

Education researchers at Pearson teamed up with the Partnership for 21st Century Learning to conduct a review of the research literature on teaching and assessing critical thinking in K-12 and college classrooms. Additionally, we found that critical thinking is one of the most sought-after skills among new hires, yet research suggests that students may not be graduating with the level of skill needed to succeed on the job. What follows is a summary of the most significant findings.

Summary Highlights

Critical-thinking skills are too important for college, career, and life success to leave them to chance.

Key Findings

- Employers say job applicants should have critical-thinking skills.
- People with better critical-thinking skills are more prepared for the workforce.
- Critical-thinking skills do not develop on their own but must be explicitly taught.
- Critical-thinking skills predict real-world interpersonal, business, and financial outcomes.
- Training students in critical-thinking skills can improve academic outcomes related to writing and argumentation.
- There are several improvements to how critical thinking should be taught.

Key Recommendations

- Incorporate critical thinking into K-12 standards—so that it's taught.
- K-12 educators need professional development, administrative support, and technology for teaching critical thinking.
- Higher-education institutions need to include critical-thinking skills in institutional learning outcomes, provide training for faculty, and fund grants that encourage teaching of critical-thinking skills.
- Employers need to establish relationships with K-12 schools and institutions of higher education to help infuse authentic, real-world critical-thinking problems (e.g., internships, apprenticeships) into the curriculum.

What Does Good Critical Thinking Look Like?

Many frameworks for critical thinking exist. Broadly, critical thinking is defined as a multifaceted skill that involves problem-solving in the face of ill-defined information. Based on the literature, Pearson has defined critical thinking as consisting of four core skills:

- 1. systems analysis:** the ability to determine the relationship between variables in a system;
- 2. argument analysis:** the ability to draw logical conclusions based on data or claims;
- 3. creation:** the ability to construct a strategy, theory, method, or argument based on a synthesis of evidence (the artifact that is created goes beyond the information at hand);
- 4. evaluation:** the ability to judge the quality of procedures or solutions. Evaluation involves criticism or a work product using a set of standards or specific framework.

Is There a Skills Gap?

Due to changes in the workplace, we have seen companies move to greater emphasis on hiring graduates who can solve problems under ill-defined circumstances. Recent large-scale surveys of employers reveal that critical thinking is among the most important employability skills for new hires, with as many as 81 percent of companies in one survey placing a strong emphasis on the ability to think critically.

What Support Do Educators Need?

Like any skill, critical thinking must be taught explicitly. Educators can no longer assume that simply giving students ill-defined problems is enough to support learning. Rather, instructors should engage in some amount of direct instruction, teaching students what good critical thinking looks like in terms of desirable behaviors and useful strategies for solving ill-defined problems. Students must also have opportunities to practice their critical-thinking skills with instructor support and to receive feedback on their performance. Teaching and technology grants may help spur more widespread adoption of innovative teaching practices that support the development of teamwork skills.

To ensure coherent and consistent implementation of education for critical-thinking skills that are relevant in the workplace, stronger alignment is needed between K-12, higher-education, and employer stakeholders. Employers can engage in outreach to educational institutions to forge both formal and informal partnerships. Formal partnerships might include industry leaders working with colleges to help establish alternative college education programs tightly aligned to the skill needs of that particular business sector. Other ways of formal partnering might include having business leaders serve on special advisory boards for educational institutions or accreditation organizations, participate in drafting educational standards, or even enter the classroom to teach clinical or applied courses in their areas of expertise. Less formal partnerships might include supporting internships or apprenticeships for both high-school and college students and tailoring those experiences to ensure that participants gain training and high-quality feedback on their critical-thinking performance.

Employers can also incentivize employees to foster their critical-thinking skills through recruiting, hiring, and compensation strategies to reward workers that demonstrate high levels of critical thinking. Finally, once on the job, employers should develop their own critical-thinking training and make it broadly available to employees, along with appropriate professional development opportunities that allow individuals the chance to grow their own critical-thinking skills.