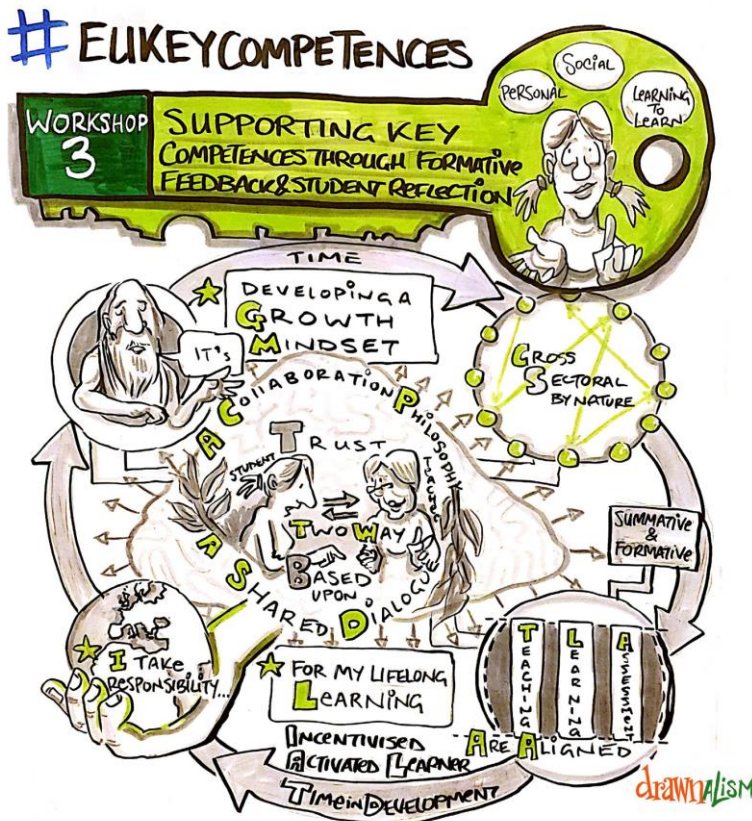
1. Support changes in teaching to a competence-based approach. Long term support structures are needed for teachers.
2. 'Cross-disciplinary' is not against the disciplines – but goes beyond them. Subjects are needed as they are, but the links between them also need to be emphasised.
3. Policy experimentation projects to help open up the curriculum should be increased. These projects could also look at teacher professional development, milestones, how teachers can grow in their profession.
4. Frameworks for Entrepreneurship and Digital competences are very useful, as will the forthcoming framework for the personal, social and learning to learn competences. Frameworks for the other competences also need to be developed.

Practical actions proposed

1. Support sustainability and scaling up of projects and networks in the Member States to further support capacity building.
2. Support collaboration among stakeholders – teachers, teacher educators, classroom developers, curriculum developers.
3. Emphasise how co-teaching and cross-teaching can be supported as part of teacher training.

WORKSHOP 3

Supporting key competences through formative feedback and student reflection



This workshop addressed the role of formative assessment and student feedback in the development of key competences. There were two presentations to help set the scene for the group discussions.

Janet Looney provided a critical reflection on the concept of formative assessment and outlined how it is an approach to teaching and learning. Formative assessment may contribute to the development of a growth mind-set because the clear definition of learning outcomes and criteria for assessment combined with the practice of peer assessment of the work may help students to identify gaps in their learning and what they need to do to achieve desired outcome. Marcelino Cabrera-Giraldez presented links between formative assessment and Personal, social and learning to learn competence.

Ben Murray and Annette Honan presented an example from Ireland where a 'Focus on Learning' toolkit has been developed for schools to support the professional learning of teachers around formative assessment and feedback and on students reflecting on their learning. The toolkit has also been used to build understanding among key stakeholders: school leaders, inspectors, teacher educators and examiners about this important learning approach.

Impacts and opportunities

- » The collaborative approach taken in the Irish example ensured that teachers' voices were heard and that there was more transparency at school level.
- » All stakeholders had the opportunity to develop professionally.
- » This methodology enhances learner motivation and improves relationships and team spirit in classrooms.
- » There is more of a focus on wellbeing.
- » Well-designed formative feedback results not only in more successful acquisition of key competences but also reinforces self-esteem, self-confidence, motivation etc.

Key messages from the discussion

1. Formative assessment needs to be more integrated with other processes of education, for example, with teaching and learning and with summative assessment.
2. A framework on formative feedback and student reflection should be further enhanced and supported as it is an important factor in acquisition of key competences.
3. Formative assessment is about a two-way dialogue based in trust.

Challenges

- » Gaining understanding and acceptance by teachers and parents.
- » Possible lack of suitable tools and capacity.

Enablers

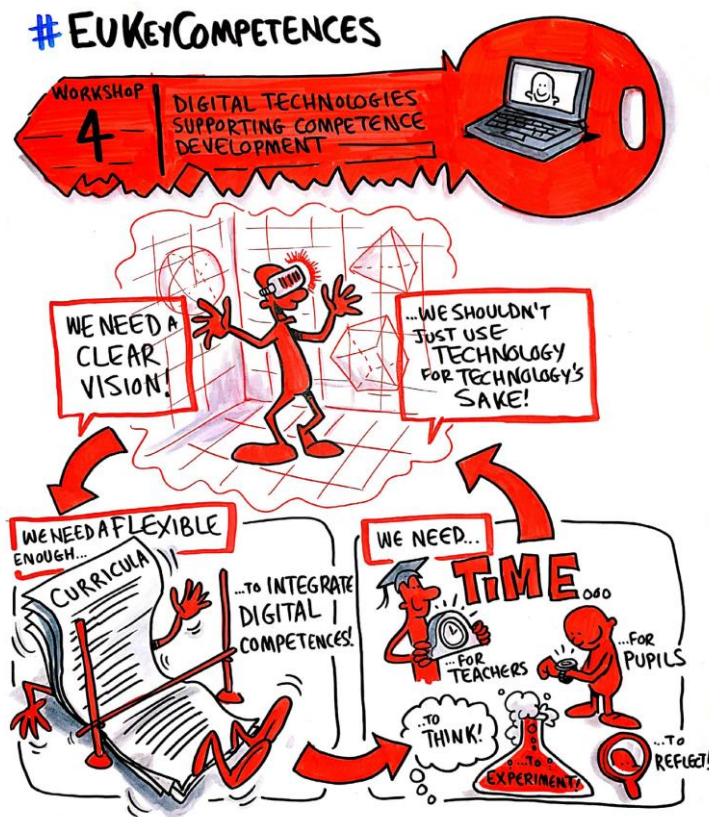
- » Increased general awareness through seminars, peer-learning and leadership.
- » Support from school leaders.
- » Sharing successful testimonies from schools and teachers.
- » Willingness of stakeholders to be the part of the process.

Practical actions proposed

1. Aligning formative and summative assessment.
2. How to support the assessment of key competences by embedding in subjects.

WORKSHOP 4

Digital technologies supporting key competence development



This workshop focused on how the increased use of digital technologies in education can enrich the learning experience and help students to learn how to use technology in creative, collaborative and proactive ways. The workshop explored how digital technologies can support and facilitate competence development and focused on approaches that facilitates the innovative use of digital technologies to foster a wide set of competences.

Three illustrative examples of good practice were presented:

Karien Vermeulen presented on Maker education which is a new educational movement that sees potential in the process of 'making' at school. Maker education hopes to achieve the development of 'maker-skills' such as developing creativity, imagination, engineering and problem-solving through making in school and by creative use of digital technologies.

Lise Møller and Lasse Remmer presented on Future classroom at Teacher University College, Copenhagen. The Future Classroom Lab DK is a physical space in Copenhagen. It is used by K12 schools as a classroom for Future Classroom Teacher, which supports capacity building of a school or of an entire staff of teachers in a municipality. Teachers take back new learning approaches and use of technologies and implement them in the day-to-day teaching.

Yves Punie presented on SELFIE, a self-reflection tool that supports the digital capacity building of schools. SELFIE (Self-reflection on Effective Learning by Fostering the use of Innovative Educational Technologies) helps schools embed digital technologies into teaching, learning and student assessment.

Challenges identified

- » Lack of time and space for teachers to experiment with new technologies.
- » Fear of new technologies is the first barrier for teachers.
- » Lack of a clear purpose – there are good and bad reasons to include technology in the classroom.
- » Some school cultures can make it difficult for teachers to engage with the technology.

Key messages from the discussion

1. A clear vision and purpose for the use of the technology is needed.
2. Curricula need to be flexible to allow for experimentation and to integrate digital competences.
3. Pathways to integration should be left up to teachers and students to choose.
4. Find ways of providing time – for teachers, teacher educators and pupils to think and to reflect.

Possible solutions

- » Be clear why technologies should be used and when.
- » Encourage co-construction with teachers.
- » Use technology as a driver for social interactions and exchange in real life contexts.
- » Funding is needed to allow for time, partnerships, and reflection.
- » Encourage national policy reforms which provides funding to schools for digital devices and teacher training.

Practical action proposed

1. Digital education in teacher training and continuous professional development.

WORKSHOP 5

Learning spaces: thinking out of the box



This workshop looked at how Ministries and architects can inspire local policy-makers and school staff to imagine the schools of tomorrow. It sought to identify the key enablers to facilitate the development of such infrastructures. The workshop was organised around two topics.

Topic 1: Outdoor learning

1. **Ellen Beate Hansen Sandseter** commenced with a presentation on “Outdoor play and learning (with its risks) – Thinking out of the box to foster key competences”.
2. **David Landpersky** presented on “Using Nature as a forceful learning arena”.
3. **Alessandro Bortolotti** presented on an Erasmus+ project called “Go Out and Learn (GOaL) – Supporting Key Competence Development”.

Topic 2: Reorganisation of school spaces

1. **Julie Velissaratu** presented on the OECD School User survey.
2. **Christophe Caron** presented “Archiclasse”, which is based on a three-step methodology – ambition guidance, definition of digital spaces and uses and expressing the needs to start the operation.
3. **Susanne Hofmann** presented “School Vision Game – Our Perfect Learning Landscape”, which focused on the participatory architecture.

Challenges identified

- » Parents have expectations of keeping traditional approaches.
- » School buildings often have dated architecture.
- » Lack of resources and time.
- » Compliance with EU legislation about tenders slows the building process.
- » Closed minds, routines and habits.
- » Few training opportunities for teachers.

Key messages from the discussion

1. Establish a clear vision and position about allowing teachers to use more outside the box tools/methodology.
2. Enable and support teachers to take part in projects (e.g. Erasmus+).
3. Provide quality lifelong learning for teachers and school leaders.
4. Curriculum should include transversal competences and objectives.
5. Policy makers should support research and experimentation in the learning spaces area.
6. Make it possible for teachers to collaborate, be creative, be innovative, do research, be autonomous, involve stakeholders.

Possible solutions

- » Lifelong learning and training for teachers.
- » Provide positive examples and mentor systems.
- » Encourage trust in and autonomy for teachers.
- » Provide investment (money and other resources).

Practical actions proposed

1. Co-teaching in our schools.
2. Celebrate the teacher – a media campaign.
3. More school autonomy (pedagogy and space): exploring peer learning and best practices in using existing autonomy for pedagogy and space decisions.

WORKSHOP 6

Language aware schools: how languages shape learning



This workshop focussed on the concept of language awareness and its role in learning and competence development. Participants discussed what can be done to develop and implement practices in schools that will motivate the students to learn languages.

The workshop was organised around two topics.

Topic 1: The meaning of language as a language learning approach was introduced by Nell Foster and Jenni Alisaari.

Topic 2: How to initiate and monitor processes that can lead to change and create new learning approaches and environments to support language learning was introduced by Sarah Breslin and Graham Seed.

Points made during the introduction to the topics included:

- » Language can also be considered a learning environment, as we use language as a tool to learn.
- » Language should be developed at an early age, as it is fundamental for self-awareness and identity.
- » Language awareness includes that teachers should be aware of each individual learner's personal language repertoire
- » Embracing and promoting linguistic diversity contributes strongly to social inclusion, tolerance and integration and reinforces multilingual competences among all learners
- » Teachers can learn how to use the language of the learners as a resource for progressing in the language of schooling and other languages taught
- » Learning oriented assessment (LOA) should be used continuously and in combination with individual learning goals
- » The European Language Portfolio can be developed into a broader tool used for both self-assessment and tutoring to help develop literacy and multilingual competences.

Key messages from the discussion

1. Languages should be allowed to flow free.
2. In language aware schools, there are no language hierarchies
3. All teachers should be language aware and consider how to use the language of the learners as a resource.
4. Learning oriented assessment should be developed and linked to every pupil's individual language repertoire.

Practical actions proposed

1. Develop a form of portfolio which could be used to enable students to engage in self-assessment and the development of their multilingual competences.
2. Encourage debate as a way to support authenticity, language awareness, personal and social learning, citizenship, cultural awareness and expression.

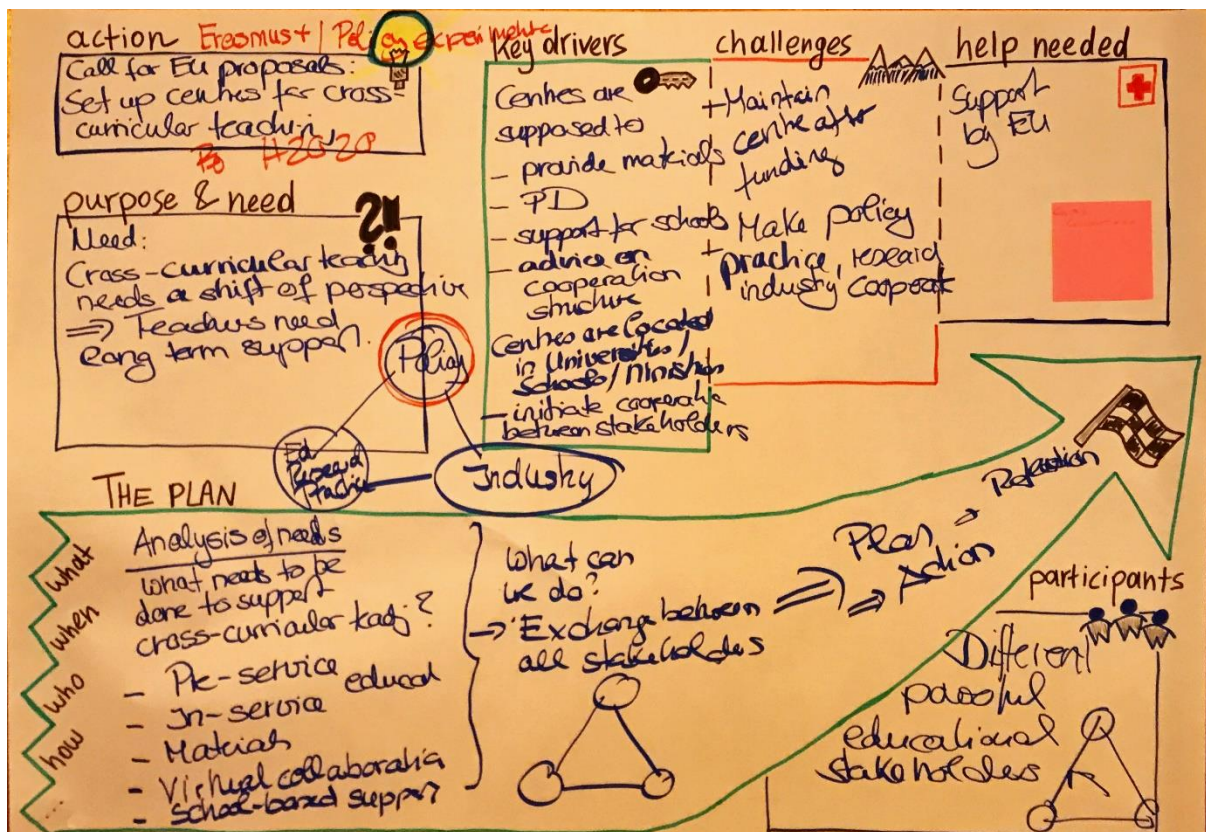
6. 'Pro Action Café': Action planning and validation of policy recommendations

The Workshop groups were invited to bring two to three proposals for concrete actions forward for further discussion, refining and validation in a Pro Action Café. Fourteen actions were proposed and discussed.

Actions proposed and discussed

1. How to support the assessment of competences – embedded in subjects.
2. Digital education in teacher training and continuous professional development.
3. Portfolio (self-assessment, tutoring) to develop language skills.
4. The power of debate: Five competences in one activity.
5. An accreditation and award system for teacher CPD.
6. Sustainable continuation through systemic change initiatives.
7. A framework for collaboration between external actors and schools.
8. Activate school actors to collaborate with external organisations to create positive impact.
9. Celebrate the teachers! – a media campaign.
10. Align formative and summative (external) assessment.
11. Implications of EU frameworks on national curricula and assessments.
12. More school autonomy.
13. Co-teaching in our schools.
14. Student-led digital learning.

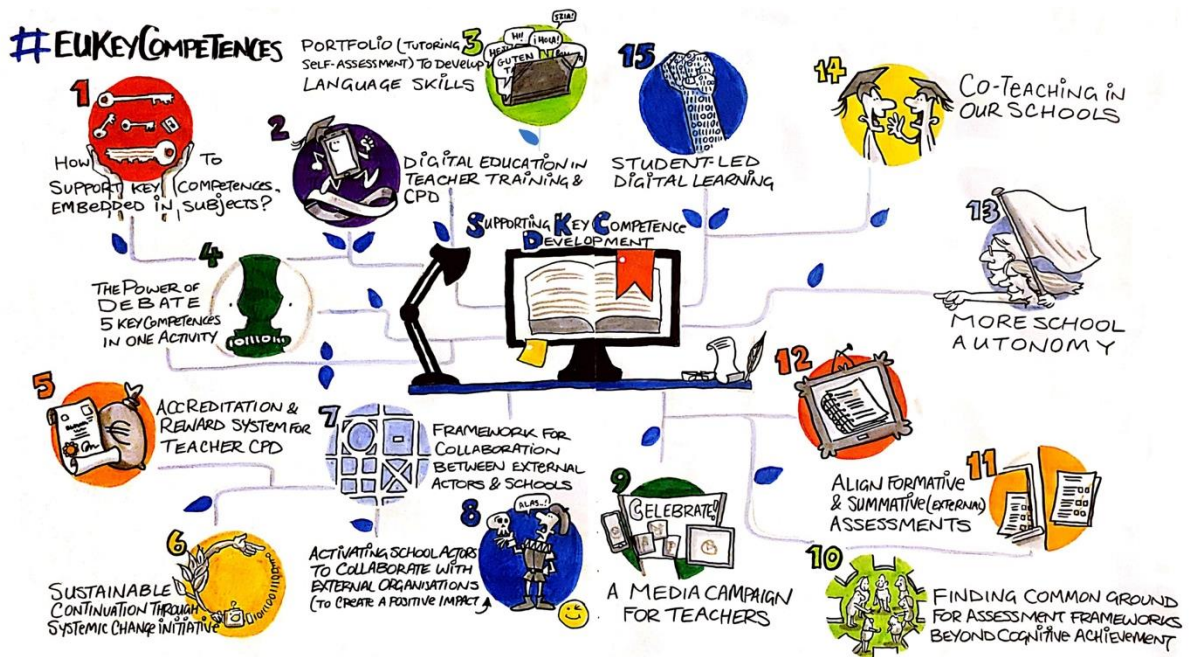
Outcomes of the discussions on future initiatives and reform were gathered from each group on *Harvest Sheets*, showing information on the action, its purpose, key drivers and challenges, help needed, an outline plan of action and interested participants. An example of a Harvest Sheet is shown below, and detailed information gathered from the Harvest Sheets is presented in Annex 3.



Sample Harvest Sheet from the Pro Action Café

Finally, other participants toured the gallery of harvest sheets and had the opportunity to offer to be involved in any of the actions that were of interest to them.

Harvest sheets were collected and circulated to the relevant participants shortly after the conference, by email. A photograph of each table's output and the names of the participants in each group and other colleagues who expressed their wish to go on working on the subject were included. Participants were invited to get in touch with each other, form agile groups, start fruitful cooperation and exercise collective responsibility for the progress. Support from the European Commission is available for peer learning activities and projects related to this area.



7. Key messages

Speakers, panellists and participants all discussed learning approaches and environments that support competence development in school education and many examples of good practice were presented in the workshops and exhibition projects.

There was strong support through the conference for encouraging a broadening of learning approaches and environments, both within schools and classrooms and through interacting with the world outside, whether that be through virtual means (Maker education, Beaconing or Online labs and virtual simulators for engineering education) or physically (Collaborating with external organisations or Outdoor learning).

In considering how policy actions, that support the development of learning approaches and environments, can be developed and implemented a number of **key messages** can be drawn from the discussions. These are:

7. Focus on system-wide developments.
8. Recognise the central role of teachers.
9. Encourage flexible approaches to curriculum and assessment.
10. Support stakeholder engagement and collaboration.
11. Develop a clear vision and purpose for the use of digital technologies.
12. Embrace and promote language diversity.

1. Focus on system-wide developments

Systemic approaches are needed to support competence development. Strategies that support key competences also support high quality education and training and excellence should be for everyone.

In the Irish Key Skills Reform changes were supported through investment in teacher professional development. Teachers were involved in the reform process from the start and were given more time to engage with new approaches by reducing their weekly class

contact time. These changes also supported teacher agency, which is crucial for innovation in teaching and learning.

Systemic change supports inclusion, improving education and training for all learners. Strategies that support key competences also support high quality education and training for everyone. Tiina Silander spoke about the curriculum reform in Finland where there is a focus on equal opportunities for all individuals and communities.

System wide changes take time and it is important to focus on whole school approaches rather than on individual teachers.

“It will take time to embed the Croatian curriculum and assessment reforms in the whole system, but to have sustainable reform we need to involve all teachers” (Lidija Kralj).

Already, existing competence frameworks for Entrepreneurship and Digital competences are very useful to help systematise the work on key competence development and assessment. The LifeComp framework for Personal, Social and Learning to learn, currently under development, was also welcomed.

The Workshop on formative feedback and student reflection found that these aspects support the development of all key competences. A framework or guidelines on formative assessment, feedback and student reflection would help to ensure a shared understanding and integration with other aspects of education such as summative assessment.

A number of the practical actions identified in the workshops call for policies and interactive system approaches to areas such as curricula, assessment or teacher professional development. For example, in the Workshop on external collaborations participants identified an action to “Develop a general framework on collaboration of schools and external actors”.

National policy reforms and funding for schools were called for to support areas such as digital infrastructure or reorganisation of school spaces. Another action calls for support for sustainability, networking and scaling up of excellent projects.

2. Recognise the central role of teachers

Teachers are central to using innovative learning approaches and creating new dynamic learning spaces that support competence development. But to do this they need lifelong learning opportunities from initial teacher education right through their careers.

Continuous professional development of teachers is key to implementing change. In Finland, professional development is focusing on peer support, research-based education, collaboration and participation in national and international research. Lifelong Learning is a necessity for teachers and school leaders as it is for everyone else. Knowledge and skills acquired during initial teacher education is a basis that should to be developed throughout life and continuous professional development should be adequately recognized.

A clear vision and position about allowing teachers to use more outside the box tools/methodology will allow teachers to use a variety of learning approaches and environments also in collaboration with parents, learners and other stakeholders. In Ireland for example, investment in teacher professional development increased and teachers are given more time to develop, collaborate and be innovative. This in turn had a positive impact on student competence development.

Teachers must have an active role in the change process, but they must also be involved from the outset and not just as end consumers. If teachers are to engage with change, policy makers need to take into account the possible increase in teachers' workload and balance between theory and practice and the 'ideal' or 'real-world'.

"To be a great teacher you have to be creative and you have to embrace technology and to promote modern ways of teaching. You have to do more and talk less." (Peter Tabichi)

Teachers need to be incentivised and recognised, and to be given time and feel trusted to explore new opportunities. The Workshop on schools cooperating with external organisations suggested that ways need to be found to encourage more teachers to

become involved. One approach suggested in the workshop on formative feedback was to share successful testimonies from other schools and teachers about what works well in new initiatives. Funding for teacher professional development and resources and recognition of professional development can incentivise teachers. One of the practical actions focused on celebrating teachers.

3. Encourage flexible approaches to curriculum and assessment

Introducing flexibility into curricula and assessment is necessary to create space and time for innovative practices and collaborations that will support key competence development.

Curricula should be made more open and flexible. Recent developments in this direction are implemented in Portugal. Systems that are too centralised often lack the flexibility to promote activities outside the formal curriculum. This is particularly important when discussing collaboration within and among schools, as well as collaboration with outside stakeholders. Curricula need to be flexible to allow for experimentation and to integrate the multitude of digital technologies thus supporting innovation.

A good example of open and flexible learning is cross-disciplinary learning. It is important to note that cross-disciplinary learning is not against subject disciplines but that it goes beyond them, making the lines between subjects more blurred. The discussion in the workshop on cross-disciplinary learning pointed to the need for a shift in mindset, encouraging flexible curricula, teacher professional development, changes to classroom design, and development of educational tools. Policy experimentation projects to help open up the curriculum should be increased.

Open and flexible curricula require open and flexible assessment. Formative assessment needs to be more integrated with other processes of education, for example, with teaching and learning and with summative assessment. A framework or guidelines on formative feedback and student reflection should be further developed as this is an important factor in the acquisition of key competences.

“The reality of schools is often the prevalence and the pressure of high-stakes examinations. We need to consider how we can assess what comes from students and not restrict the assessment to what is on a curriculum”. (Conference participant)

Flexibility and openness are equally important for physical spaces in which learning and teaching takes place. Policy makers should support research and experimentation in the architectural design and changes of learning spaces with the aim of supporting collaboration, creativity, innovation and involvement of stakeholders.

Flexibility is also required for experimentation with and integration of digital competences. Schools cite lack of time and space for teachers to experiment with new technologies as a challenge to their integration into teaching and learning. More space in curricula would help to alleviate this.

4. Support stakeholder engagement and collaboration

Key competence development is not possible without collaboration: collaboration among system stakeholders, within school communities, between schools and external organisations, among teachers and school leaders.

Collaboration with curriculum and assessment developers, teachers, parents and students is important when new approaches are being designed, developed and implemented, as referenced by Dr. Harold Hislop (Ireland), Liidja Kralj (Croatia) and Dr. Tiina Silander (Finland). This type of collaboration helps to build system capacity and provide early information to all involved. There was a welcome for supporting parents to engage with strategies and in particular for the approach taken by the Irish system where parents are supported financially and recognised legally as stakeholders in the education system.

The results of an instant survey of participants using menti.com about the most important factors for designing and implementing policies that support competence development, resulted in stakeholder engagement being voted the most important factor (38%). In curriculum reform in Ireland, stakeholder engagement and capacity building were the most important factors for success.

“You can’t assume that the actors in your change process are stakeholders unless you ensure that they have the necessary knowledge and support to participate in the process. This includes teachers, parents and students”. (Harold Hislop)

Teachers should not work in isolation, but in collaboration with each other and with school leadership. Policy support for schools to build external collaborations and to share practice should be encouraged and include stakeholders. Teacher professional development should encourage peer support, teacher collaboration and engagement, and collegial observation.

Whole school collaboration is seen as important for cross-disciplinary learning and for schools cooperating with external organisations. An example that supports whole school collaboration is SELFIE, the self-reflection tool to help schools embed digital technologies into teaching, learning and student assessment. Strategies suggested to improve cooperation include the promotion of co-creation processes to develop shared understanding and expectations; finding ways to incentivise schools and teachers to become involved; and making curricula more open and flexible. One of the practical actions focused on “A framework for collaboration between external actors and schools”

5. Develop a clear vision and purpose for the use of digital technologies

There is a need for a clear vision and purpose for the use of the digital technologies in education and training. Teachers need adequate support to use digital technologies.

Teachers are aware that there are good and bad uses of technology in the classroom and they often struggle to explain the purpose of technology in teaching and learning. Digital

technology and data it produces might be used as a driver for social interactions and exchange in real life contexts. At the same time, we need to take control of how data is used and ensure that data is created in an ethical way.

There was a welcome for the Digital Competence frameworks developed in recent years but a recognition that ethical and regulatory frameworks for technology and how it is used in education and training needs to be developed.

“We can use technology to understand how we learn and to improve ourselves and our lives, but to do this we need to educate the technology, as it does not educate itself.” (Alexandre Pachulski)

Digital technology is one of the most important tools we have today, but Cesar Bona warns: *“It is also one of the biggest dangers our children have to face”*.

Teachers and students need time to experiment with digital technologies and to reflect and decide on how to integrate them in teaching and learning in a purposeful and meaningful way. Challenges for teachers identified in workshop discussions included fear of new technologies and lack of a clear purpose for their use in teaching and learning.

Teachers and schools need help in providing clarity around why digital technologies should be used and when. If curricula and assessment are flexible and use of different learning approaches and environments is supported, then the process will be easier. Flexible curricula will also allow for experimentation and integration of digital competences. National policy reforms that support a clear vision and purpose and provide funding for digital devices and teacher professional development will help teachers and schools to overcome these challenges.

6. Embrace and promote language diversity

Language and linguistic diversity should be used as a tool and a learning resource. Such an approach contributes strongly to social inclusion, tolerance and integration and reinforces multilingual competences among all learners.

Languages were at the forefront in the workshop on Language aware schools: how languages shape learning. Language is in the heart of all learning and is equally important for the development of self-awareness and identity. This concerns both the language of schooling and other languages learned and taught. Languages should not constitute barriers to students and students' progression but should be used as a tool and a learning resource.

In language aware schools there are no language hierarchies. Teachers should be aware of each individual learner's personal language repertoire and should give students the opportunity to demonstrate competence of their own language. They should use different languages as a resource, encouraging tolerance and integration and developing multilingual competences among learners. Structured debate should be encouraged as a way to support authenticity, language awareness, personal and social learning, citizenship, cultural awareness and expression.

Learning oriented assessment can help teachers to identify students' needs, support students to set individual learning goals and track progress through a record of achievement. The European Language Portfolio can be developed into a broader tool used for both self-assessment and tutoring to help develop literacy and multilingual competences.

8. Closing remarks and next steps

In closing, **Michael Teutsch**, Head of Unit in the Directorate General for Education, Youth, Sport and Culture of the European Commission thanked the participants for their engagement and active participation over the two days of the conference. The key messages from the conference have provided useful input for the future work on key competences and have at the same time confirmed that ongoing work is on the right track.

The key competences reference framework provided in the *Council Recommendation on Key Competences for Lifelong Learning* (2018) sets out the competences that we want. The intention of this conference was to bring this reference framework to life through recommendations about learning approaches and environments, teachers and assessment. What was heard over the two days and through the excellent examples in the projects and workshops creates optimism that this is possible.

“It’s one thing to find a good school - it’s another to replicate the good practice across a country.” Michael Teutsch

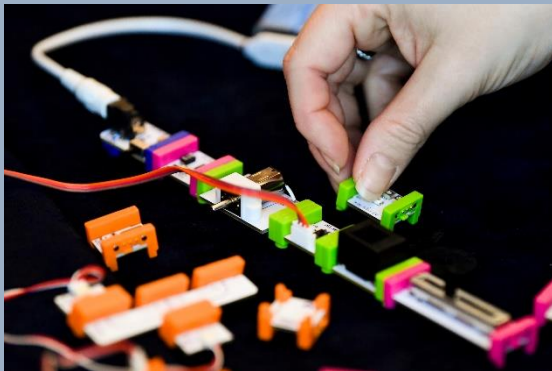
The conference has provided many examples of good practice that can be shared and transferred to other contexts. Some of these practices can operate at project level, but many will require changes to national policies and other systemic interventions. One of the key messages of the conference is that there needs to be a focus on system-wide developments.

It is clear that change has to happen collaboratively with teachers working together and with school leadership and other actors in education. Students and parents must also be involved. All stakeholders should be involved in change processes early and often. Teachers are particularly important in this process and there are many examples of how they can be supported to engage with innovative learning approaches. Change must also be inclusive, aimed at excellence for all.

Themis Christophidou, Director General for Education, Youth, Sport and Culture set the scene for the conference at the opening session when she set out her vision of a **European Education Area** that will provide as many opportunities as possible for the mobility for

students, teachers and others. We want high quality, innovative and inclusive education all across Europe. And, key competences support this vision. This conference has reiterated that message and the examples presented illustrate how learning approaches and environments that support the development of key competences also support high quality education.

Participants are encouraged to collaborate and follow up on their areas of interest developed through the Pro-Action Café groups. Support from the European Commission is available for peer learning activities and projects related to these actions.



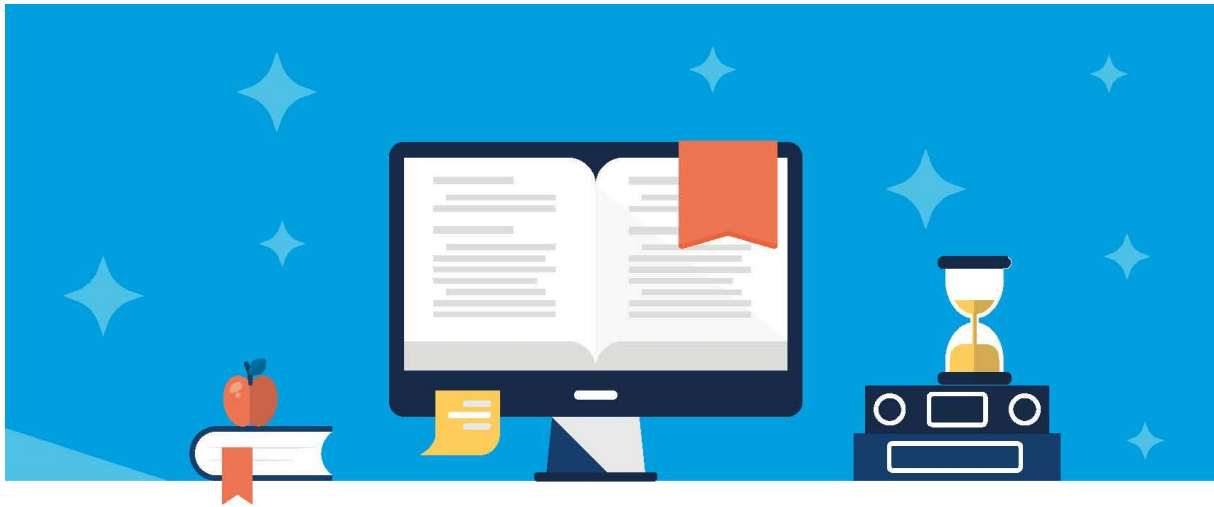
Annex 1: Conference programme



Day 1

12 November 2019

09:00 – 09:30	Arrival and registration
09:30 – 10:00	Welcome Opening speech by the European Commission, Themis Christophidou, Director General for Education, Youth, Sport and Culture
10:00 – 11:00	Competence based teaching and learning in today's world - why, what and how? – Dr. Tiina Silander, Director of the Division for General Upper Secondary Education and Teacher Education, Department for Higher Education and Science Policy and General Upper Secondary Education of the Ministry of Education, Finland – Alexandre Pachulski, Talentsoft: Talents of tomorrow
11:00 – 11:15	Project examples Quick and dynamic presentations of exhibition projects
11:15 – 11:45	Coffee break
11:45 – 12:45	Panel discussion: National educational reforms supporting key competences development in school education in Europe – Dr. Harold Hislop, Chief Inspector, Department of Education and Skills, Ireland – Lidija Kralj, Assistant Minister, Croatia – Margit Timakov, Head of Estonian Teacher Association, Estonia – Kris van den Branden, KU Leuven, Belgium
12:45 – 13:00	Project examples Quick and dynamic presentations of exhibition projects



13:00 – 14:00

Lunch break and projects exhibition

14:00 – 15:30

Parallel workshops Part I – state of play

- Whole School Approach to Learning – Schools cooperating with external organizations
- Whole School Approach to Learning – Cross-discipline learning
- Supporting key competences through formative feedback and student reflection
- Digital technologies supporting competence development
- Learning spaces: thinking out of the box
- Language aware schools: how languages shape learning

15:30 – 16:00

Coffee break

16:00 – 17:30

Parallel workshops Part II – formulating policy recommendations

- Whole School Approach to Learning – Schools cooperating with external organizations
- Whole School Approach to Learning – Cross-discipline learning
- Supporting key competences through formative feedback and student reflection
- Digital technologies supporting competence development
- Learning spaces: thinking out of the box
- Language-aware schools: how languages shape learning

17:30 – 19:00

Walking dinner and cocktail in the project exhibition area

19:00 – 20:00

**The Story: Cultural heritage cinema room of the Le Plaza hotel
(optional activity)**

Day 2

13 November 2019

09:00 – 09:15	Video message By Kenyan science teacher Peter Tabichi, winner of 2019 Global Teacher Prize
09:15 – 09:45	Key note speech Cesar Bona, teacher and author, finalist of the Global Teacher Prize 2014, Spain
09:45 – 10:30	Taking the work forward Capturing workshop outcomes and next steps
10:30 – 11:00	Coffee break
11:00 – 12:30	'Pro-action café': Action planning and validation of policy recommendations Participants interact and discuss future initiatives or ideas for reform and receive peer advice/questions for future initiatives
12:30 – 13:00	Conclusions and closing Closing speech by the European Commission, Sophia Eriksson Waterschoot, Director – Youth, Education and Erasmus+



Annex 2: Erasmus+, eTwinning and Horizon 2020 projects

Erasmus+ Projects	
Project	Weblink
CoEduLAB (CO-LAB): Collaborative Education Lab	http://colab.eun.org/
Sustainable Entrepreneurship: A Game-Based Exploration for Lower Secondary Schools	http://powerplayer.info/
Find Your Way through Art	https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2015-1-FI01-KA219-009057
Discovering Europe	https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2014-1-PL01-KA201-002907
E-reading	https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2015-1-ES01-KA104-015324
Pollution! Find a STEM solution!	https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2014-1-HR01-KA201-007149
Matters of Matter: future materials in science education	http://www.mattersofmatter.eu
Educational spaces 21. Open up!	http://www.eduspaces.eu/
(STEAM4U) Raising students' perceived self-efficacy in STEAM to provide opportunities for all	http://steam4u.eu/
Bridging the multicultural diversities in education	https://ebtmdie.wixsite.com/education-innovation
Online labs and virtual simulators for engineering education	http://simlab.roboticlab.eu
Cross-curricular teaching	https://www.ciep.fr/mobilite-internationale/expertise/projets-fonds-europeens/crosscut
STEP4SEAS: Social Transformation through Educational Policies based on Successful Educational Actions	https://www.step4seas.eu/project-outcomes
Enlarge SEAS (Schools as Learning	https://ec.europa.eu/programmes/erasmus-plus/projects/eplu-project-details/#project/2018-1-ES01-KA201-050491

Communities in Europe: Enlarging Successful Educational Actions for all)	
6th Framework Programme for Research and Innovation Project	
INCLUD-ED. Strategies for inclusion and social cohesion from education in Europe	https://www.schooleducationgateway.eu/files/esl/downloads/13_INCLUD-ED_Book_on_SEA.pdf
7th Framework Programme for Research and Innovation Projects:	
TEACH-IN: Teacher leadership for school improvement	https://www.educ.cam.ac.uk/research/projects/teachin/
Children's personal epistemologies (CHIPE)	https://www.educ.cam.ac.uk/research/projects/chipe/
e-Twinning project	
Peace Island	
IMAGINE....together for the world	https://twinspace.etwinning.net/30463/home
H2020 Projects	
Creations	http://creations-project.eu/
Stories of Tomorrow	http://www.storiesoftomorrow.eu/
Beaconing	https://beaconing.eu/
Successful projects at the national and regional level	
Integrative Learning for Teaching in school-based curriculum: Life Education and Adolescence & self-development – Romania	https://lifelearning.ro/category/formare/
PerLen: A concept for competence-oriented teaching and learning - Germany	https://www.lpm.uni-sb.de/typo3/index.php?id=6168

Annex 3: Practical actions developed through the Pro-action Café

Concrete action	Purpose and need	Key Drivers	Challenges	Help needed	The plan
1. How to support the assessment of key competences embedded in subjects	To develop relevant tool(s) for assessment Evidence and improvement measures are crucial for students' learning progress.	Relevant policy documents. Researchers. EU benchmarks, post Horizon 2020.	Lack of agreed common vision.	Practical instruments to help assessment Justification of competences Synthesis – linked to national curriculum policy	What? Comparative research/practice survey (students, parents, teachers, policy documents, tools developed and validation, role of media (TBD). When? 2020 -2022 – researchers in HEIs 2021-2022 – Think-tank with politicians and other stakeholders 2022: mixed groups, incl. students 2022-2023: teacher trainers, teacher unions, authorities. How? As above – also media.
2. Digital education in teacher training and CPD	Increase learning outcomes by using ICT.	1. Student motivation 2. Prepare students for tomorrow, to become digital citizens 3. Close the gap between students' and teachers' digital skills 4. Curriculum requirements	Time. Resources. Expenses. Changing role of the teacher mindset. Critical and ethical use of technology.	Didactical support. Technical support. Funds. Expert support in didactical methods and use of ICT.	What? In-service training of teachers to learn together with the students using digital animations. When? Immediately. Who? School networks. How? Hands on experiences and demonstrations, didactical help, peer support.
3. Portfolio (self-assessment, tutoring) to develop language skills	Flexible documentation. Linked to school agenda. Guidelines. Reflection. Forward-looking.	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">Students language skills from outside the school</div> Languages with other competences. Expectations. Motivation.	Lack of time to implement. Portfolio setup (recording and access).	Guidelines. Training. Funding.	What? Digital light-weight portfolio for languages (and more). Who? European commission with Ministries, schools, teachers, head-teachers. How? Map, develop, adapt, implement, CPD, embedded on the teaching process.

	Old ELP is too much – revamp its potential.	Student driven. Socio-cooperative approach.	Lack of resources, teacher training. Portfolio to move with the student.		
4. The power of debate: Five key competences in one activity	Support the five key competences. Students need a voice.	Independent of age, level, place, background, time and space, disability teacher skills. Self-awareness.	Not always about winner vs loser - consensus can also be important. Anxiety. To share an ethical code.	Structures for students.	<p>What? support debate in every level (formative, debate clubs, competitive).</p> <p>When? Always, when it's possible in those three levels.</p> <p>Who? Students and teachers.</p> <p>How? Encourage projects like MUN (Model United Nations) Let students have a voice.</p>
5. An accreditation and award system for teacher CPD	Teachers can accumulate units of CPD. Comparability across EU. Recognition. Accreditation. Support and encouragement. Enhance mobility of teachers. Teacher empowerment through LLL. Broaden the choice for meaningful CPD.	Providers of teacher CPD (Implementation). European Commission (as facilitator). Educational authorities (Recognition).	Compatibility with existing reward systems and EU Qualifications FW. Need for long-term participative process to attain recognition. Open accessibility (by all teachers). Existing diversity in funding and enacting CPD.	Periodic updating of framework. Need to align needs at three distinct levels: <ul style="list-style-type: none"> ▪ Policy needs at system level ▪ School needs ▪ Individual teacher needs. 	<p>What? Expert workgroup to create a draft FW for rewarding and accrediting teacher CPD. Output = draft FW. Then, Focus group feedback (teachers, school heads, CPD providers and educational authorities. Output = revised FW. Then, consultation (CPD providers, Educational authorities, policy makers). Then, open consultation – encourage all teachers to participate.</p> <p>Who? Initiator – EC. Participants – Expert researchers, representatives of CPD providers, Educational Authority reps, teachers and school heads.</p>
6. Sustainable continuation through systemic change initiatives for cross-curricular teaching	Call for EU proposals to set up centres for cross-curricular teaching. Cross-curricular teaching needs a shift of perspective.	Centres would : provide materials; provide professional development; support schools; advise on cooperation structures;	Sustaining centres after initial funding support. Connecting policy, research and practice.	Support from EU.	<p>What? Analysis of needs. Pre-service education. In-service education. Materials. Virtual collaboration. School-based support. Exchange between all stakeholders. Plan and action. Reflection.</p>

	Teachers need long-term support.	be connected to universities/schools/Ministries. Initiate cooperation between stakeholders.			
7. Framework for collaboration between external actors and schools	Systematic cooperation and not once off activities with externals. Definition of what cooperation means. Encouragement. Adaptability of the framework to different contexts. Links with curricula and competences.	Added value to the school, the community and to student learning. Co-creation between teachers and external organisations. Cooperation integrated in the educational offer. Network amongst community actors.	Bureaucracy. Time for teachers. Appropriate partnerships (criteria and ethical code). Autonomy of schools. Impact assessment.	European Commission – recommendation with guidelines adaptable to national contexts. Support to schools for strategic planning and evaluation.	What? Mapping of existing frameworks on collaboration and examples of good practice. Research evidence and impact. Address regulatory aspects, curriculum and roles of actors. Plan for strategic collaboration. Link with competences. When? Now. How? Consult and co-create: School Heads, parents, businesses, communities, policy-makers, civil society, experts. Peer learning between existing frameworks, working groups and expert groups.
8. Activate school actors to collaborate with external organisations to create positive impact.	Open up the school. Activate existing school governance structures to increase social interaction and community involvement, to support learning and to foster democratic citizenship.	Parents: external actors or within schools. Parent and student councils. Teachers groups. Youth organisations and non-formal learning providers.	Resources. Recognition. Real impact. Interface beyond school spaces.	Clear roles. Capacity building. European network.	What? School development plan to open up the process. When? Long-term strategies. Who? Need a dedicated unit with a dedicated framework and resources. How? Collective decision-making with teachers, parents, students, youth and external stakeholders.

<p>9. Celebrate the teachers – a media campaign</p>	<p>To recognise the contribution of teachers in society. To make the teaching profession attractive. To increase awareness of responsibility of the job of teaching.</p>	<p>Policy makers. Parents. Media. School heads. School administration. Learners. Teachers.</p>	<p>Shortage of teachers. Why do young people not want to become teachers? To activate press. To do marketing. Looking at teachers from a diverse perspective. Opening up new perspectives.</p>	<p>Acknowledgement. Human and financial resources. Media experts. Lobby support for the value of teachers.</p>	<p>What? Supporting top performers; redefining teaching profession; new role in education. When? Continuously; in the policy making of EU2025; teacher CPD; respect for teachers. How? Provocative campaign.</p>
<p>11. Align formative and summative (external) assessment</p>	<p>To merge formative and summative assessment and build on what teachers are already doing. Active role of students.</p>	<p>Teachers. Students and their role. Reflection and feedback culture.</p>	<p>Misuse of summative assessment (school evaluation, teachers' appraisal). Implementation, assessment culture. Media reporting on assessment. There is no clear pathway that teachers can use. Tension between accountability and autonomy.</p>	<p>Teachers preparation. Parents' awareness. Reporting. Policy and funding. Recognition of extra load on teachers.</p>	<p>What? Align formative and summative assessment. When? Now. Who? Teachers, parents, students, school leaders. Whole school approach with the support of external experts. How? Train teachers. Organise the process in steps in order to reach the final goal. Peer learning for teachers, students and parents.</p>
<p>10. Implications of EU frameworks for national curricula and assessments</p>	<p>To raise awareness in member states. To disseminate. To promote peer learning and peer feedback.</p>	<p>EU Council of Ministers. Teachers' needs.</p>	<p>Policies are not available to translate EU frameworks to national level. Misuse of Key Competence</p>	<p>Expertise in giving and receive feedback. Guidelines for implementation.</p>	<p>What? Cultural-sensitive implementation of KC frameworks – translating, modelling, and interpretation to support use at national level.</p>

	To connect European level frameworks with national frameworks.		framework for assessment of key competences.		<p>When? Timing is key. Sensitive to the rhythms of policy reform within each Member State.</p> <p>Who? At EU and national level – curriculum and assessment designers, policy makers, education stakeholders, and researchers.</p> <p>How? Investment, resources and support. National level events. Create a culture of reflection and feedback.</p>
12. More school autonomy – pedagogy and space.	Allow schools to experiment. Trigger policy changes/legislation. Leave room for flexibility. Give options and possibilities.	Promote international peer learning and knowledge sharing. Development of key competences.	Political. Resistance to change by teachers. Engaging all stakeholders (teachers, students, parents, local authorities).	NGOs to support and/or provide additional knowledge. International networks: teachers and architects. Local networks.	<p>What? Build a case. Desktop research – analysing countries’ research. Lobby EU and/or national governments. Empower and support schools to use existing autonomy. Identify barriers, e.g. assessment systems.</p> <p>When? Intellectual output - over 2-3 years. Who: Initial group – EU institutions or national governments.</p> <p>How? Framework of opportunities. Database of good practices. Visits, conferences, networking, workshops.</p>
13. Co-teaching in our schools	To facilitate cross-curricular projects and activities. To support the individualisation of the teaching-learning process. To support CLIL, modelling, peer learning, well-being.	Open-minded and pro-active teachers. Supportive head teachers. Policies.	Shortage of staff. Cross-curricular teaching. Key competences. Getting out of comfort zones. Thinking out of the box. Time.	Money. Reducing teaching hours. Time.	<p>What? Propose short term co-teaching action. Do some research into good practices. E.g. Singapore. Mentoring system in Finland.</p> <p>When? Anytime – using available resources.</p> <p>How? Teachers’ meetings. Changes in regulations.</p>

	To face challenges and share goals.				Start at small scale but policies must support to upscale. Who? Passionate teachers. Parents can support.
14. Student-led digital learning	Enable and empower students to understand concepts like AI and big data. To support the critical use digital technologies.	Ownership of initiatives. Reverse classrooms. Co-teaching. Applicability of knowledge and context. Market demand.	Time and money. Different 'languages'. Changing technology. Evaluation. Gender gap. Code of ethics. Expertise.	Funding. Purpose of initiatives. Showcasing and campaigns to industry. Career guidance.	What? Compendium of initiatives. Compendium of tools. Funding programme. Teacher training and external input. CPD. Communities of practice. Digital education action plan. Who? Teachers, companies, students, school heads.

Annex 4: Participant list

Family name	First name	Organisation	Function
Aaltonen	Kristina	DLI - Danish Teacher Trade Unions	Head of Brussels office
Aaltonen	Liina	Tammerkoski Upper Secondary School	Music teacher
Albalat Martínez	Ana	Ministry of education of Catalonia	Deputy Director Research and Digital Culture
Alisaari	Jenni	University of Turku, Finland	University teacher
Amariei	Mihaela	Proedus	Trainer
Ankon	Pavel	Ministry of science and education	Project manager
Arlavi	Daria	Permanent Representation of the Republic of Croatia to the EU	Education Counsellor
Arnab	Sylvester	Coventry University	Professor of Game Science
Arndt	Torsten Hubertus	European Commission	Senior Expert
Běťáková	Martina	Ministry of Education, Youth and Sports of the Czech Republic	Strategy and Analysis Unit
Beeke	Daan	EU Read / Stichting Lezen	Domain Specialist
Belanciuc	Iulia	The Ministry of Education, Culture and Research	Senior consultant
Benassi	Orietta	IIS cavazzi, Pavullo (IT)	Teacher
BICK	Dominik Alexander	Landesinstitut fuer Paedagogik und Medien (LPM)	Head of department
BLINDA	Diana	Scoala Ion Olteanu	Teacher
Boegaeva	Julia	Bessonova Outdoor Immersion School	Education Designer
Boffa Ballaran	Emanuela	Istituto Comprensivo Andorno Micca	Teacher

Bogner	Franz X.	University of Bayreuth	Chair
Bona	César	César Bona	Teacher
Bortolotti	Alessandro	University of Bologna	Researcher
Brabnikova	Sarka	Permanent Representation of the Czech Republic to EU	Education, youth, sport, culture, audiovisula attaché
Brasovanu	Vasile	Seeding Knowledge Foundation	Trainer
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