

## Teacher competences for parental engagement in STEM in secondary schools

### *Position of the European Parents' Association on policy envisions & requirement for STEM teachers' competence development in Greece, the Netherlands, Bulgaria & Spain in reaction to the state-of-affairs reports*

*"Measures and support structures (ideally available at local levels) should be in place to facilitate the **lifelong career development** of teachers. Initial teacher education and continuous professional development with a focus on drop-out prevention should help teachers practice differentiation and active learning. It should prepare them to effectively use **competence oriented teaching and formative assessment**, and to apply more project-based and cooperative teaching and learning. It should **reinforce** relational and **communication expertise** (including techniques/methods **to engage with parents** and external partners), and provide teachers with classroom management strategies, diversity management strategies, relationship building, conflict resolution and bullying prevention techniques."*

(EC 2016, A Whole School Approach to tackling early school leaving Policy Messages p. 14)

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### Setting the scene

Official EU policy has recognised the importance of engaging parents and learners in all aspects of education since the early 2010's. A need to assess and improve teachers' collaboration and negotiation skills has also been identified as an important development field to transform European education systems to meet the needs of 21<sup>st</sup> century learners, and thus also help to achieve the EU2020 headline target of reducing early school leaving. The aim of the document to complement the analysis of four national contexts from the perspective of parents, to provide ground for discussion and reflection among STEM education stakeholders on how to improve teacher training and competence development – both pre- and in-service.

### Recognition of parents as primary educators

Legally<sup>1</sup> and de facto parents are the primary – first, but also most impacting at all ages - educators of their children. In teacher trainings, this is not used as a starting point, parents are often shown and thus seen as a burden, an extra task. Innovative approaches must include this as a starting point, empower teachers in innovative training for parental engagement and cooperation. Necessary methodology is to be offered to teachers to empower parents.

### Parental engagement & teacher training: prominent issues for consideration

- teacher training does not aim at understanding that parental engagement is an

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<sup>1</sup> according to the [UN Convention on the Rights of the Child](#)

obligation for both the school and the parent, and does not offer methodology to make parents also understand this – parents staying away and not ‘interfering’ are still considered a positive role model, while they it is a legal obligation of the parent to be involved in designing elements of the right educational pathway for their children

- teachers in Europe confront difficulties in making parents understand the need for innovation – although parents want the best for their children, the vast majority of them has no other reference point than their own schooling and experiences, but they bring real life and realistic future needs to the school that could be used as a basis
- teacher training does not consider co-designing curricula building on personal experiences and professional knowledge of parents
- teacher training does not offer methodology to support STEM-at-home

## The role of parents in teacher training

It is still seen as unusual, happens very rarely that parents or parents’ associations are invited to offer part of training for teachers, and co-training of teachers and parents is also nearly unheard of. This should be considered as a necessary element, to include the parents’ associations’ experiences and expectations on cooperation.

## Make transitions smooth - cooperate with ECEC<sup>2</sup> and primary

In most European countries, the transition between different levels of education is not smooth enough, with STEM becoming more and more theoretical with age. At the same time cooperation of secondary school teachers and parents should also aim at ensuring a solid STEM basis, totally linked to the everyday experiences of children. Thus, innovative teacher training of secondary teachers should include the element of reaching out to ECEC and primary, with the assistance of parents.

## Make transitions smooth – have knowledge about and cooperate with tertiary education

The content of STEM curricula is a very delicate one. When designing local and individualised curricula, teachers should be able to make the right choices to include knowledge for everyday life, but also to prepare students for their respective career pathways, not teaching tertiary curricular content in secondary.

## Gender

Early childhood links are crucial also for balancing the gender bias happening early. Secondary teachers’ training should include elements that help parents in avoiding gender bias with their younger children and also to help other parents in it.

## Need to change general public opinion

For strengthening a balanced approach to STEM there is a need to change general public opinion and bias towards arts subjects (that considers it ‘normal’ that somebody is bad at maths, not interested in chemistry, etc.). Innovative teaching methodologies and media (including social) presence have led to changes of general attitudes. Innovative methodologies for this should include real life connections, a holistic approach to STEM, to decrease subject segregation (and to stop it in primary) and to put emphasis on soft skills necessary for lifelong learning and future life-success (as an employee, a citizen and in private life)

## Use of digital technology

When using digital technologies in training and also in STEM teaching, the digital divide should be considered. Internet penetration and the use of smartphones, tablets, etc. is different in different countries. Digital technology is a great asset in STEM, so teachers should be prepared for exploring individual access of students, and also to encourage the use of public offer (libraries, internet centres,

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<sup>2</sup> ECEC = early childhood education and care

school access). Digital technology use at home and at school can help make the real-life connection as well as increase attractiveness. Teachers awareness levels are to be raised of resources, teacher communities on the internet, but they should also be able to use digital technologies for parental engagement in a way comfortable for everyone – taking into consideration parents' schedules, but without too much intrusion into their private lives.

## Ensuring the children's voice

In most cases, it falls on parents to ensure that they are given a real voice and decision-making power with regards to their own personal learning pathways as well as the STEM offer of the school. Child rights, the best interest of the child and their impact on school life is often missing from training.

**A key to ensuring education reform for a 21<sup>st</sup> century education we need to put the learner in focus and offer learning pathways individualised enough to be relevant and attractive for each and all. This is crucial in education in general, but even more so in STEM education, an area still not held at high enough esteem by many, but an absolute necessity in present and future labour markets. This needs a collaboration of all stakeholders, but especially students, parents and teachers, and must be based on new approaches to training, empowerment and teaching. In this document, reflecting on the state of play in four very different European countries and feedback from parents, the aim was so draft an ideal scenario and highlight areas to tackle in training of STEM teachers, most of them not traditional, subject-specific areas, and to offer a starting point for training development.**