The STEM Studio Collaborative Framework

**Collaboration across higher education, high school systems and industry partners in a ‘third space’**

To enhance the quality of pre-service teacher education in secondary science and mathematics.

**All participants**
Collaborate in the development of STEM learning activities that use problem-based approaches of inquiry and “teach science more like it is practiced.”

**Teacher Educators**
Assist PSTs in connecting theory with practice, and combining content with pedagogical knowledge.

Relate curriculum to practice and practice to curriculum in teacher education practice.

**Pre-Service Teachers**
Take the lead in delivering lessons to the class, including classroom management and resource allocation.

Use support networks to develop teaching practice, identity and confidence in the classroom.

Work with STEM Experts, IST, & Teacher Educator to explore approaches to teaching STEM and “teach science more like it is practiced”.

Self-reflect on teaching practice.

**In-Service Teachers**
Provide support to PST’s in planning & delivery of lessons.

Help PSTs connect theory to authentic classroom practice.

Provide mentorship in relation to school learning environment & different needs of students.

**STEM Experts**
Provide the perspective of a scientist and scientific approach to problem solving.

Help PSTs to “teach science more like it is practiced” through real-world examples and industry practice.

Participate in key lessons to answer student’s questions, relate to real world examples & encourage scientific thinking.

**Pre-service Teachers, Teacher Educators and STEM Experts**, provide support & constructive feedback on lesson design & delivery.

**Outcomes**

- Collaboration across systems to enhance quality of initial teacher education in secondary Science & Mathematics
- Community of learning that encourages each participant to rethink pedagogical practice, discourse, and assumptions.
- A space to explore innovative teaching approaches, to adapt to changes in students, society and our environments
- Further develop professional knowledge, professional practice and professional engagement
- Foster science and mathematics as a way of thinking and practice

The STEM Studio Collaborative framework was created by STEM Studio team at QUT, published under a Creative Commons Attribution Licence.

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www.stepup.edu.au/model-approaches/stem-studio