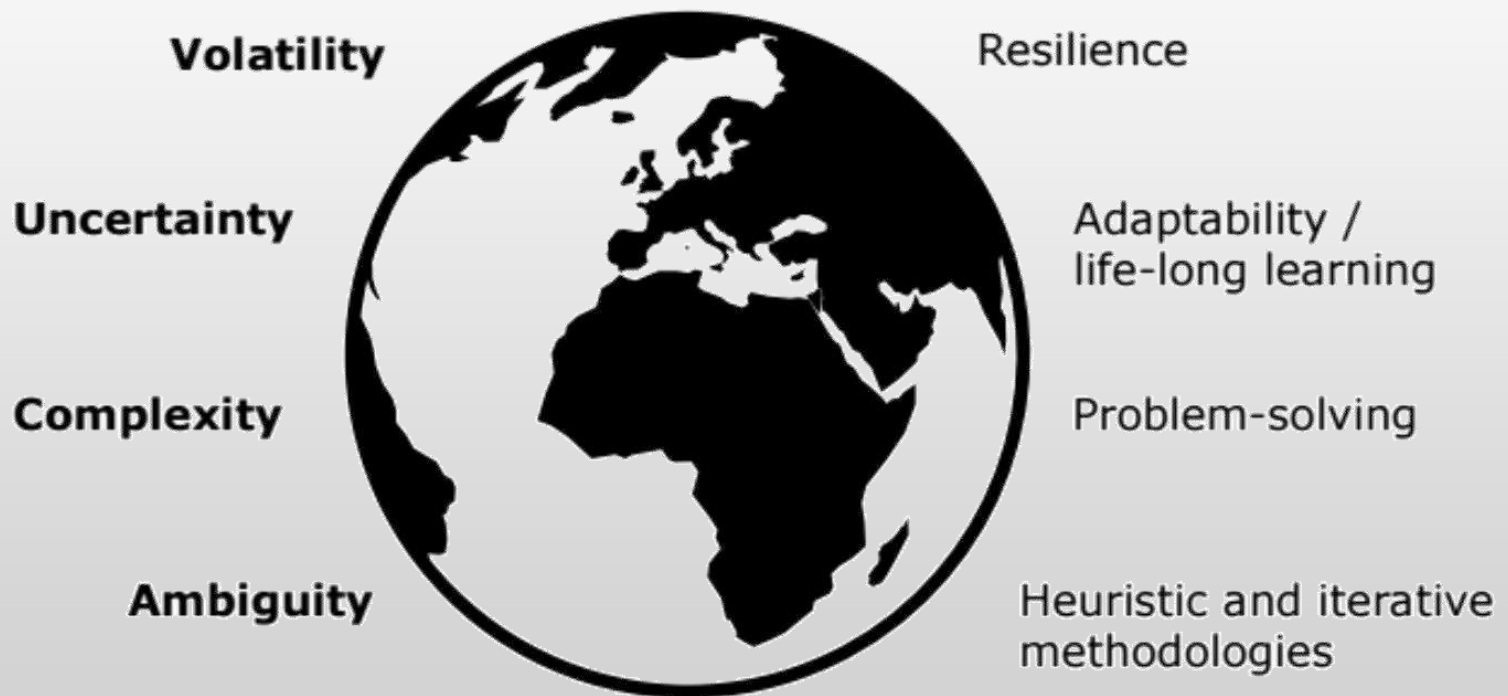




How to teach innovation?

Basic directions for teachers

Alexander and Fry's pedagogically-oriented framework for design-business experiences aimed towards preparing students for VUCA conditions



How to prepare students for a „NEW NORMAL“?

- VOLATILITY, UNCERTAINTY, COMPLEXITY, AMBIGUITY - a “new normal,” set of conditions
- Future learners can navigate VUCA using a “design intelligent” approach consisting of human-centered design, qualitative stakeholder research, rapid low-stakes prototyping, and the testing of new ideas (also known as iterative feedback loops with lots of experimentation) for new technologies and systems.
- The future-oriented, “what-if?” mindsets of the incoming generation of learners can be both modeled and taught by today’s innovative universities.
- the lean, networked, capacity-oriented methods we describe here put greater emphasis on design-oriented entrepreneurial inquiry, helping our future design entrepreneurs in preparing them to meet our collective future challenges.



Design-oriented pedagogy

A design-oriented pedagogy continues to retain and add value through involving students in inductive, heuristic processes which are refined and iterated through successive feedback loops using methods such as critique and user-testing.

Changed values and priorities of today's latest generation of consumers, learners and employees

- Attracted to companies whose values align with their own; that sharing is perceived as having both a pragmatic and an ethical value; and that a company's story is important; so brand needs to align with values.
- The 21st century employee expects not only to have multiple careers in a lifetime, but to have multiple simultaneous roles in the workplace; adaptability, flexibility and ability to reinvent one's working life are expected norms.
- The 21st century learner is less patient about received wisdom. This ensures that a pedagogy that does not allow flexible modes of personal investigation and does not leverage the non-linearity and ubiquity of the internet is unlikely to succeed. The immediacy of relevance in material and new classroom approaches must ultimately counter the high costs associated with a higher education.

Two important facts in global competitiveness for STEM education

- STEM to STEAM: a “what-if?” or “future directed” creative thinking to reframe what constitutes a ‘life-altering breakthrough’ in terms of sustainable survival of humans.
- A economic growth race might become less important than collective human survival in the face of severe global challenges—global warming amongst them.

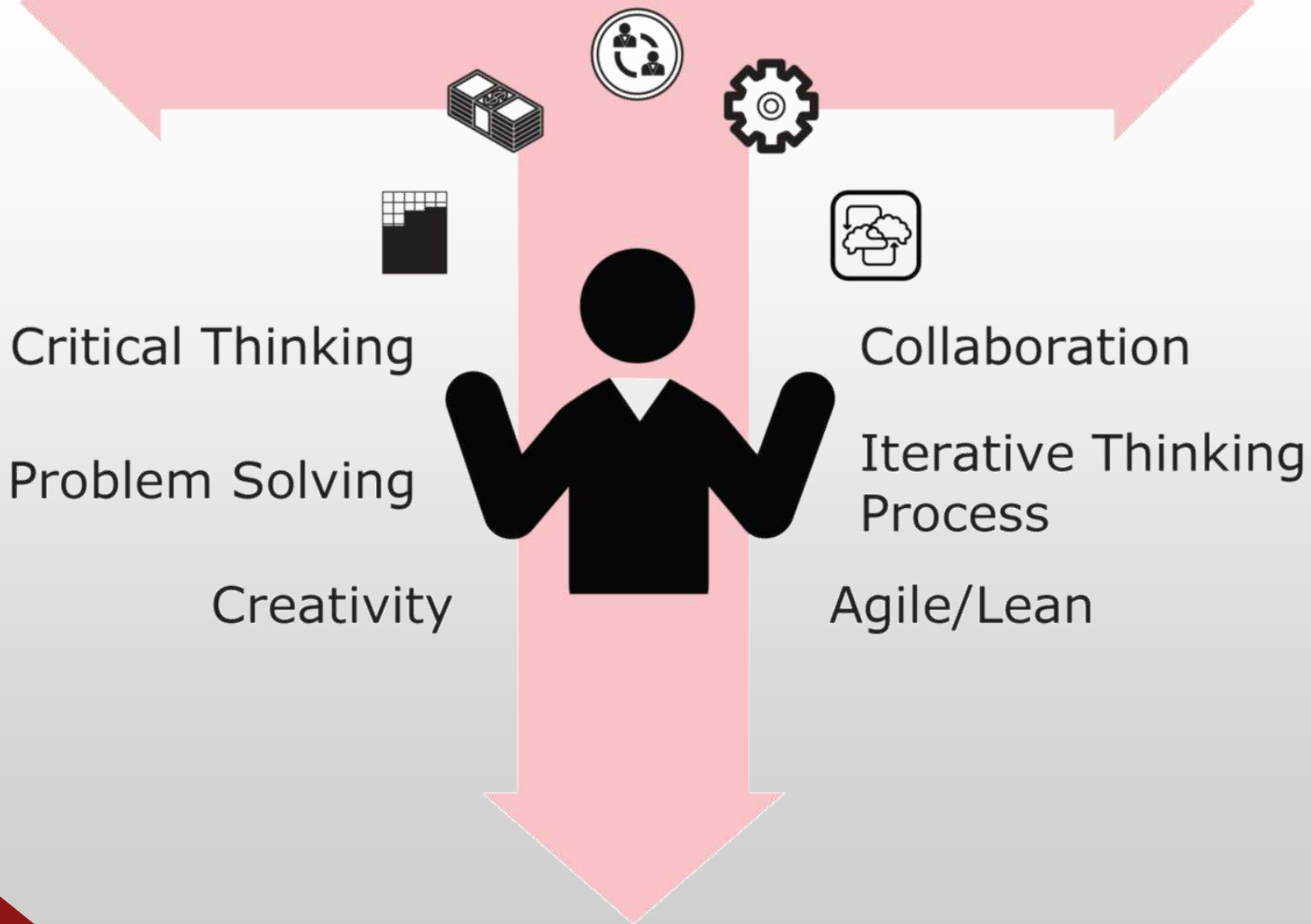


How to prepare students for the world's new challenges and to take their values into consideration

- design
- haptic problem-solving
- applied creativity
- integrated learning

To be among STEAM's key attributes to be taught in addition to codified technological/scientific curricula.

Breadth of Cross-disciplinary Competence



Depth of Disciplinary Expertise

T-shaped thinkers (Hansen, 2012)

- combining analytical thinking—the vertical leg of the T
- with horizontal thinking: intuitive, experiential, and empathetic” (Guest, 1991)

Parsons' design intelligent pedagogy

- new modalities of learning
- emphasis on innovation
- redesigned models of educational frameworks

Skills for business leaders

- A design hybrid education can offer students the skills that today's business leaders seek (Martin, 2009), especially for organizations aiming to create new value for their customers.
- Such skills include collaboration, empathy, practical problem solving, social responsibility, multidisciplinary approaches, inventive use of technologies, adaptability and design thinking coupled with business rationale.



What if?

“What if?” question that is at the conceptual heart of the innovation inquiry.