



Measuring Generic Skills in an International Context

Doris Zahner, PhD
May 15, 2019 | Santiago

Overview

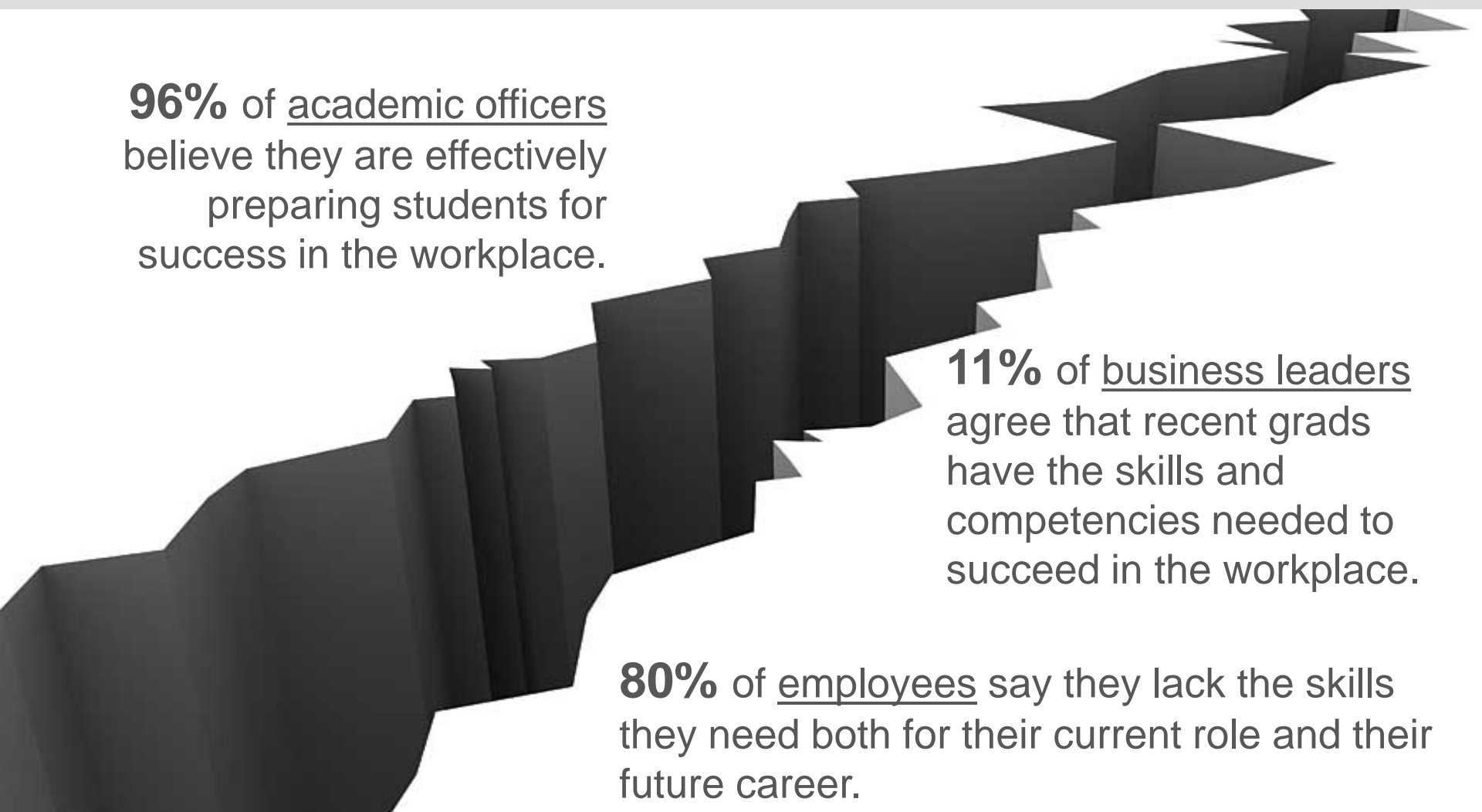
- History of CAE
- The Rationale for Measuring Generic Skills
- CLA+ International Example Use Cases
- Predictive Validity Studies
- Research & Development

History of CAE

- 1952 The Council for Aid to Education (CAE), a nonprofit organization based in New York City, is founded.
- 1996 CAE becomes part of the RAND Corporation and begins developing performance-based assessments to measure critical-thinking skills.
- 2002 CAE launches the Collegiate Learning Assessment (CLA).
- 2005 CAE becomes an independent organization to more effectively address organizational growth and to focus on assessment.

The future of education and work
requires matching skills to jobs...

...not just domain-specific skills, but
21st century skills and competencies.



96% of academic officers believe they are effectively preparing students for success in the workplace.

11% of business leaders agree that recent grads have the skills and competencies needed to succeed in the workplace.

80% of employees say they lack the skills they need both for their current role and their future career.

<https://www.gartner.com/en/newsroom/press-releases/2018-09-06-gartner-says-only-20-percent-of-employees-have-the-skills-needed-for-both-their-current-role-and-their-future-career>

Why Focus on Generic Skills?

PayScale surveyed 63,924 managers on skills they felt employees needed to become contributors to their company, community, and society.

Skills	% of managers who feel recent grads lack skill
Soft Skill Critical Thinking / Problem Solving	60%
Attention to Detail	56%
Communication	46%
Leadership	44%
Interpersonal Skills / Teamwork	36%
Grit	25%
Curiosity	16%
Hard Skill Writing Proficiency	44%
Public Speaking	39%
Data Analysis	36%
Industry Specific Software	34%
Mathematics	19%
Design	14%
Coding/Programming	12%
Foreign Language Proficiency	11%
SEO/SEM Marketing	7%

Specifically

- National leaders want to know how well their universities are preparing their students
- Faculty and administrators want to know how to improve their teaching and learning
- Students want credible, third-party evidence (certificates) of their skill levels obtained when they graduate to show potential employers
- Employers want credible evidence of the skill levels job applicants have not only grades students' received in college
- Context: Over 100 million college students world wide today. Up to 500 million projected by 2030.

Generic Skills Assessments Used As Objective Tools

The only way to improve generic skills of university graduates is to develop assessments that instructors, students, administrators and employers can use in their efforts to improve student and entering new employee generic skill levels.

Applications

- Permit employers to more easily identify students of high ability who warrant interviews for high-value jobs.
- Permit graduating seniors to distinguish the level of generic skills they attained from that of other graduating seniors.
- Permit universities to identify departments and programs that contribute the most to the growth and attainment of generic skills.

Applications

- Permit ministries of education to identify universities that produce the most value-added growth and/or the highest attainment level of generic skills.
- Permit graduating secondary-school students and their parents to know the level of value-added growth and the highest attainment levels universities provide their students.

Applications

- Permits researchers to evaluate which academic disciplines at universities contribute the most to student learning outcomes success.
- Provides diagnostic information about the generic skills of entering students, and the retention and graduation rates of students from various demographic backgrounds, especially from underrepresented groups.
- Provides the basis for cross-national comparisons of similarly situated students and universities

Critical Policy Issues

CLA+ International attempts to evaluate and solve the following kinds of problems:

- The inability of employers to identify high ability students who attend less selective universities
- The national level measurement of generic skills in tracking economic productivity growth
- The rising costs, access deficits, disruptive changes such as student loan debt, and the decline of permanent faculty affects the quality of student learning

CLA+ INTERNATIONAL

CLA+ International

- 90 minute assessment of generic skills based on the Collegiate Learning Assessment which requires the student to demonstrate their generic thinking abilities.
- It features:
 - Performance Task (a real world problem) that is document based and requires an open ended response (60 minutes)
 - 25 selected response questions (30 minutes)

The CLA+ International Protocol

Measures six sub scores

PT:

- Analysis and Problem Solving (APS)
- Writing Effectiveness (WE)
- Writing Mechanics (WM)

SRQ

- Critical Reading and Evaluation (CRE)
- Critique an Argument (CA)
- Scientific and Quantitative Reasoning (SRQ)

EXAMPLE USE CASES FOR CLA+ INTERNATIONAL



Institutions, consortia, and ministries use CLA+ International to:

- Estimate institutional and individual student learning gains in critical-thinking and written communication
- Research the efficacy of general education programs and curriculum changes
- Demonstrate individual, class, and institutional proficiency

ANVUR TECO Testing

- Legal mandate to evaluate learning outcomes
- Translated and adapted CLA+ to Italian in 2013 and 2015
- Assessed over 11,000 exiting students across 23 universities

Zahner, D., & Ciolfi, A. (2018). International Comparison of a Performance-Based Assessment in Higher Education. In O. Troitschanskaia (Ed.), *Assessment of Learning Outcomes in higher education – Cross-national comparisons and perspectives*. (pp. 215-244). New York, NY: Springer.



England

- HEFCE funded pilot project to measure Learning Gains in universities across England
- Birmingham City University is leading a consortium of 4 partners (Coventry University, Liverpool John Moores University, Staffordshire University)
- University of Reading is participating independently, but collaborating with the BCU consortium
- Adapted testing platform and test items to British English
- Longitudinal and Cross-sectional testing model



Universidad de Guadalajara

- Translation and Adaptation of CLA+ to Spanish
- Assessment of learning outcomes for over 12,000 students across 55 bachelors degree programs
- Longitudinal and Cross-sectional
- Control Group (completed both EGEL and CLA+)



17 Universities in Finland

- Universities, applied sciences, art, and defense
- Cross-sectional testing model
- Translation and adaptation completed
- Cognitive labs completed
- Testing will begin August 2019



Akita International University

- Cross-sectional testing model
- Cohort 1: Incoming students during orientation
- Cohort 2: Exiting students approaching degree completion



African Leadership University

- Measuring Efficacy of a new degree program
- Longitudinal Testing
- Cohort 1: Incoming students during orientation and at the completion of Year 1
- Cohort 2: Students in Year 2 of Year 3 who have completed their core curriculum



Chilean Universities

- Universidad Autónoma de Chile was the first participant in 2018
- Pontificia Universidad Católica de Valparaíso & Universidad Bernardo O'Higgins are current participants
- Longitudinal and Cross-sectional testing models
- Spanish translations of the test content have been adapted for use in Latin America

POST-UNIVERSITY OUTCOMES STUDY 1

ZAHNER & JAMES, 2016

Post-University Outcomes, Study 1

- University seniors – CLA+ in spring 2014
- Surveyed 3, 6, and 12 months following graduation
- Approximately 13,000+ students
 - 1,585 agreed to participate in the survey
 - 993 persisted through all three phases

Post-University Outcomes, Study 1

Predictive Validity of CLA+ and Other Variables on Post-University Outcomes

		Post-university outcomes (all)	Salary	Employ	Full-time employ	Grad school
CLA+ and	EAA		*		*	
	Barron's				*	
	Field of study		*		*	
	Gender		*			
	Parent education					
	Race/Ethnicity	*	*	*	*	*

Post-University Outcomes, Study 1

- CLA+ is predictive of post-university outcomes such as employment and salary.
- Use of CLA+ scores can address some of the challenges employers and recent graduates face by highlighting these critical skills.
- Assessments like the CLA+ serve as both an effective instrument for identifying high-achieving students from less and non-competitive institutions and making their skills more visible to perspective employees.

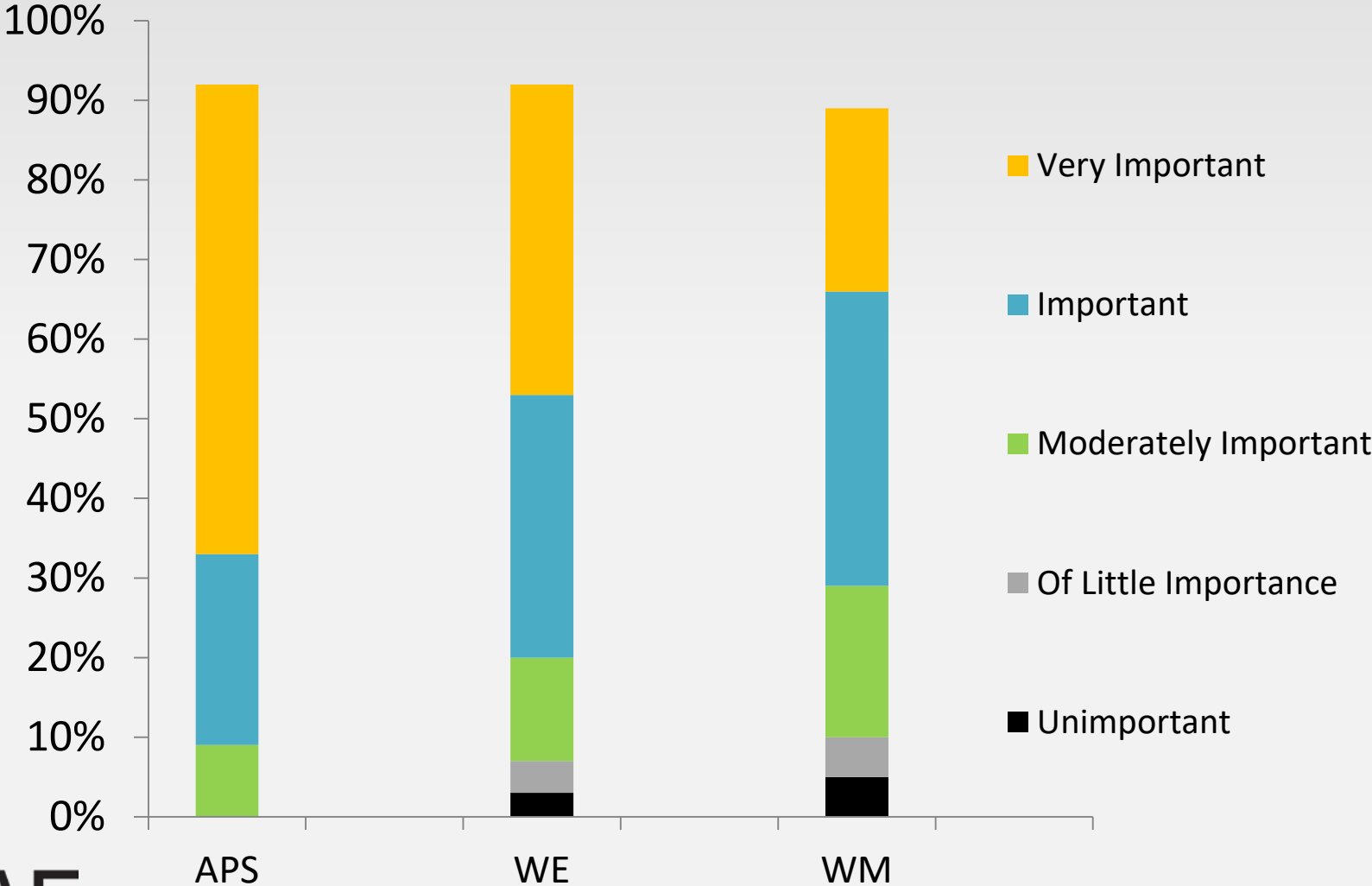
POST-UNIVERSITY OUTCOMES STUDY 2

ZAHNER & LEHRFELD, 2017

Post-University Outcomes, Study 2

- University seniors – took CLA+ in spring 2014
- Fall 2015 – Surveyed 75 employers of original cohort of students

Post-University Outcomes, Study 2



Post-University Outcomes, Study 2

Ordinal logistic regression models for predicting participants' post-university performance as measured by their managers' ratings.

		APS	WE	WM	Relative Rank
CLA+		*	*	*	*
	t-statistic	17.55**	26.00*	23.80**	16.56**

Post-University Outcomes, Study 2

- Employers find critical thinking and written communication skills to be important or very important for entry-level positions in the workforce.
- Students with higher CLA+ plus scores tended to have higher ratings from their employers
- Findings from this study offer support for the conclusion that critical-thinking and written-communication skills are important in predicting career placement and workplace success ([Arum & Roksa, 2014](#)).

FUTURE RESEARCH

Future Research & Development

- SkillMetric
- Predictive validity
- Efficacy of programs
- Construct equivalence across countries
- Educational policy impact (e.g., skills gap, leveling the playing field)



- 60 minute assessment of generic skills based on the CLA+
 - Performance Task (a real world problem) that is document based and requires students to demonstrate their analysis and problem solving skills (30 minutes)
 - 25 selected response questions (30 minutes)



Completed:

- Assessment development
- Scoring key
- Pilot testing
- Scoring
- Item and data analysis
- Scaling and equating
- Standard setting study



To be completed:

- Equivalency (to CLA+) study
- Development of new PTs
- Development of other generic skills (e.g., creativity)

QUESTIONS & COMMENTS