



STEAME GOES HYBRID: Blueprint Guidelines and Policy Recommendations

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Executive Summary

Developed by the STEAME GOES HYBRID project, these policy recommendations have these aims:

- Provision of a basis for public discourse and a foundation for strategic policy development on how to harness the hybridization in a systematic way towards the full implementation of the EU Education Area.
- Better understanding of EU and country level policy makers on the challenges and needs of schools, teachers and students, with a specific focus on digital transition and hybrid learning environments.
- Contribution to the identification of priorities and the development of regulations able to support hybrid schools.
- Creation of new strategic visions for modern school institutions at the aftermath of the pandemic and the emergency brought into the educational systems.
- Contribution to the definition of new learning spaces shaped by digital and hybrid formulas, enhancing accessibility and inclusiveness of educational provision.
- Setting of the ground for stronger EU peer learning in the context of digitalization in SE.
- Raised public awareness on the implications of digital readiness for school communities, providing evidence-based input.

The project has identified recommendations in 5 main areas:

1. Support to teachers must be continuous and multidimensional.

- **Life-long learning and continuous professional development should be feasible to all teachers.**
- **Continuous support and feedback to teachers should be provided.**
- **Teachers should be supported in collective educational experiences skills.**
- **English language basic understanding by teachers should be supported.**

2. Multidisciplinary and interdisciplinary collaboration and new assessment methods must be promoted, overcoming the old single-teacher and single-discipline paradigms.

- **The hybrid context is a multidisciplinary and interdisciplinary context, and it must be treated as such**
- **New ways of assessing the students' learning level needs to be introduced.**
- **The key role of Higher Education**

3. Strategic planning and accessibility should be regarded essential elements in the hybrid school.

- **Strategic planning of schedules and settings is a key factor in hybrid schools.**
- **Accessibility to all should be promoted as a key value and basic standard.**

4. *Motivation and commitment at different levels must be promoted and supported.*

- **School managers' motivation and commitment must be supported, also by introducing HYBRYD school certifications.**
- **Teachers' motivation must be supported to achieve the hybrid transition.**
- **Learners' motivation and participation must be supported to achieve the hybrid transition.**
- **Parents must be reassured and informed about the hybrid transition.**

5. *Transition plans to the hybrid school must be promoted, also with a view to supporting the necessary infrastructural adaptation.*

- **Standardized digital transition plans to guide school managers should be developed.**
 - **Classes – Schools – Educational System: synergy and coordination are needed.**
 - **Infrastructural renovation should be funded to put the basis for the transition to the hybrid environment.**
 - **The COVID 19 emergency represented a forced boost for the digital and hybrid transition, but it can't be its horizon. The Hybrid school is the school of the future.**
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Terms of Reference

Context/Background

Recognizing that today's education system cannot follow change and meet demands of globalized technologically driven society, it is constantly undergoing reforming education by introducing and applying innovative teaching methods, practices and tools. The educational policies of the EU states, through innovations, aim at developing and cultivating critical thinking, teamwork, knowledge building, technological literacy and basic skills that students need in order to be able to adapt to the Digital Era.

STEAME (Science, Technology, Engineering, Arts, Mathematics, Entrepreneurship) education is considered to be a driving force for preparing students for the future. The education systems need to be grasped with innovative elements to make young people more resilient, flexible and ultimately successful as they start to contribute to society. The creation of STEAME schools is an important step towards the necessary educational redesign. In 2019, the EU project "STEAME: Guidelines for Developing and Implementing STEAME Schools" was funded. Emerging Education systems that want to develop STEAME schools or related learning activities need a model, activity guidelines or prototypes. These so-called Learning & Creativity Plans have been published on the website www.steame.eu under the STEAME Observatory.

Furthermore, the new Challenge for education, for teachers, for students and education authorities is to be able to implement STEAME Learning activities in a Hybrid format, that is to incorporate physical, online and distance learning in a blended (hybrid) process. Teachers need to use and adapt to new technologies and environments that will allow them to support inquiry based and project activity with students. For this purpose, it is crucial upskilling teachers and providing them with the latest technological solutions to run such hybrid activities. A preliminary step to start this process is that authorities and policy makers are informed on the ideal blueprint environment needed in future schools for STEAME learning environment. A second project, ended in October 2020 named L-Cloud (www.L-Cloud.eu) has developed a MOOC course and Certification to support school teachers in becoming “Adaptable Cloud Education Leaders”.

The project

In this context, the STEAME GOES HYBRID project was planned and implemented. It intended to adapt the previous Certification Programme in producing a Hybrid STEAME Certification Programme.

Teaching and learning online and at distance using digital tools during the 2020 pandemic has been an easy transfer for many teachers and students and most Educational Systems in Europe were able to adapt to some extent. However, many innovative elements are still new to most Educational systems in the EU: working on projects with inquiry based activities like the STEAME Learning Activities; students working in groups and at distance; two or more teachers cooperating on developing and implementing STEAME Learning & Creativity Plans; the need for online or blended support of groups of students by more than one teacher at the same time; the need for interactive online monitoring of student groups; the need for student assessment through online learning; the need of supporting the special needs students; etc.

The target groups of the project were students of Grades 7-12 and their teachers. Secondary target groups include the teachers’ trainers, HE professors in Pedagogy and educational technology, decision makers and education authorities.

In summary, the main objectives of the STEAME goes HYBRID project were to:

- Create hybrid STEAME teaching and learning methods through innovative and technological approaches.
- Provide a digital environment solution with options adapted to existing infrastructures and options for future blueprint solutions that support the hybrid method.
- Engage teachers & students in STEAME activities in online and distance environment with blended learning methods.
- Increase the level of knowledge in digital technologies & communication.
- Provide quality virtual hands-on learning opportunities for students working in groups online.

- Promote cloud computing and new technologies.
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Methodology

These policy recommendations were developed by drawing information from 2 sources:

Blueprint Guidelines for Hybrid STEAME activities, focusing on investigating a set of existing competence frameworks (e.g. DigiComp2.1, Intel's, UNESCO's and Microsoft's frameworks and District 64) and explore the features that can add value to the STEAME context, when introduced, digitally and from distance, to students with the help of focus groups of professionals.

- Investigation of existing competence frameworks
- Investigation of cloud tools to empower a STEAME hybrid activity
- STEAME activity structure and Hybrid L&C plan template
- Development of the Blueprint Guidelines

In detail, the project beneficiaries were involved by:

- 4 Focus Groups with education experts (18 participants) to investigate and analyze the existing competence frameworks and point out a set of competences that will empower teachers to implement the hybrid STEAME approach.
- 4 Focus Groups with teachers were implemented (24 participants) to investigate the availability of teachers' involvement in project-based online and offline STEAME activities, their understanding of an integrated hybrid approach; focus groups designed to point out a list of appropriate set of tools that can assist teachers to facilitate the hybrid STEAME activities they will want to develop.

Policy recommendations development.

A first version of this document was drafted by the European Digital Learning Network ETSand reviewed by the project partners. Subsequently, a consultation phase was implemented, involving relevant stakeholders in the school sector. Their feedback has been collected and included in the final version of this document.

EU priorities in the field of Digital Education (focus on Hybrid education)

To understand what the current EU policies approach on the "hybrid revolution" in school and education, we need to refer to 3 main documents:

- The [COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on achieving the European Education Area by 2025](#);
- The [DIGITAL EDUCATION ACTION PLAN 2021-2027](#);
- The [COUNCIL RESOLUTION ON A STRATEGIC FRAMEWORK FOR EUROPEAN COOPERATION IN EDUCATION AND TRAINING TOWARDS THE EUROPEAN EDUCATION AREA AND BEYOND \(2021-2030\)](#).

The **COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on achieving the European Education Area by 2025** clarifies that the efforts of the commission for the five-year period will be focused on 6 main areas:

1. Quality
2. Inclusion and Gender equality
3. Green and digital transition
4. Teachers and Trainers
5. Higher education
6. Geopolitical dimension

In line with what is proposed by the STEAME goes HYBRID project, the COMMUNICATION states that:

“Education and training at all levels should equip people with the digital skills, but also other competences, such as entrepreneurship and learning to learn, which are needed to navigate in the labour market transformed by technological change.”¹

However, no specific mention is made of hybrid contexts.

The **Digital Education Action Plan (2021-2027)** mentions hybrid contexts only marginally:

“According to respondents, digital technology should be integrated into the education and training system based on a consistent set of quality standards and guidelines, ensuring an appropriate mix of digital and face-to-face learning experiences. While they considered face-to-

¹ European Commission, 2020. *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on achieving the European Education Area by 2025*. p.9.

face interaction as vital, many respondents expect the crisis to accelerate the shift to blended or hybrid education and training.”²

“Effective digital capacity planning and development is vital for education and training systems. This requires the development and ongoing review and updating of digital strategies addressing technology gaps in infrastructure, devices and developing relevant organizational capabilities in education, including the capacity to deliver hybrid modes of learning and teaching (remote and on-site).”³

In the **COUNCIL RESOLUTION ON A STRATEGIC FRAMEWORK FOR EUROPEAN COOPERATION IN EDUCATION AND TRAINING TOWARDS THE EUROPEAN EDUCATION AREA AND BEYOND (2021-2030)**, although the issue of digitization is widely taken into consideration, no mention is made of hybrid contexts.

In conclusion, it is clear that a specific policy framework has not been developed yet at the EU level to cover and guide the innovation process represented by hybrid teaching and learning and to monitor the effects that this will have on education systems in the EU.

The lack of dedicated policies is one of the main reasons behind the efforts that STEAME goes HYBRID project has put in developing this document.

Policy recommendations implemented by the STEAME goes HYBRID Project

The project has identified recommendations in 5 main areas:

1. Support to teachers must be continuous and multidimensional.

Life-long learning and continuous professional development should be feasible to all teachers.

The importance of continuous learning has been stressed several times in many policy documents. At the same time, teachers often find it impossible to develop professionally by following new courses because they do not have the time to do so. To support the feasibility and

² European Commission, 2020. *DIGITAL EDUCATION ACTION PLAN 2021-2027*, European Commission. p.7.

³ European Commission, 2020. *DIGITAL EDUCATION ACTION PLAN 2021-2027*, European Commission. p.10.

effectiveness of those courses, teachers should be guaranteed the necessary time and resources. Otherwise, the concept of life-long learning will only remain on paper but will not have a real impact on the education system in Europe.⁴

Continuous support and feedback to teachers should be provided.

Teachers, even when they have the digital skills necessary to use the digital tools made available to them, need guidance and feedback on how to apply project-based learning in a hybrid environment. Teachers should receive continuous support in implementing the hybrid STEAME approach.⁵ Also, promotion of hybrid teaching and learning among teachers and students should be fostered and both should be allowed to test hybrid learning environments before adopting them. Teachers should also be supported in terms of teaching methodologies and learning design. Research needs to be conducted to establish a grounding methodology and good practices should be made available to teachers to support them in their everyday practice.

Teachers should be supported in collective educational experiences skills.

Very often, in the context of hybrid education as in the traditional one, the focus of the intervention is targeted at the single student. The collective component of the learning experience is not given sufficient importance. The focus on individual learning / teaching does not take into account the group dynamics which instead strongly influence the students' approach, their attention span, their performance, etc. For this reason, teachers' competences should be supported in the direction of giving them the methods and tools to know, guide and make the best use of the collective dynamics of hybrid settings. In general, the hybrid learning approach should be seen as a new teaching and learning method rather than an ad hoc solution to a crisis situation.

English language basic understanding by teachers should be supported.

A large part of the teachers in the EU do not speak English. At the same time, a large part of the resources available to them to hybridize their settings and their teaching methods (digital tools, methodologies, training, etc.) are in English. For this reason, training on basic English should be included in the continuous professional development of teachers. This way, the exploitation of

⁴ In line with European Council, 2021. *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) - Strategic priority 2: Making lifelong learning and mobility a reality for all*. European Council, p.11.

⁵ In line with European Commission, 2020. *DIGITAL EDUCATION ACTION PLAN 2021-2027- 4.1 Strategic priority 1: Fostering the development of a high-performing digital education ecosystem, Digital education content and training in digital skills – including digital teaching methods – will be essential for staff*, European Commission. p.10.

resources already available - but very often not sufficiently widespread due to language barriers - would be maximized. This may also facilitate their internationalization and networking cooperation.

2. Multidisciplinary and interdisciplinary collaboration and new assessment methods must be promoted, overcoming the old single-teacher and single-discipline paradigms.

The hybrid context is a multidisciplinary and interdisciplinary context, and it must be treated as such.

The adaptation of educational content to hybrid contexts requires time and, above all, technical skills that very often are not mastered by teachers. For example, the digitization of content, the preparation of online platforms, the solution of technical (IT) problems, etc. In this sense, the hybrid approach requires a multi-disciplinary contribution that sees, among others, the participation of teachers, IT technicians, experts in online education, etc. At the same time, students also need dedicated staff who know how to follow them in the transition to hybrid education. Moreover, project-based learning requires the involvement of teachers of different disciplines and areas, who know how to overcome the old single-discipline paradigm. Furthermore, the co-presence of teachers of different disciplines, potentially from different schools, requires adequate time dedicated to plan and co-create activities. For this reason, the creation of multidisciplinary teams should be supported and become structural, in order to supplement, by complementing them, the shortcomings of the individual teaching methods.

New ways of assessing the students' learning level needs to be introduced

Evaluating students based on individual exams is a paradigm that needs to change. The hybrid approach is, as mentioned, multidisciplinary, linked to motivation, often collective. Therefore, this type of assessment no longer makes sense and should instead be replaced by a more comprehensive assessment of the student's portfolio. For this reason, it is essential that teachers - and the school system in general - are supported in the identification of new assessment methods, more suitable for hybrid settings.

The key role of Higher Education

As responsible for the training of future teachers, higher education institutes play a key role in the digital transition of the education system. For this reason, it is essential that higher education

supports problem-based learning, by placing it alongside more conventional approaches. Future teachers' training should focus above all on practice and less on theory, especially when it comes to preparation for hybrid contexts. In particular, school-university partnership should be promoted to:

- Develop community of practices among pre-service and in service teachers;
- Provide a framework for teachers in school during the practicum (with a focus on Steame Education);
- Establish a monitoring/assessment mechanism for these partnerships.

3. Strategic planning and accessibility should be regarded essential elements in the hybrid school.

Strategic planning of schedules and settings is a key factor in hybrid schools.

The need to involve a multidisciplinary team and to have a setting that positively considers and uses the collective dynamics necessarily require a change in schools' schedule. It is necessary that teachers on the one hand and students on the other have the possibility to adapt their schedules in a flexible way, according to the needs of the specific project. At the same time, the class environment must be rethought and adapted according to the needs of the project. The physical and virtual space must be compatible; they must communicate in a way that is functional to teaching. For this reason, it is necessary to reform the monolithic and outdated approach which sets, a priori, pre-established times and spaces for teaching.

Accessibility to all should be promoted as a key value and basic standard.

All educational contexts must also be accessible to people with special needs, including people with disabilities. Utmost attention should be paid to this aspect even in hybrid education. For this reason, minimum accessibility criteria should be produced and promoted through specific guidelines and regulations. Dedicated support should be given to make both physical and digital spaces accessible, only in this way can hybrid education be truly accessible to all. ⁶

⁶ In line with European Commission, 2020. *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE*

4. Motivation and commitment at different levels must be promoted and supported

School managers' motivation and commitment must be supported, also by introducing HYBRID school certifications.

The transition to hybrid teaching can't do without the motivation of individual school managers and individual schools. This aspect must be considered as important as economic resources. Without one of the two elements, the transition to the hybrid cannot take place. For this reason, it is important to create labels, standardized and internationally recognized, which certify the level reached by the individual school in the transition and / or the explicit commitment that the same has signed with respect to the persecution of specific objectives towards the transition. In this way, the school that undertakes to invest its resources in the transition would receive feedback in terms of visibility and an evident improvement in the quality of its offer. In turn, this would enhance the economic sustainability of the school itself.

Teachers' motivation must be supported to achieve the hybrid transition.

The motivation of teachers and their adherence to the hybrid transition plans of schools is another key element. It must be taken into account that often the widespread tendency among teachers is to oppose the change in teaching plans and the introduction of new tools. Sometimes, the introduction of novelties is seen as a strong demand for time and resources in the face of poor results. For this reason, teachers' commitment should be encouraged. Teachers must receive the necessary support and dedicated coaching to help them understand purposes and objectives of the innovations introduced. "Hybrid transition coaches" could be appointed within schools to provide information and tutoring to teachers who need it, to reduce anxiety about change.⁷ To a certain extent, also financial incentives could support teachers' commitment.

REGIONS on achieving the European Education Area by 2025 - 3.2 Making education and training more inclusive and gender sensitive. European Commission, p.14.

In line with European Commission, 2020. *DIGITAL EDUCATION ACTION PLAN 2021-2027 - 4.1 Strategic priority 1: Fostering the development of a high-performing digital education ecosystem.* European Commission. p.10

In line with European Council, 2021. *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) - Strategic priority 1: Improving quality, equity, inclusion and success for all in education and training.* European Council, p.9.

⁷ In line with profession European Commission, 2020. *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS on achieving the European Education Area by 2025 - 3.4 Enhancing competence and motivation in the education.* p.18.

Learners' motivation and participation must be supported to achieve the hybrid transition.

Interdisciplinary approaches, collective teaching contexts and hybrid environments can potentially represent elements that increase the distance between the learners and their teachers, their peers, the training contents. In the same way, however, they can represent an unmissable opportunity to shorten these distances. It is therefore essential not to leave anyone behind. For this reason, the individualization of educational programs, the identification of training courses with adaptable objectives, the support to the co-creation and peer support among students must be stimulated and included in the educational plans themselves.⁸

Parents must be reassured and informed about the hybrid transition.

Parents play a crucial role in the upbringing of their children. They need to be informed about the changes brought about by hybrid settings, reassured about the potential risks and informed about the possible benefits. Communication with parents must be maintained and they should be accompanied step by step. Parents involvement should aim at two objectives. Provide parents with information on the use of hybrid environments in school activities and allow them to play a more active role in guiding their children when they are home.

Hybrid ambassadors, trained in the use of hybrid settings and in training and supporting other stakeholders, should be involved. These ambassadors could be the focal point for supporting school leaders, teachers, students and parents.

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5. Transition plans to the hybrid school must be promoted, also with a view to supporting the necessary infrastructural adaptation.

Standardized digital transition plans to guide school managers should be developed.

The adoption of digital transformation plans that take into account the infrastructural transition should be promoted in all schools at the EU level. At the same time, it is important that these plans are relatively standardized and shared, in order to provide school managers with concrete guides to refer to and practical tools to put in place. This way, a concrete response to the technical requirements of schools could be more easily planned and concretely implemented.

Classes – Schools – Educational System: synergy and coordination are needed.

⁸ A good practice on this is represented by the [STEAME STUDENTS project](#).

The efforts of the single school should be aligned with a common transition framework, planned, monitored and verified at the higher level. The introduction of hybrid contexts will have / is having a strong impact on the educational system and can't be faced in a fragmented and disjointed way. Policy makers and regulations should provide strong coordination, shared protocols, discussion tables in which schools can discuss with their peers and with regional or ministerial stakeholders. Sinergy among classes and schools is often difficult to achieve because of the phenomenon of "class isolation". This has to be considered and tackled (e.g. by putting in place local communities of practice) to transfer knowledge and practices. Furthermore, the national curricula programs should allow and promote the use of hybrid learning.

Infrastructural renovation should be funded to put the basis for the transition to the hybrid environment.

Hybrid education cannot ignore some fundamental basic conditions. Stable internet connections, electronic devices, fully equipped classrooms/laboratories, digitalized learning material and other minimum requirements are essential elements, without which hybrid education is not possible. Nevertheless, especially in rural contexts, these are often absent or insufficient. Also, licensed platform and tools are often inaccessible to schools with a low budget. For this reason, sufficient economic resources should be made available to guarantee the minimum infrastructural levels on which to build the hybrid school of the future.⁹ Schools should be provided with funding guidance, links/sources/funding organizations contacts both at national and EU level.

The COVID 19 emergency represented a forced boost for the digital and hybrid transition, but it can't be its horizon. The Hybrid school is the school of the future.

The COVID 19 emergency has forced many schools to accelerate the digitization and hybridization of their activities in an unexpected and abrupt way. In order not to waste the efforts made by schools, teachers, students and institutions in this period, it is necessary to ensure that this leap forward becomes structural. That is, we need to get out of the emergency perspective and enter into that of planning.

⁹ In line with European Council, 2021. *Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) - Strategic priority 5: Supporting the green and digital transitions in and through education and training*. European Council, p.16.