21st Century Skills for Young Learners and Students in UK

How to encourage Creativity and Imagination through school education

Anna Salaman

ArtScience Museum at Marina Bay Sands

Presentation content

- Definitions of creativity
- 'Divergent thinking and interdisciplinary thinking'
- Examples of creative learning in educational settings
- Barriers to creativity
- 'Portals' to creativity: Policies, People, and the External Environment.

Definitions of Creativity

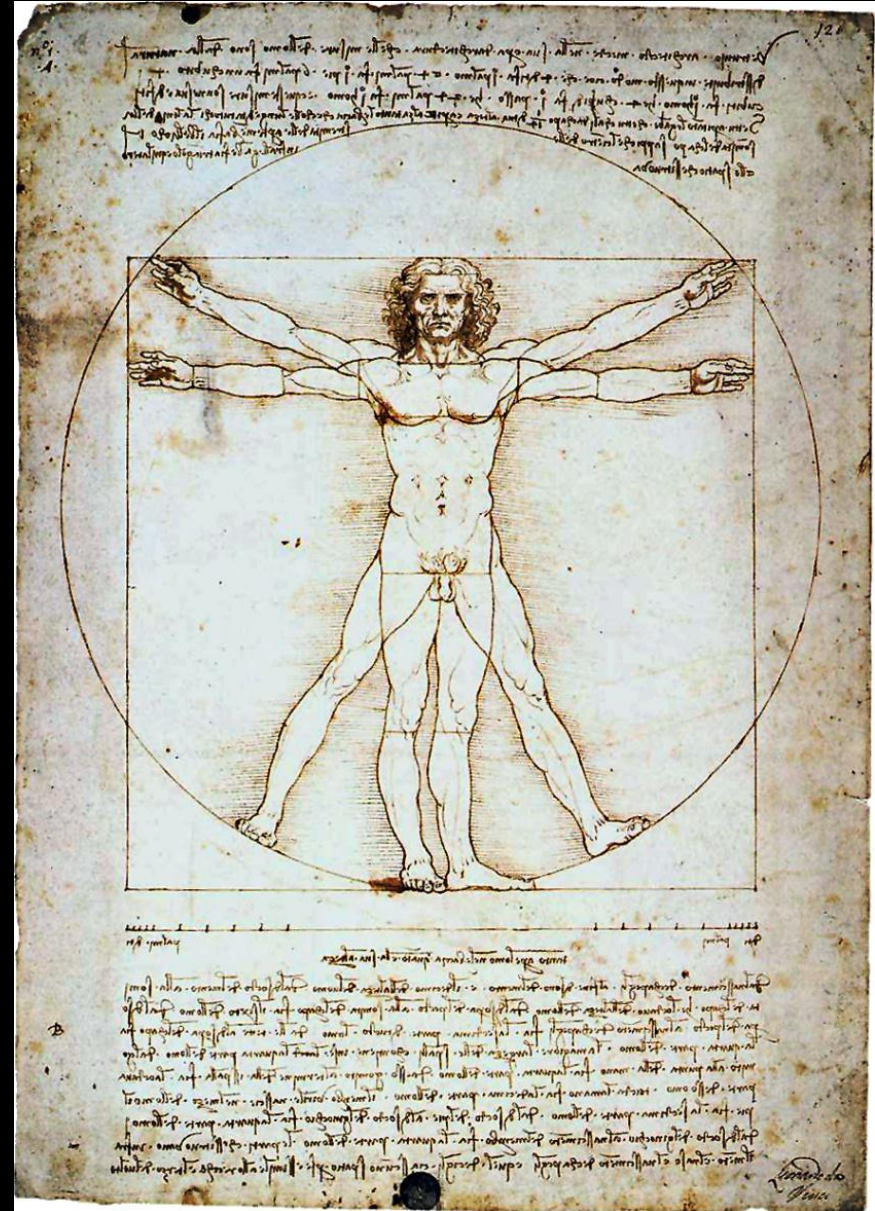'I see creativity as the process of having original ideas that have value.'

Sir Ken Robinson
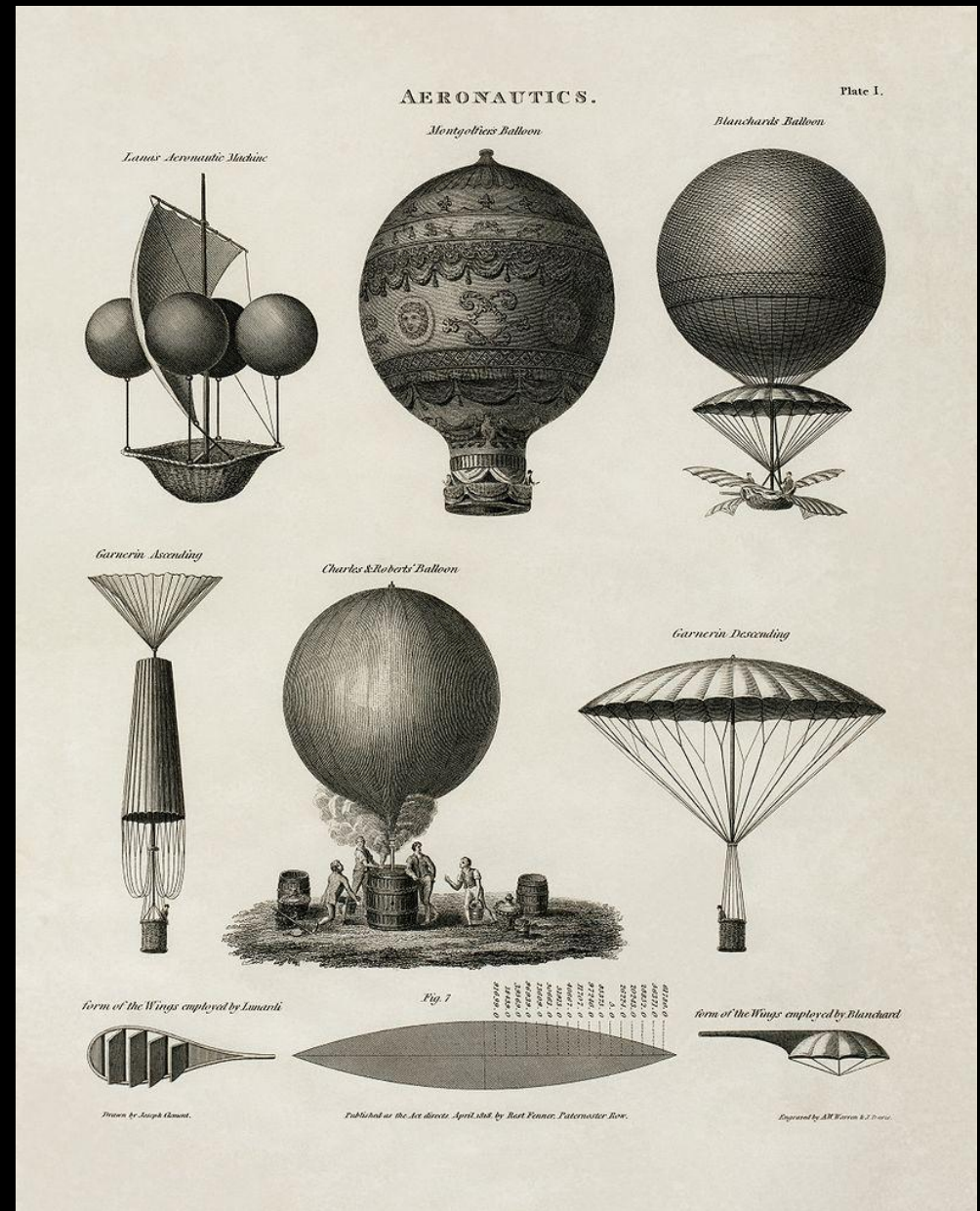
Definitions of Creativity

'Creativity is generating new ideas and concepts, or making connections between ideas where none previously existed.'
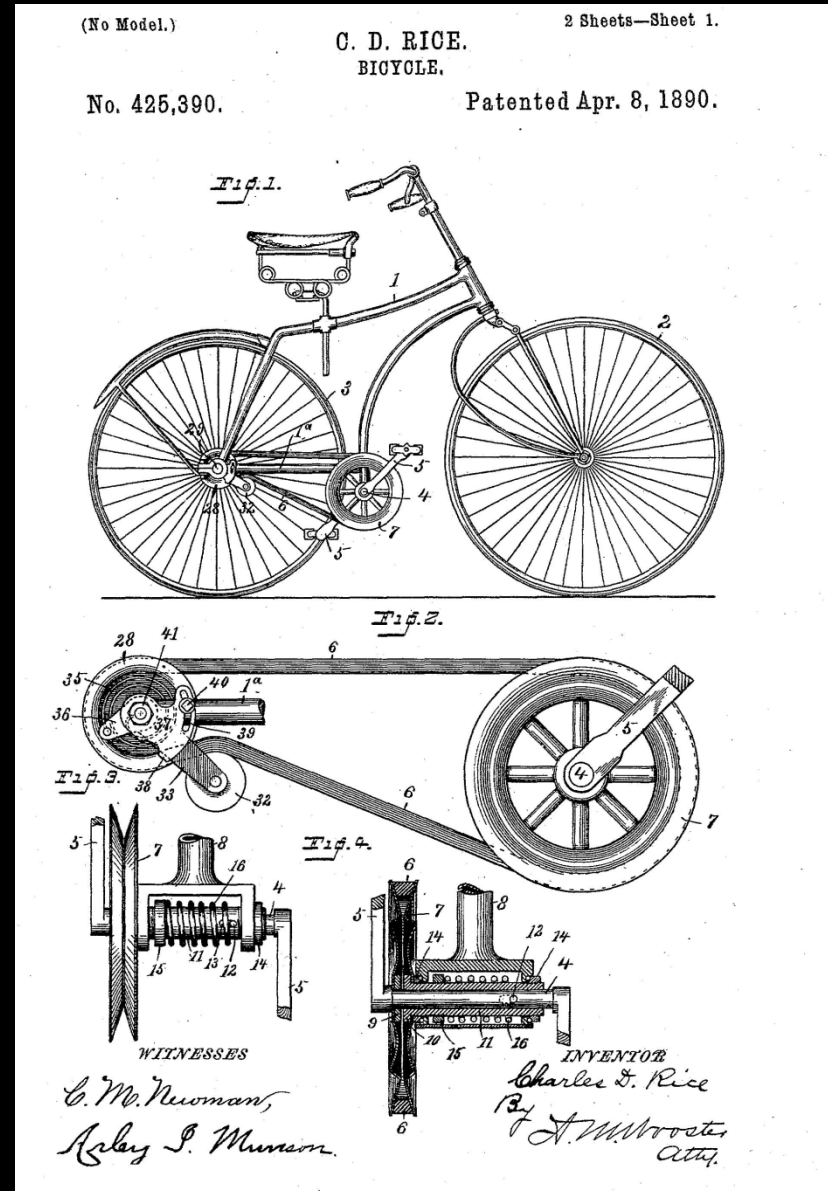
Mitchell Rigie and Keith Harmeyer

Definitions of Creativity

'Creativity is the ability to find new solutions to a problem or new modes of expression; thus it brings into existence something new to the individual and to culture.'
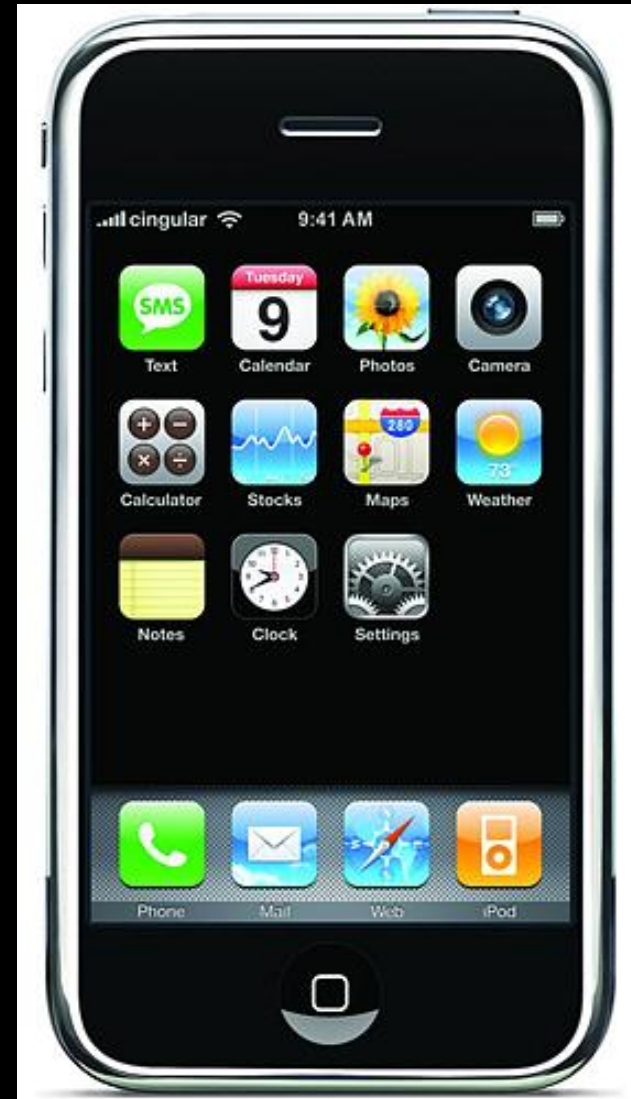
Dr. Betty Edwards

Definitions of Creativity

'Creativity is the process of bringing something new into being. Creativity requires passion and commitment.'

Rollo May

Definitions of Creativity

Creativity is the ability to generate innovative ideas and manifest them from thought into reality. The process involves original thinking and then producing.

Wikipedia

Key words for Creativity

Problem-solving

Originality

Innovation

Process

Connections

Product

Value

WHY CREATIVITY?

Because…

- We need new ideas to solve world issues
- Creativity helps us think and act more effectively, contributing to an increase in:

  - Crucial cognitive skills

  - Self-control

  - Focus and attention

  - Working memory

  - Self-confidence

Divergent Thinking

[Sir Ken Robinson on Divergent Thinking:](#)

http://www.youtube.com/watch?v=zDZFcDGpL4U
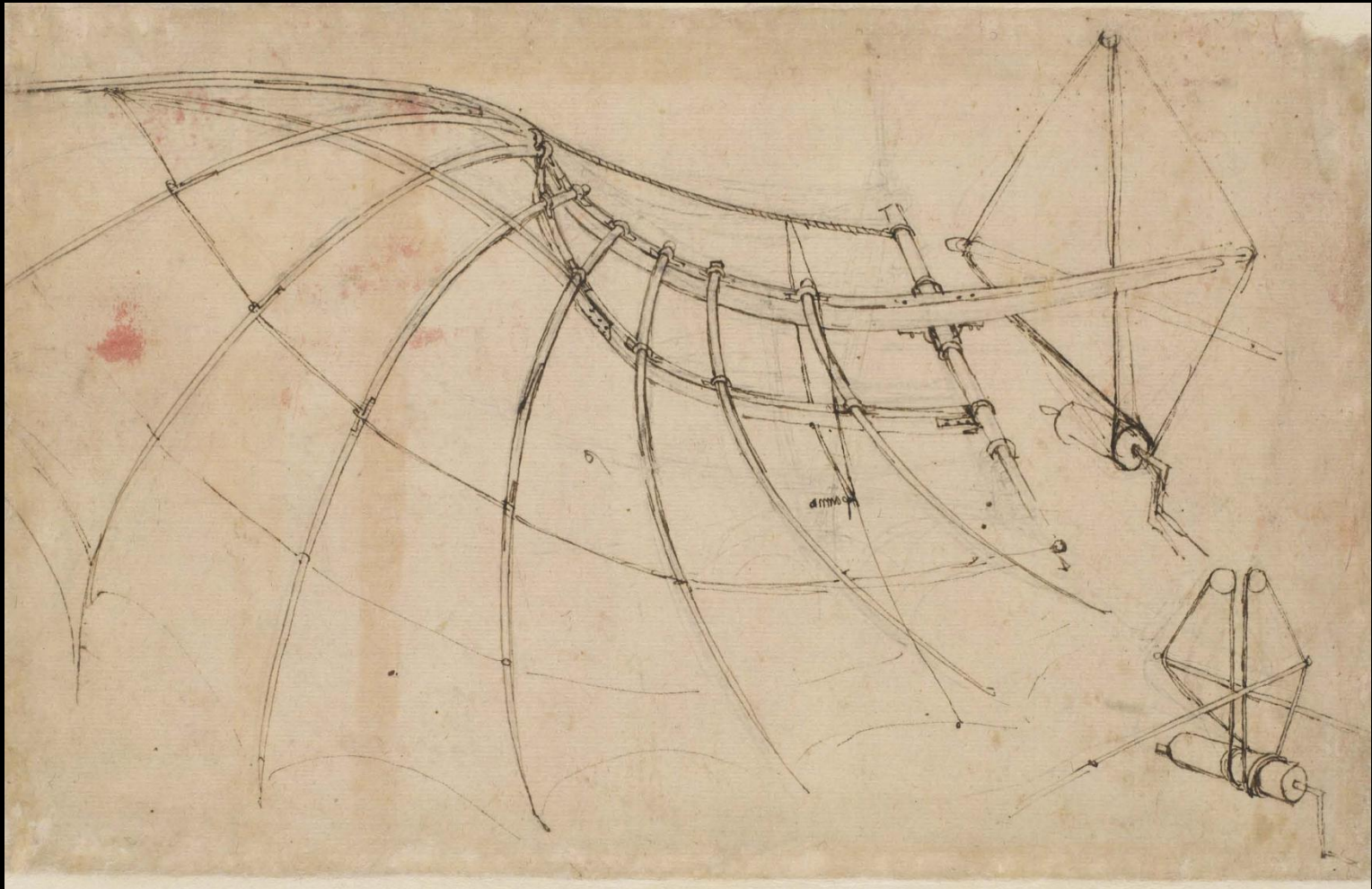
The Interdisciplinary Approach

- Breaks down boundaries between subject

- Encourages cross-curricular learning

- Results in new ideas and creativity

Interdisciplinary Approach and Systemic Thinking

Examples of Creativity in Educational Settings (schools and museums)

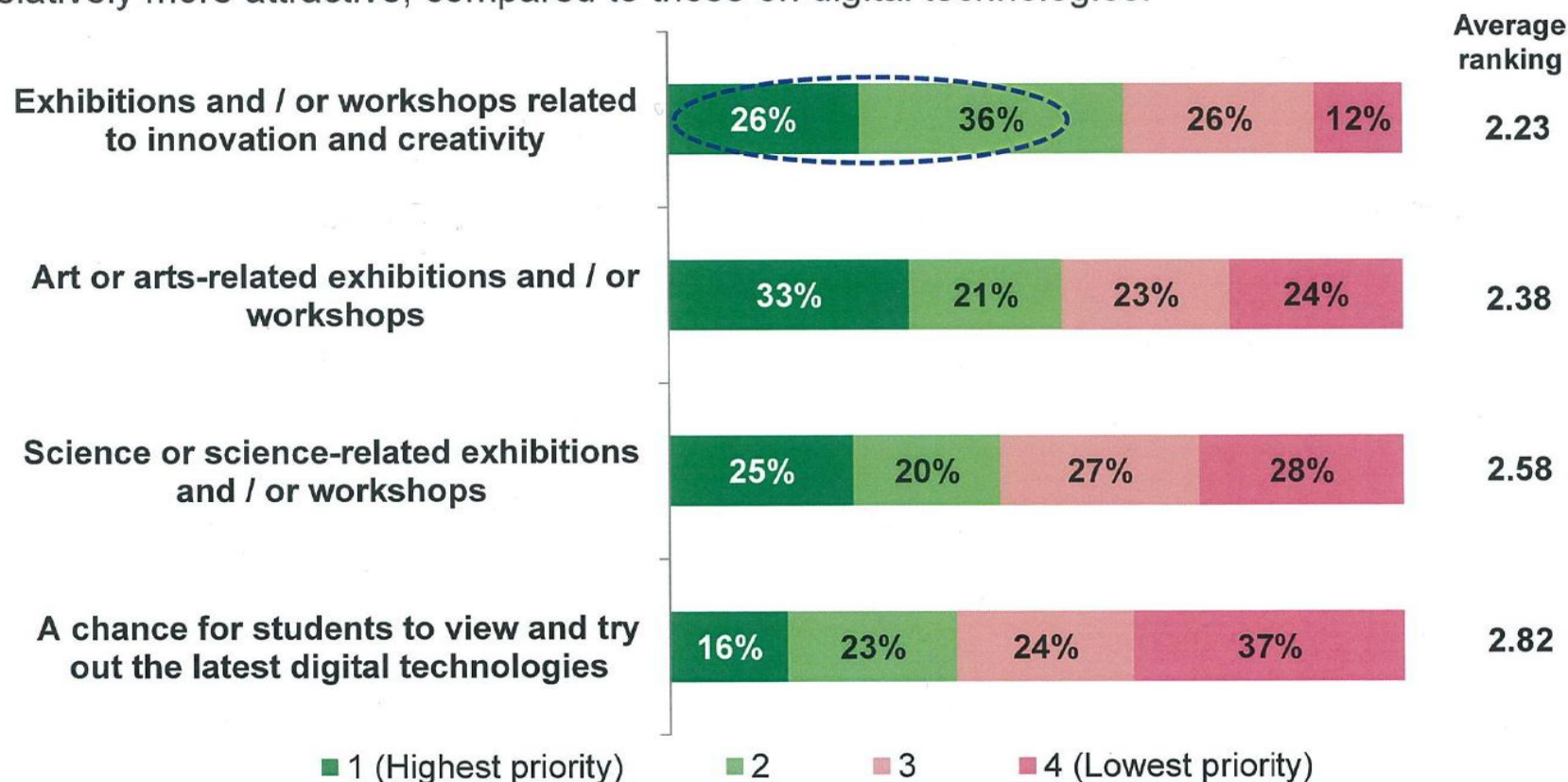# ARTSCIENCE MUSEUM AT MARINA BAY SANDS

Educators' Survey and Focus Groups

TYPES OF EXHIBITIONS THAT WILL ATTRACT SCHOOLS TO ARTSCIENCE MUSEUM

- Exhibitions and / or workshops related to innovation and creativity are seen to be the relatively more attractive, compared to those on digital technologies.

Average ranking

Exhibition type	1	2	3	4	Average ranking
Exhibitions and / or workshops related to innovation and creativity	26%	36%	26%	12%	2.23
Art or arts-related exhibitions and / or workshops	33%	21%	23%	24%	2.38
Science or science-related exhibitions and / or workshops	25%	20%	27%	28%	2.58
A chance for students to view and try out the latest digital technologies	16%	23%	24%	37%	2.82

■ 1 (Highest priority) ■ 2 ■ 3 ■ 4 (Lowest priority)

E8 ArtScience Museum is developing its galleries to offer interactive and creative learning opportunities. Please rank the types of exhibitions that will attract you to bring your students to the renewed ArtScience Museum, with 1 being the exhibition with your highest priority and 4 being the exhibition with your lowest priority.

Base: n=511

Interdisciplinary Examples in Schools: Singapore

(Primary) *For my school we do [combine] on Art and Maths... for instance origami, we use origami to teach Mathematics.*

# Interdisciplinary Examples in Schools: Singapore

(Secondary) *When the opportunity arises, we try to blend. For example, Maths – they have a graphic calculator quiz where they use graphic calculators to design posters... So it's like something with Science and the Arts.*

Interdisciplinary Examples in Schools: UK

Notre Dame High School, Scotland

- Timetabled creativity into the curriculum
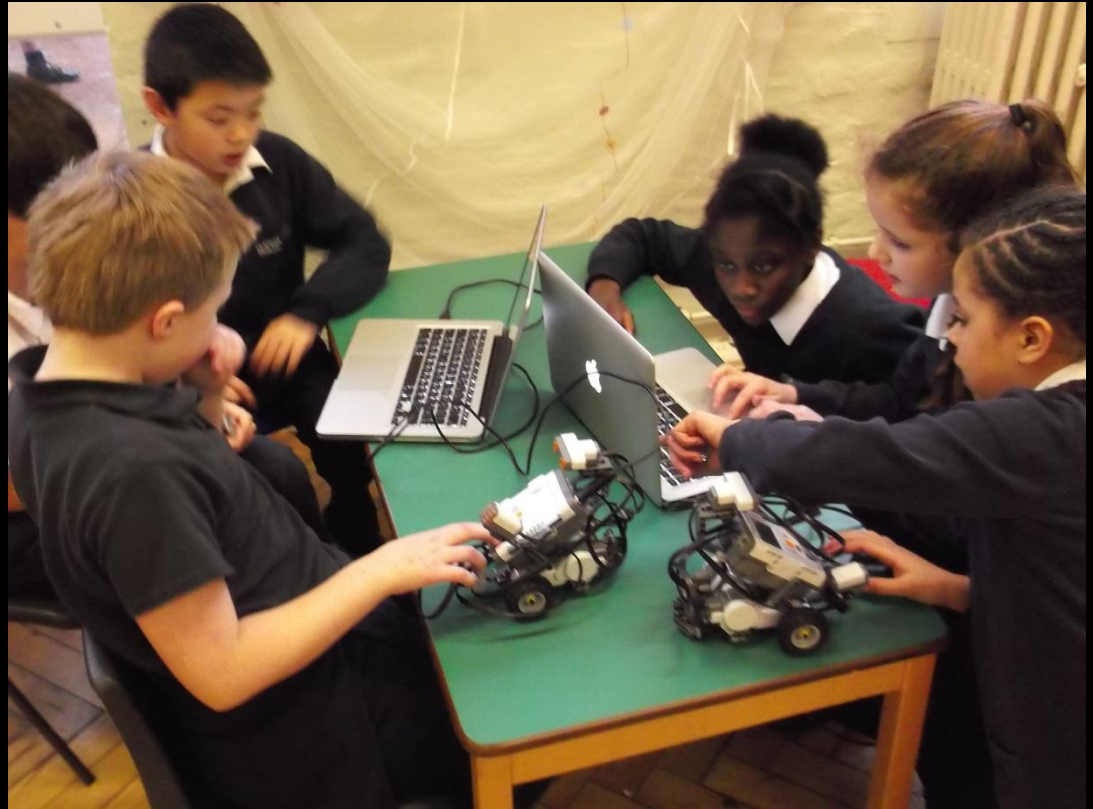
Notre Dame High School, Scotland

Cross-curricular projects include:

- Digital video
- Problem-solving ('Dudley Challenge')
- Enterprise

The Original Idea

Case study:

Children designing for real-world problems.

Barriers to Creativity in Learning

- Curriculum
- Time
- Exams

"… sometimes we cannot finish our syllabus so … it's hard to go across the other departments…"
(Secondary)

PORTALS to Creativity in Learning

- People

- Policies

- External Environment

PORTALS to Creativity in Learning

Policies

- National
- Regional
- Local
- School

PORTALS to Creativity in Learning

People

- e.g. Designettes (industry professional input)
- Teachers
- Creative practitioners

PORTALS to creativity in learning

External Environment

e.g. Reggio Emilia Provocations, exploration, play, open-ended, new ways of seeing and using, lines of enquiry, student-led learning, teacher as facilitator

PORTALS to Creativity in Learning

External Environment

Conditions for learning
- Encouragement for experimenting
- Risk-taking
- Where failure is part of the process

Summary

Creativity can be integrated into mainstream learning