



Point of View: The Case For Essential Higher Education and Career Skills

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Essential Higher Education and Career Skills

Fact-based knowledge is no longer sufficient for success in higher education and career. Students need the essential skills of critical thinking, problem solving, and written communication to achieve their full potential. By improving their essential skills, students can increase the likelihood of success in higher education and beyond.

Failing to complete a degree in higher education or find an appropriate job upon graduation from secondary or higher education impacts more than individual students. The negative consequences also affect parents, educational institutions, and the overall economy. Secondary and higher education institutions have an important role to play in improving students' educational and career outcomes. Educators need to assess students' essential skills early in their academic journeys and then use the assessment results to provide targeted developmental support.

Persistence, Retention, and Graduation Challenges in Higher Education

Although parents and students often believe that gaining admission to higher education is a clear step toward success, today's students face an enormous challenge in successfully navigating higher education, as reflected in national graduation rates. Only 41% of first-time, full-time higher education students within the United States graduate within four years and only 59% do so within six years (de Brey et al., 2019), statistics that paint a concerning picture. Persistence and retention are long-standing challenges—with little recent improvement—particularly for minority and low-income students (Banks & Dohy, 2019; Hernandez & Lopez, 2004). The most recent data indicate that among students who enrolled in higher education for the first time in fall 2017, only 62% were retained at their original institution in fall 2018 (National Student Clearinghouse Research Center, 2019). Although many students cite non-academic reasons such as financial difficulties, health, or family obligations as the primary causes for dropping out or deferring their education (Astin & Oseguera, 2012), academic failure is also a significant factor contributing to lack of persistence and retention of students in higher education.

The essential skills of critical thinking, problem solving, and written communication can help students entering higher education achieve better outcomes, such as a higher cumulative GPA during their educational tenure (Zahner et al., 2012). CAE's research shows that approximately 60% of entering students are not proficient in these skills, and since these skills are seldom explicitly taught as part of higher education curricula, most students have little structured opportunity to improve their proficiency. Identifying and supporting students who may be at risk due to insufficient proficiency in these essential skills upon entry to higher education should be one component to helping improve persistence, retention, and graduation rates. Improving students' essential skills in secondary education to better prepare them for higher education should be another important component. Measuring these essential skills can be best accomplished by using an authentic, valid, and reliable assessment.

Unemployment and Underemployment Challenges

Once students do graduate, their next challenge is finding a career that leverages their knowledge, skills, and abilities. While content knowledge is a requisite part of a student's education, it alone is insufficient



for a student to thrive academically and professionally (Capital, 2016; Hart Research Associates, 2013; National Association of College and Employers, 2018; Rios et al., 2020; World Economic Forum, 2016). Most students (approximately 80%) consider themselves proficient in the essential higher education and career skills of critical thinking, problem solving, and written communication. However, the percentage of employers who rated recent graduates as proficient in these skills differs greatly: 56% for critical thinking/problem solving and 42% for communication (National Association of College and Employers, 2018). In fact, CAE’s research shows that only 56% of exiting students are proficient in these skills.

When graduates are unable to find appropriate employment, the impact is immense for students, their parents, and their institutions. The most recent data from the U.S. Department of Education reveal that many low- and middle-income families have taken on a substantial debt to finance their child’s tuition (Fuller & Mitchell, 2020). According to analysis by the Federal Reserve Bank of New York (2020), as of December 2020, 40% of recent higher education graduates were underemployed—that is, they were working in jobs that typically do not require a higher education degree—impacting their personal financial health and that of the broader economy.

Authentic Measurement of Essential Skills

To assess how students perform in situations requiring essential higher education and career skills, CAE’s performance-based assessments situate students in real-world scenarios that require purposeful written responses. Students are asked to address important issues, propose solutions to problems, and recommend courses of action to resolve conflicts. They are instructed to support their responses by utilizing information provided within the assessment, which may include reference materials such as technical reports, data tables, newspaper articles, office memoranda, and emails. There is no single “correct” answer, and scores reflect a range of plausible and effective strategies—a process that, by design, mimics real-world, complex decision environments.

CAE’s secondary and higher education assessments focus on data literacy, critical reading and evaluation, and the ability to critique arguments by identifying logical flaws and questionable assumptions—skills that are increasingly relevant in a diverse world where the ability to clearly perceive, integrate, and critique opposing viewpoints is essential. Students are challenged to:

- analyze and understand data;
- evaluate the credibility of various documents;
- identify questionable or critical assumptions;
- deal with inadequate, ambiguous, and conflicting information;
- identify additional information that would help resolve issues;
- construct an organized and logically cohesive argument by providing elaboration on facts or ideas (e.g., explaining how evidence bears on the problem, providing examples, and emphasizing especially convincing evidence);
- organize and synthesize information from several sources; and
- marshal evidence from different sources in a written response.

Our assessments (i.e., Collegiate Learning Assessment [CLA+], College and Work Readiness Assessment [CWRA+], and Success Skills Assessment [SSA+]) have been administered to over 800,000 students across more than 1,300 institutions since 2005.

CAE Research

My work at CAE focuses on how our assessments measure the essential skills for higher education and career readiness. The troubling reality described earlier is reflected in our data, which indicate that most students (60%) are not proficient in these skills upon entry into higher education (Figure 1). By the time students graduate, the number of students who are not proficient in these skills drops, but only to 44%. Thus, an alarmingly large proportion of students who graduate from higher education with bachelor's degrees lack proficiency in the skills most in demand by employers. These data, for more than 123,000 U.S. higher education students at both public and private institutions, were collected using CLA+, between the fall of 2013 and the spring of 2019.

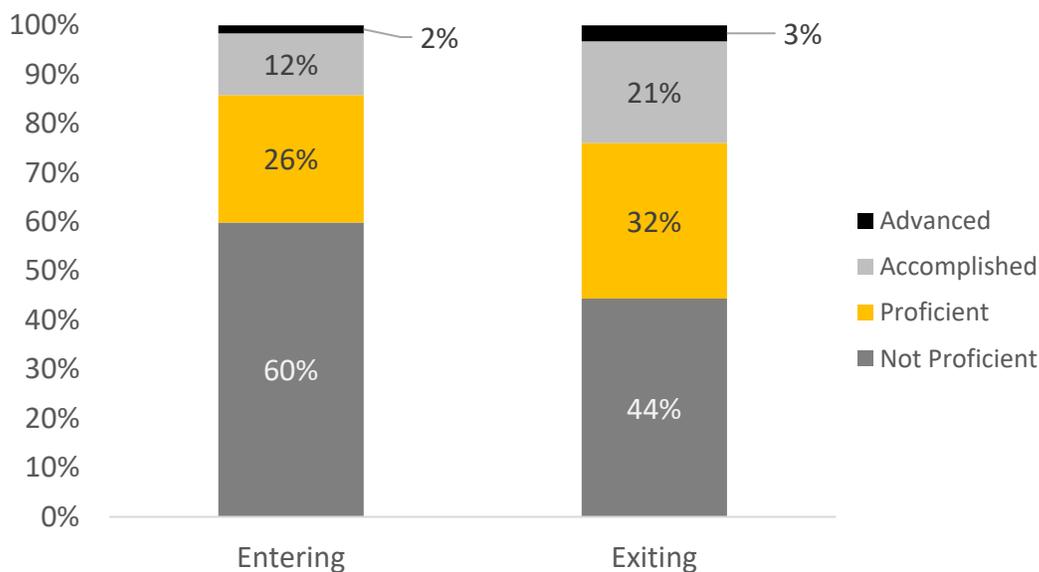


Figure 1: Percentage of Students by CLA+ Mastery Level and Year in School for Fall 2013 through Spring 2019

Note. $n \approx 70,000$ for entering students; $n \approx 52,000$ for exiting students

There is room for improvement even within the group of students who are proficient. Only 2% of entering and 3% of exiting students achieve the highest (i.e., Advanced) level of mastery (Figure 1). CAE data show that students who perform better on CLA+ are more likely to have positive post-higher education outcomes as measured by employment, salary, and graduate school enrollment (Zahner & James, 2016; Zahner & Lehrfeld, 2018)—and that only 56% of exiting students are equipped with the skills to succeed.

First Step: Identify and Support

Opportunities exist to improve students' skills prior to entrance into higher education or career. High schools are not sufficiently preparing their graduates with these requisite skills for success in higher education and career as evidenced by higher education retention rates (de Brey et al., 2019) as well as CLA+ data (Figure 1). Students who lack essential higher education and career skills are the ones at risk for not completing their studies (Venezia et al., 2005).



Although the majority of states are reporting their students' higher education and career readiness skills as defined by content areas on standardized tests (Cohen, 2017), there is not a consistent way of comparing student outcomes across states, leading to disparate scales of measurement. Hence, it is difficult for higher education institutions and employers to know exactly what skills applicants possess short of administering an assessment themselves. Secondary and higher education institutions need an authentic, consistent measure of essential skills. Such an instrument would help identify students who need additional support to improve their skills, including those who are already proficient, but would like to become more skilled.

Improving Higher education and Career Outcomes

Educators can use students' assessment scores and mastery levels to help identify strengths and developmental support required for improvement. Being assessed this way is particularly valuable for those students who are most at risk for dropping out due to academic difficulty. Identifying students who might benefit from additional academic intervention early in their tenure may lead to an increase in student retention, persistence, and graduation rates. Furthermore, improving these skills would increase the likelihood that the individual student will have better higher education and post-higher education outcomes, such as higher GPA (Zahner et al., 2012) appropriate employment, higher salary, and enrollment in a graduate program (Zahner & James, 2016; Zahner & Lehrfeld, 2018).

Educators and employers clearly recognize that fact-based knowledge is no longer sufficient and that critical thinking, problem solving, and written communication skills are essential for success. The opportunity to improve students' essential skills lies in identification and action. Assessments that provide educators with the opportunity to help students identify their strengths as well as areas where they can improve are fundamental to developing the critical thinkers, problem solvers, and communicators who will be essential in the future. With close and careful attention paid toward students' essential skills, even a small increase in the development of these skills could boost future outcomes for students, parents, institutions, and the overall economy.

About the Author

Doris Zahner, PhD, is the Chief Academic Officer at CAE. She oversees all research studies pertaining to CAE's performance-based assessments and provides scientific oversight of scoring, equating, and reporting. Dr. Zahner holds a PhD in cognitive psychology and an MS in applied statistics from Teachers College, Columbia University. Her postdoctoral work at the Stevens Institute of Technology was on the use of diagrams in information systems design, and her personal research interests pertain to the use of diagrams in probability and mathematical problem solving. In addition to her responsibilities at CAE, Dr. Zahner is an adjunct associate professor at Barnard College and Teachers College, Columbia University, as well as New York University, where she teaches statistics courses to undergraduate and graduate students in the social sciences and public policy.

About CAE

A mission-driven, non-profit organization, CAE develops performance-based and custom assessments that authentically measure students' essential skills and identify opportunities for growth. CAE's assessments—CLA+, CWRA+, and SSA+—evaluate the skills educational institutions and employers demand most, skills that have been shown to be predictive of positive higher education and career outcomes—namely, critical thinking, problem solving, and written communication. CAE also partners with national, state, and district clients to design innovative custom performance assessments that measure the constructs vital to students, educators, and institutions. Since 2002, CAE has provided valid



and reliable insights into students' readiness for their next step to more than 800,000 students at over 1,300 secondary and higher education institutions globally. To learn more, please visit www.cae.org.

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