# Measuring student success skills

A review of the literature on creative thinking

Recognized as a pivotal skill for career success in the modern era, creative thinking stands as a rapidly evolving and highly sought-after competency among employers. Creative thinking—distinguishable from general creativity due to a focus on process and not outcomes—is increasingly vital for adapting to the dynamic demands of contemporary workplaces. As emerging roles necessitate skills that are not yet defined, particularly in the context of the proliferation of artificial intelligence, for example, ChatGPT, and other transformative technologies, the ability to think creatively becomes crucial for adapting to these new challenges. These societal shifts underscore the growing importance of creative thinking as a key asset in navigating the rapidly changing technological landscape.
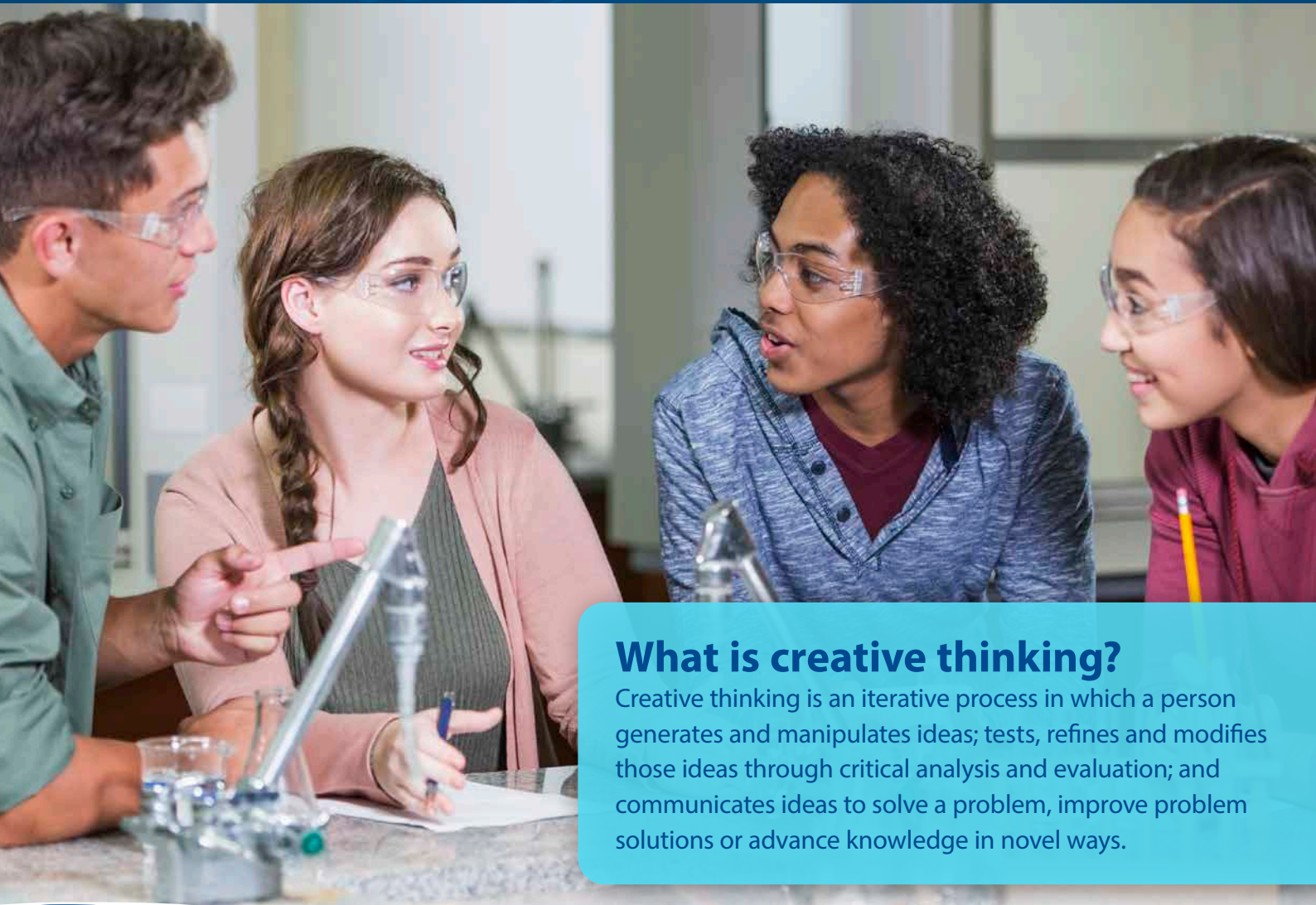
What is creative thinking?

Creative thinking is an iterative process in which a person generates and manipulates ideas; tests, refines and modifies those ideas through critical analysis and evaluation; and communicates ideas to solve a problem, improve problem solutions or advance knowledge in novel ways.

Is creative thinking generic or domain specific?

Evidence suggests that creative thinking combines both domain-specific and domain-generic skills. Deep knowledge in a particular field (domain-specific) enhances creativity within that area, and domain-general creative thinking elements, such as divergent thinking, can be applied to a wide range of tasks beyond that specific domain.

How do students develop creative thinking over time?

Existing literature does not offer a single definitive picture of how creative thinking develops; rather proposed developmental frameworks and learning trajectories are still theoretical.

What is malleable with respect to creative thinking as a result of instruction?

Instructional strategies in creative thinking focus on four malleable components.

1 Divergent thinking, which involves idea generation

2 Experimenting, which involves idea manipulation for novel solutions

3 Reflecting and evaluating, which are used for assessing idea merit

4 Elaborating, which supports the clear communication of ideas

How is creative thinking influenced by culture?

Models of creative thinking are shaped by cultural differences. Western cultures often prioritize novelty and problem-solving in their approach to creativity, focusing on cognitive aspects. In contrast, Eastern cultures often value the usefulness of creative outputs over novelty and emphasize emotional and intrapersonal factors that influence creative thought.

What does the research say about effective creative thinking instructional strategies?

Current research on effective instructional strategies for promoting creative thinking is limited, but project-based and problem-based learning approaches have shown potential. Thus, additional experimental and quasi-experimental investigations are needed so that causal claims can confidently be made about the effects of instructional strategies on creative thinking processes.

How can creative thinking be measured and assessed?

Assessment of creative thinking should rely on multiple information sources to holistically understand and support an individual's or group's creative potential, including both strengths and areas for improvement. Importantly, while high-stakes testing in certain contexts can discourage creative thinking, assessments for formative purposes can improve students' creative thinking skills.