

### **TWG 3: Creativity for Teachers and Teaching**

#### **Theme co-leaders:**

**Michael Henderson (Monash University, Australia)**

**Danah Henriksen (Arizona State University)**

Creativity has been highly touted as a central concept for 21<sup>st</sup>-century thinking, teaching, and learning. It is widely noted in both academic literature and popular discourse as being essential to the types of thinking skills and approaches to the world that students will need for the present and future. Moreover, creativity is vital in teaching, because students learn and adopt creative habits of mind when these are part of their learning environments. There is a deep intersection between technology and creativity, and the potential of both to inform each other in learning settings. Yet creativity and technology are complex areas which involve pedagogy, thinking skills, risk-taking, ideation, problem-solving, and more. TWG3 aims to explore the intersection of these constructs and provide insight into how we can develop creative thinking in teaching and learning.

#### **Members of the group**

Ana Amélia Carvalho, University of Coimbra

Miroslava Cernochova, Charles University

Edwin Creely, Monash University, Australia

Deepshikha Dash, Indian Institute of Technology Kharagpur

Trina Davis, Texas A&M University

Punya Mishra, Arizona State University

Erkko Sointu, University of Eastern Finland

Paolo Tosato, Ca' Foscari University of Venice

#### **Issues**

Creative risk-taking and productive failure are essential in creative processes, in terms of iterations of failure that lead toward ultimate success; or in leading to contemplation or reflection on a given problem and its possibilities, and in enhancing learners' ability to manage ambiguity. Yet there are few existing guidelines, supports, tools or examples to help practitioners build risk-taking, productive failure, and creativity into their teaching. Systemically, educational environments are often unsupportive of risk-taking and failure. It is rare that good, original, creative work or ideas come together or succeed on the first try. Therefore, teaching and learning settings need to make allowances for and support risk-taking and productive failure in schools, in order for creativity to develop and flourish among teachers and students.

#### **Identified Current Misalignments**

- Much popular discourse on 21st century education denotes creativity as a critical thinking skill, but despite there is little support and few guidelines for implementing its elements of creative risk-taking and productive failure.
- Many educational environments focus on practices that run contrary to creative risk-taking and productive failure (e.g. high stakes testing, "curriculum crush", "teacher-proof" or scripted curricula, rewards/punishment-based approaches to grading)

#### **'Emerging' New Alignments**

- New opportunities for creative risk-taking and productive failure have arisen because of technology (e.g., Virtual Reality, robotics, coding). By virtue of the fact that they are new, the outcomes are uncertain and we need to realign how we think about technology, pedagogy, and content.
- New forms of organisation of teaching and learning offer opportunities for creative risk-taking. For instance, transdisciplinary/cross-curricula teaching, requires teachers to discover new ways of working and new curriculum designs that in-of-themselves involve creative risk-

taking behaviours. The recent interest in entrepreneurial thinking, preferences creative mindsets including that of design, iterative development.

## **Strategies and Actions for:**

### **Policy makers**

1. Currently, risk-taking and failure has a negative connotation within curriculum policy frameworks. Policy documents should positively reframe these concepts as part of creative learning processes.
2. Recognize creative risk-taking as a key competence of all stakeholders in education systems and workforce—in alignment with the interests of creative workforce development, and futures thinking
3. Create space for alternative assessments and formative assessments that encourage and expect creative risk-taking, as the current high stakes testing environment is antithetical to creativity.

### **Practitioners**

1. Teachers should:
  - a. Build classroom environments that are supportive of creative risk-taking and make allowances for productive failure.
  - b. Teach students strategies to “fail forward” or turn a failure into iterations of creative work.
  - c. Design activities that purposely integrate opportunities to try new ideas, fail, and then regroup and persist toward learning and creative outcomes.
  - d. Identify how technologies, as tools to think with, can allow students to trial and practice ideas and iterations of creative work.
  - e. Model processes of creative risk-taking and productive failure in their own practices.
2. Local education leaders should promote creativity by valuing creative risk-taking and productive failure in teachers (i.e reward or recognition structures aligned with creative risks).
3. Teachers and administrators should recognise the role of learners’ family and peers in their capacity to engage in creative risk-taking. Communication between school and home should emphasize creative risk and potential failure for students’ preparation for work and life.
4. Teacher educators, both pre- and in-service, must integrate conceptual and practical learning around creative risk-taking and productive failure into coursework and field experiences.

### **Researchers**

1. There is a lack of research around creative risk-taking and productive failure in the field of education. More empirical studies are needed to reveal how creative risk-taking and productive failure enhance learning, and how they are best supported. In particular, risk-taking and failure are grounded in context, so we need more deep, rich studies (including longitudinal work) to enhance understanding of these concepts within and across varied contexts.
2. The nature of creativity for learning, including the role of risk-taking and process of productive failure, continues to be misunderstood in educational policy and practice. Creativity researchers need to better understand why this misalignment exists, and how it can be realigned.
3. There is little research relating to the role that technology can play in supporting (and constraining) creative risk-taking and productive failure. Researchers should begin by connecting with existing relevant research areas such as resilience, persistence and personal skills.
4. Assessment regimes, including the high stakes testing in most education systems, have been identified as a critical impediment to cultures of creative risk-taking. Creativity researchers should seek to integrate their work into existing conversations around assessment. Allowances for trialling, failure and iteration are needed within assessment structures.