Getting STEAMed up? Focusing research for creative pedagogies in, and across, the arts and sciences.

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This session seeks to:

a. flip the seminar room, and prioritise face-to-face (verbal and non-verbal) discussion
b. consider social scientific ideas through the medium of arts-informed practices
c. provide space for co-inspiration between participants to inform future collaborative work

Utilising a range of arts-inspired activities under the umbrella of a ‘world cafe’ approach, the facilitators will enable a journey to explore the issues raised by a range of projects seeking to promote learning in, and across, the arts and sciences. The facilitators, a mix of science educators, arts educators and informal educators are experienced in working with children, teachers and youth workers on this type of quest.

Current interpretations of how learning happens draw increasingly upon constructivist, interactive and situated pedagogical models. Creative and arts-based approaches have been advanced for their ability to generate imaginative, interactive, and situated learning opportunities which engage learners and demand holistic and interdisciplinary thinking. An international focus on the need for more STEM (science, technology, engineering and mathematics) expertise has promoted interest in ‘STEAM’: ‘that art subjects should be added to the STEM subjects ... changing STEM to STEAM’ (Culture, Media Sport, Committee, 2013).

Research into the value and impact of the arts or creative approaches in education to date is limited and in need of attention (Winner, Goldstein and Vincent-Lancrin 2013). However, a number of limited, if high profile, projects have been funded to conduct, and evaluate creative, more holistic pedagogical approaches to teaching across the arts and sciences.

Whilst the session itself will be ‘stand alone’, it is supported by a brief, curated, online collection of resources about the projects and the process of the session itself. Delegates are invited to contribute to the curation of research questions before the conference at https://steamedagogies.wordpress.com. and on twitter STEAMedUp @steamedagogies. The site will remain live until December to allow follow up.

The facilitators will draw on their own experiences and interests connected to three research projects: CREAT-IT, Creativity in Science and the Imagineerium:

Facilitator 1, an arts educator, draws upon the UK based Imagineerium initiative (arts and engineering based), to consider the role of arts-based, situated learning in developing a dialogic mode of learning between the arts and sciences and the habit of creative thinking.

Facilitator 2, an arts educator, draws upon the use of the arts, with a particular focus on movement, in the international CREAT-IT project to foster understanding of scientific concepts and will discuss the significance of embodied learning in the arts and sciences.
Facilitators 3 and 4, science educators, will focus upon the challenge of developing scientific learning in ways that are experiential, practical and reflexive and foster holistic understanding. They will draw upon the findings of a UK/Argentinian Creativity in Science Education project.

Facilitator 5, an experienced community development worker, will take responsibility for managing the process, and maintaining a critical focus.

The session will invite delegates to explore issues such as

- in what ways are the science and arts ‘ways of seeing’ useful to educators and learners?
- how do we best enable the efficacy and felt value of embodied and experiential learning?
- how can the integrity of the arts be developed in cross-curricular pedagogical applications?
- what are the strongest arguments for connected arts and science pedagogies?
- what opportunities and challenges might be generated by a curriculum based around commissions (developed with the commercial sector) which require hybrid scientific and artistic expertise?

References

CMCS Third Report (2103). ‘Supporting the creative economy’ 6:117. TSO