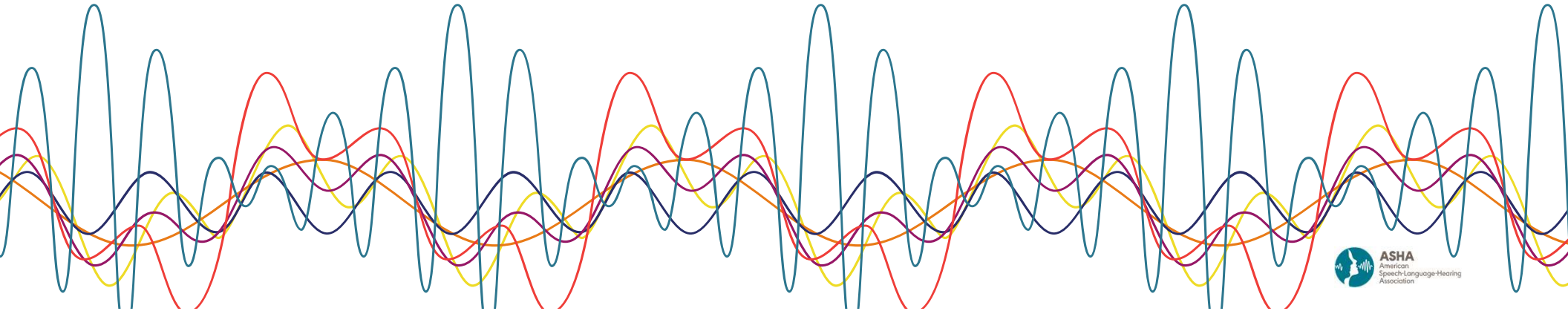
2019 Researcher-Academic Town Meeting



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2019 Researcher-Academic Town Meeting

Thank you to our contributing sponsor, ExQ!

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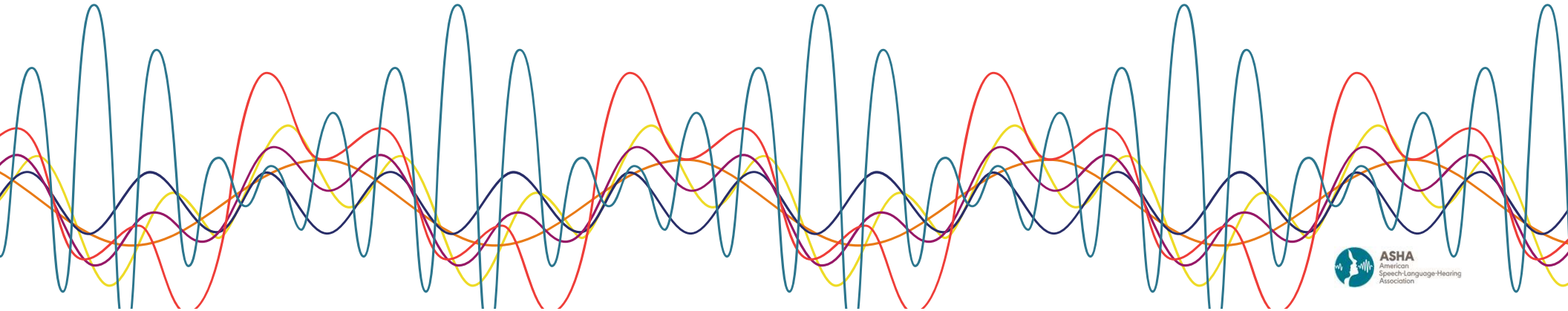
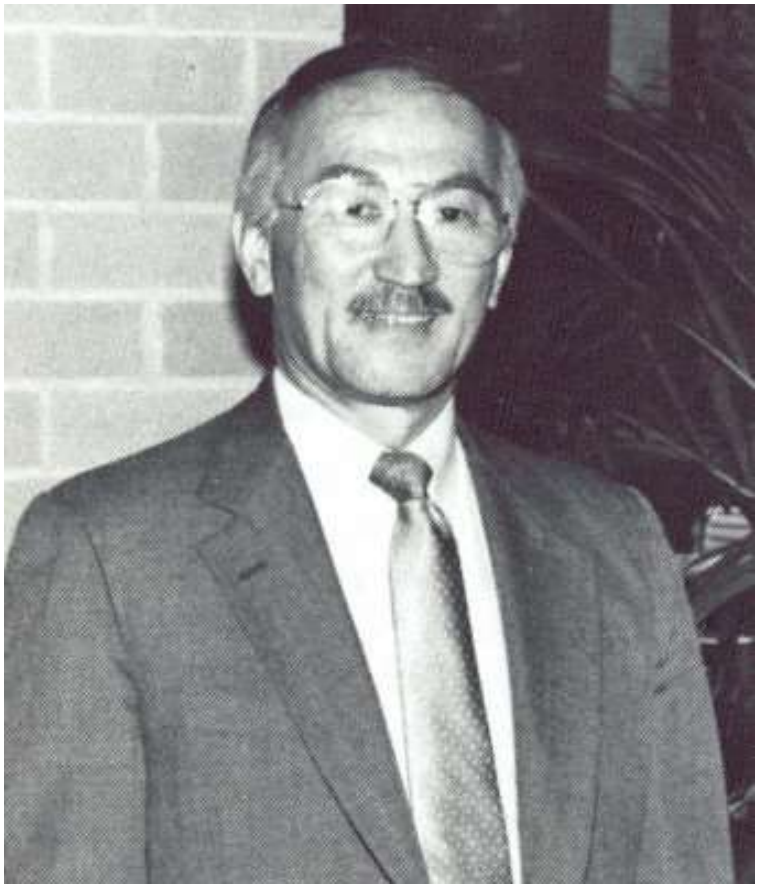
ASHA Journals Awards



Kawana Award for Lifetime Achievement in Publications

- Named in memory of the late Alfred K. Kawana, former director of ASHA publications, this award acknowledges the exceptional educational, scientific, or clinical value of the awardees' scholarly contributions.
- This award is reserved for outstanding researchers and scholars who have a sustained history of publication in the ASHA journals of at least 10 years.



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This Year's Winner

Robert E. Hillman

- Professor of Surgery at Harvard Medical School
- Co-Director and Research Director of the Center for Laryngeal Surgery and Voice Rehabilitation at the Massachusetts General Hospital (MGH Voice Center)
- Director of the Interdisciplinary PhD Program in Rehabilitation Sciences at the MGH Institute of Health Professions
- Specialist in voice and voice disorders
- Over 35 contributions to the ASHA Journals
- ASHA Honors (2011)
- ASHA Fellow
- ASHA Journals Editor's Award (1996)

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Editor's Awards

- Selected by the editors and editor-in-chief of each journal or journal section
- Awarded annually to the authors of the most meritorious article published in the preceding year

Past winners pubs.asha.org/journals/editors_awards

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American Journal of Audiology

Predictive Factors for Vestibular Loss in Children With Hearing Loss

Authors
Kristen L. Janky
Megan L. A. Thomas
Robin R. High
Kendra K. Schmid
Oluwaseye Ayoola Ogun

Editor-in-Chief
Sumit Dhar

ASHA
American Speech-Language-Hearing Association

American Journal of Speech-Language Pathology

Children's Consonant Acquisition in 27 Languages: A Cross-Linguistic Review

Authors
Sharynne McLeod
Kathryn Crowe

Editor-in-Chief
Julie Barkmeier-Kraemer

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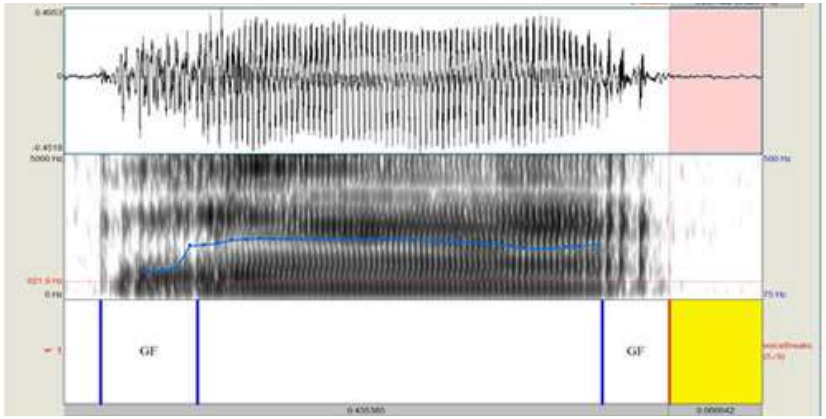
Journal of Speech, Language, and Hearing Research—Speech Section



Acoustic Predictors of Pediatric Dysarthria in Cerebral Palsy

Authors
Kristen M. Allison
Katherine C. Hustad

Editor-in-Chief
Bharath Chandrasekaran

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Journal of Speech, Language, and Hearing Research—Language Section

Well-Being and Resilience in Children With Speech and Language Disorders

Authors
Rena Lyons
Sue Roulstone

Editor-in-Chief
Sean Redmond

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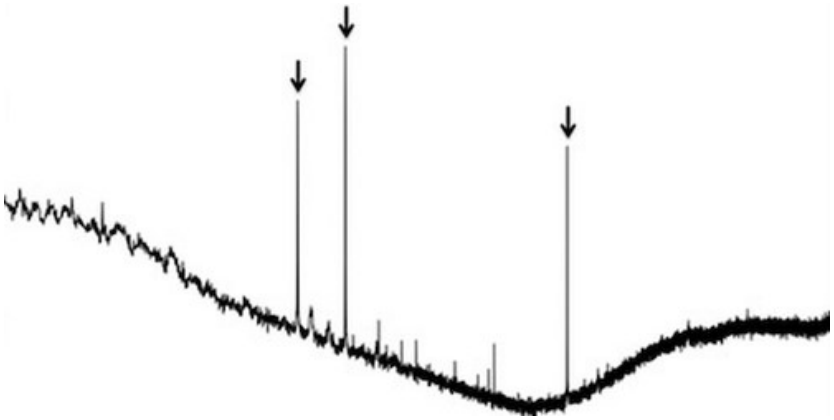
Journal of Speech, Language, and Hearing Research—Hearing Section



Spontaneous Otoacoustic Emissions Reveal an Efficient Auditory Efferent Network

Authors
Viorica Marian
Tuan Q. Lam
Sayuri Hayakawa
Sumitrajit Dhar

Editor-in-Chief
Frederick Gallun

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Language, Speech, and Hearing Services in Schools

The Impact of Dialect Density on the Growth of Language and Reading in African American Children

Authors
Julie A. Washington
Lee Branum-Martin
Congying Sun
Ryan Lee-James

Editor-in-Chief
Holly Storkel

ASHA
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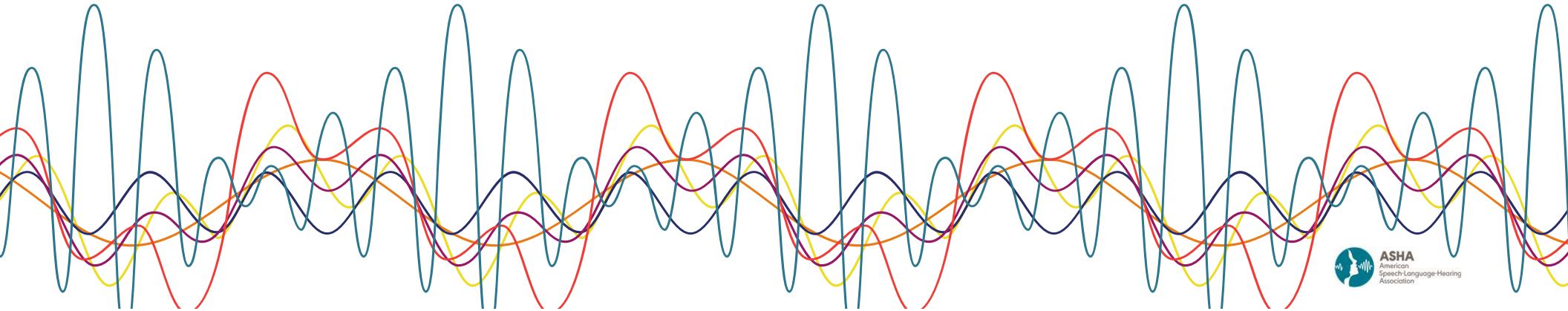
2019 Researcher-Academic Town Meeting



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Disclosure
Robert Augustine
Council of Graduate Schools

Financial Disclosure:

- I am employed by the Council of Graduate Schools, and it publishes documents that I co-author.

Non-financial Disclosure:

- I publish with the co-authors who work at the Council of Graduate Schools.

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Disclosure
Patrick Finn
University of Georgia

Financial Disclosure:

- I do not have any financial disclosures related to this presentation.

Non-financial disclosures:

- Editor-in-Chief, Group 4 Perspectives of the ASHA Special Interest Groups
- Chair, CAPCSD Task Force on Critical Thinking

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Disclosure
Ou Lydia Liu
Educational Testing Service (ETS)

Financial Disclosure:

- I am employed by Educational Testing Service (ETS)
- I received a travel stipend for participating in this presentation.

Non-financial Disclosure:

- I do not have any non-financial disclosures related to this presentation.

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Master's Admissions Transparency, Guidance, and Training

Findings from the 2018 Study on
Master's Degree Admissions

Robert M. Augustine
Council of Graduate Schools
Washington, DC

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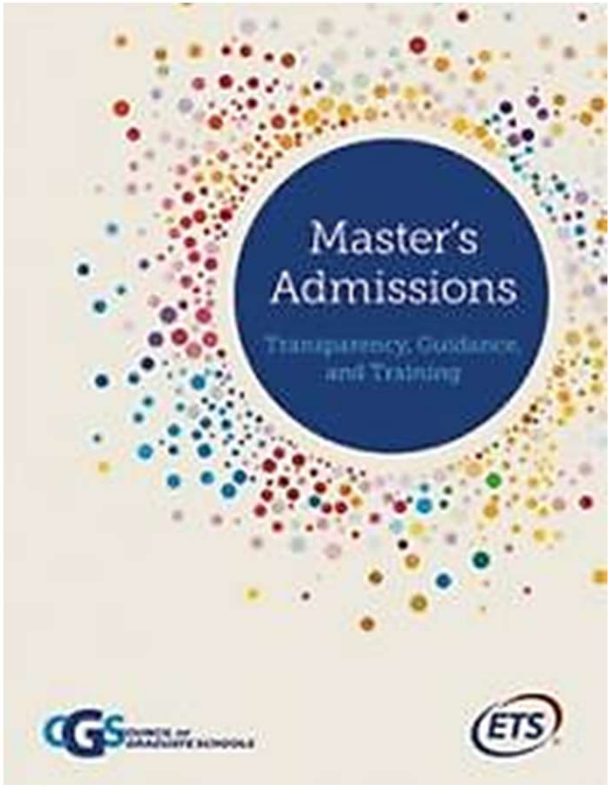
2018

Master's Admissions

Okahana, Augustine & Zhou



2016

Holistic Review in Graduate Admissions

Kent and McCarthy

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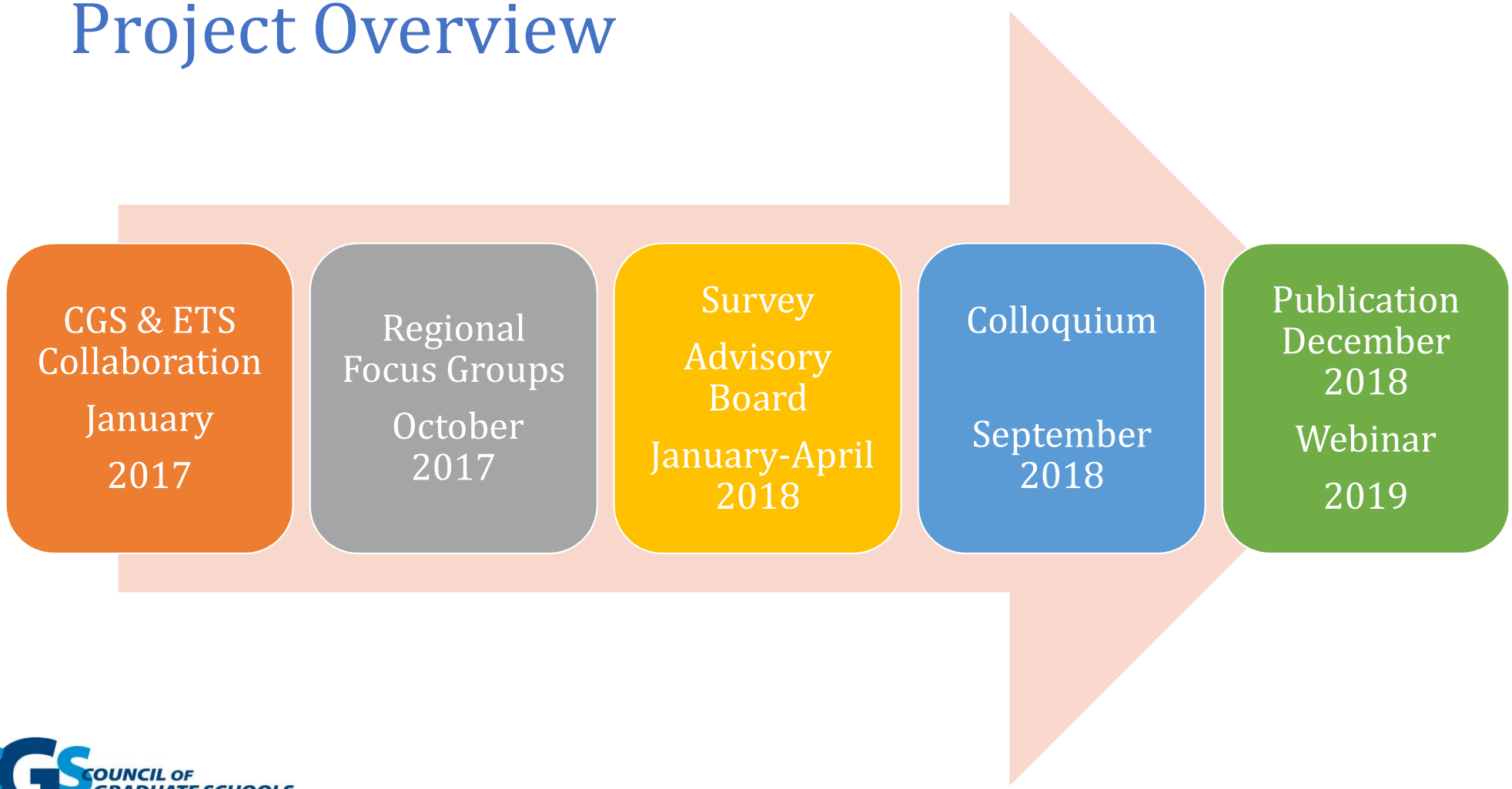
Project Overview



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Master's Admissions Research Questions

1. What is the focus of ***success*** in a master's program during admissions?
2. What admission ***attributes*** predict that success?
3. What admission ***evidence*** evaluates the attributes?
4. What are the ***barriers and limitations***?
5. What guidelines and training inform ***admission practices?***
6. What are the implications for ***admission practices and future research***?

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Question 1
What is the focus of ***success*** in a master's program at the time of admission?

Rate 17 Success Options Distributed Among 3 Categories

1. Degree Completion Success
   - Completion of Coursework
   - Fulfill Internship Requirements, Etc.
2. Program Fit Success
   - Adhere to Professional Norms and Ethics
   - Contribute to Diversity, Etc.
3. Post Graduate Success
   - Earn the License
   - Secure Employment, Etc.

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Potential for Completing the Degree Aligned with Completion of Coursework

Rated as the most Important Success Milestone that Master's Programs Look for in Their Applicants during Master's Admission

Key Finding 1

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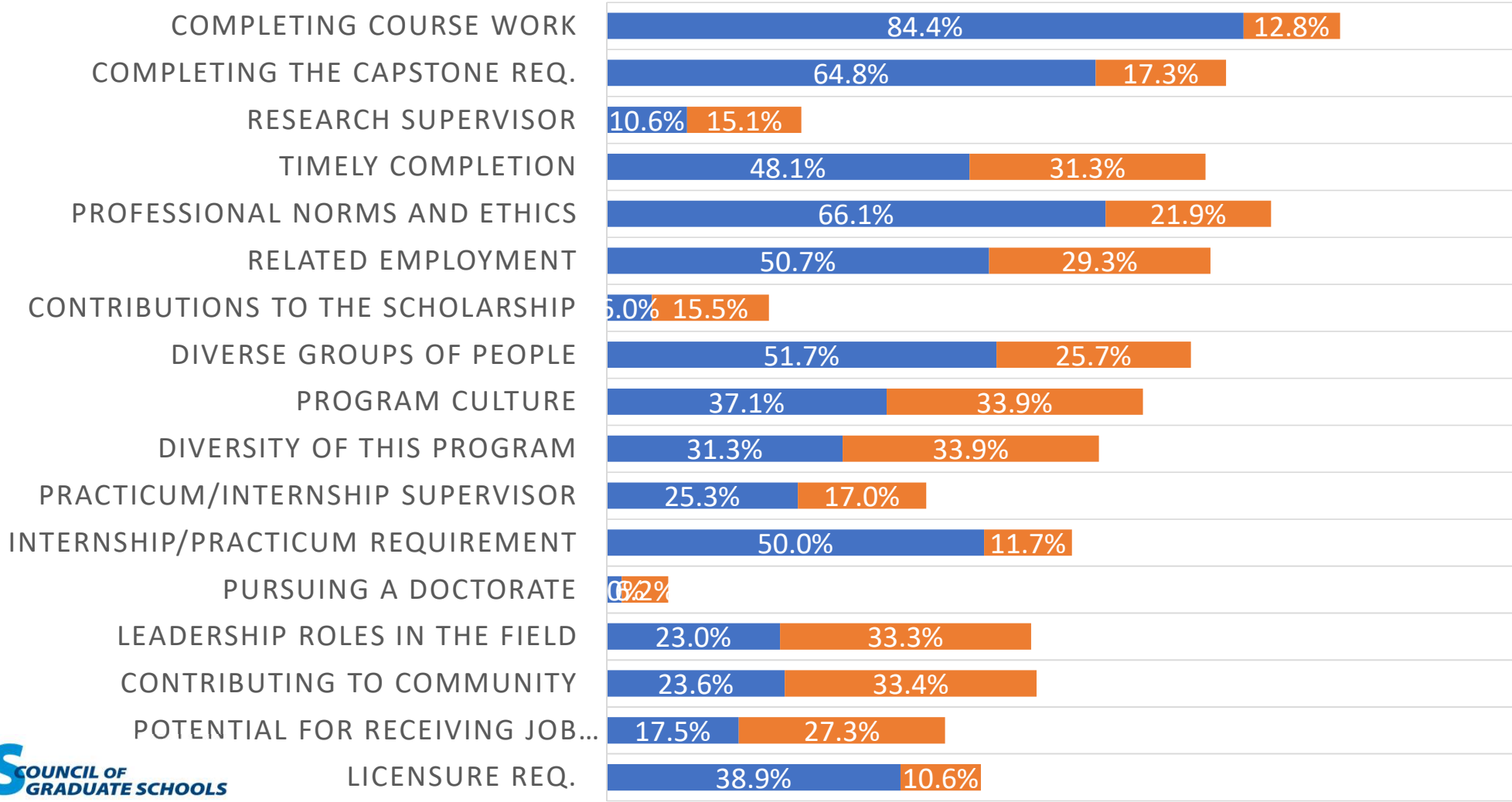
Professionally Focused Master's Programs



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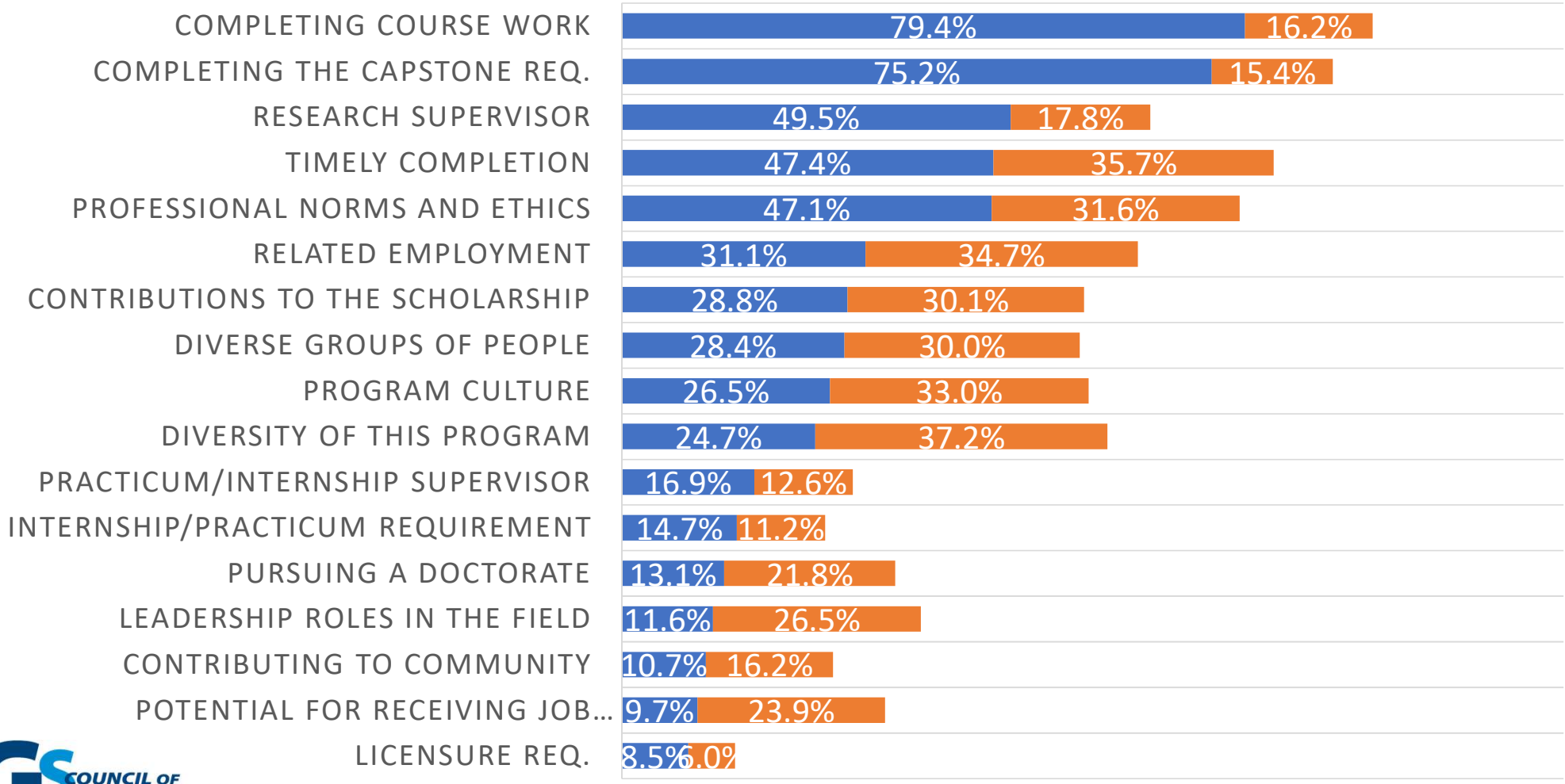
Research Focused Master's Programs



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Question 2
What admission attributes predict this success?

Rate 22 Attributes in Two Categories

1. Cognitive Attribute Examples
   - Critical Thinking
   - Analytical Thinking
   - Written Communication
2. Non-Cognitive Attribute Examples
   - Professionalism
   - Integrity
   - Leadership

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Critical Thinking and Analytical Thinking

Are the Most Important Attributes and Qualities of Applicants that Master's Programs Associate with Applicants' Potential to Meet Key Success Milestones for Master's Education

Key Finding 2

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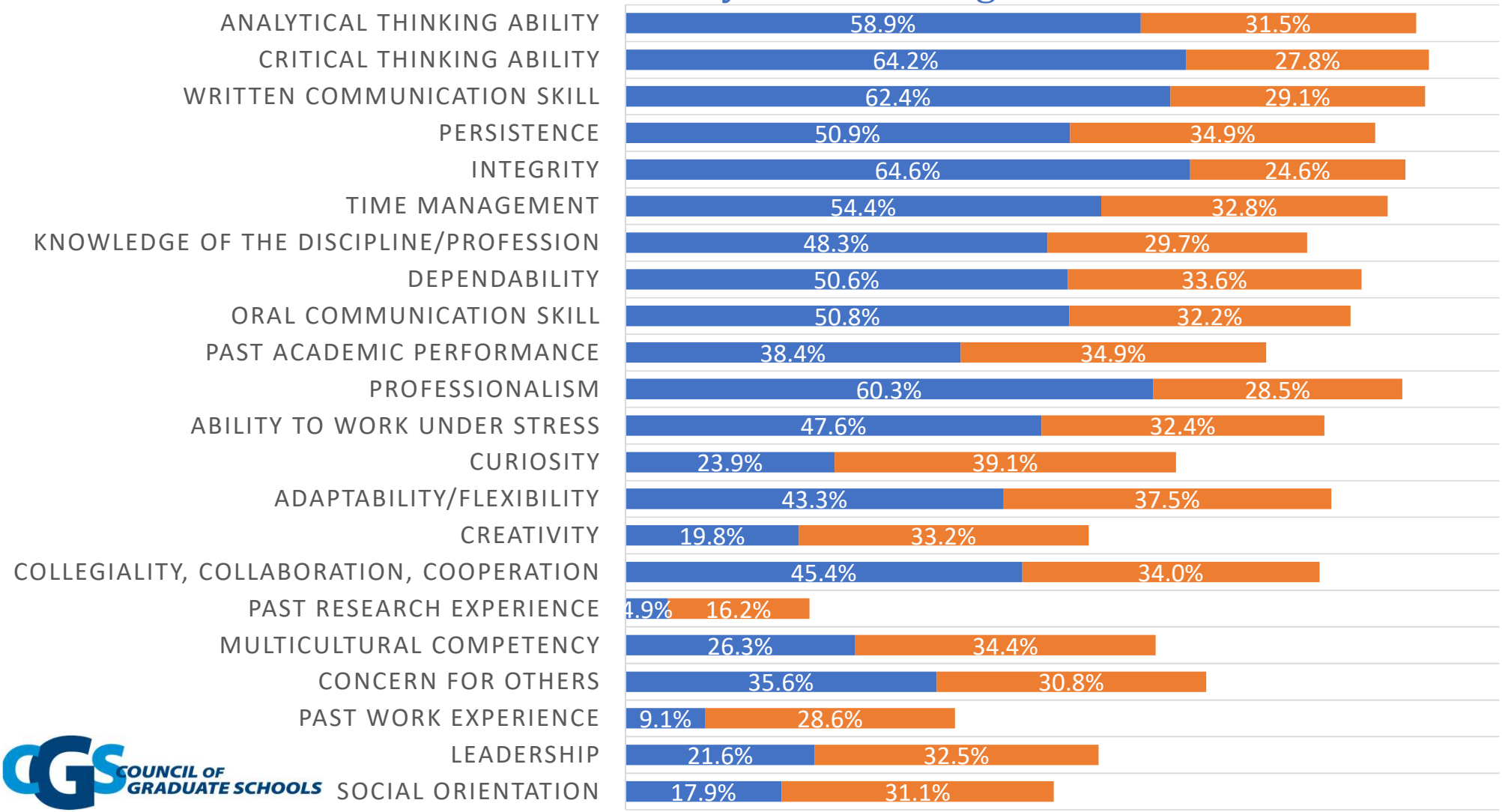
Professionally Focused Programs



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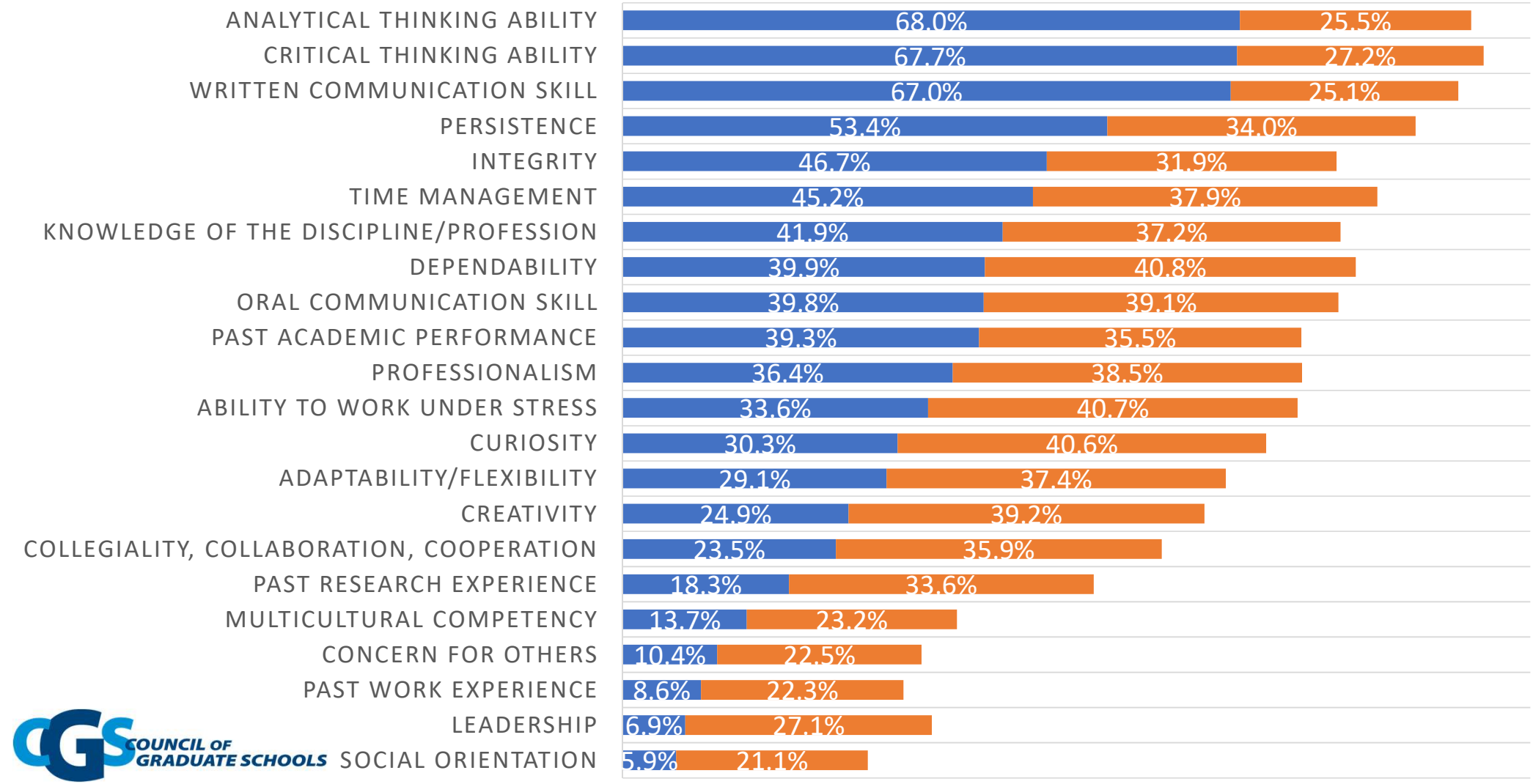
Research Focused Programs



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Question 3
What admission evidence evaluates the attributes that predict this success?

Align 7 Types of Evidence with the 22 Attributes

1. Academic Transcripts
2. Upper Division GPA
3. Standardized Test Scores
4. Resume or CV
5. Personal Statements
6. Letters of Recommendation
7. Other Materials: Interviews, Presentations, Etc.

Letters of Recommendations
and
Personal Statements

Are Used to Weigh a Wide Range of Cognitive and Non-cognitive Attributes During the Admissions Process

Key Finding 3

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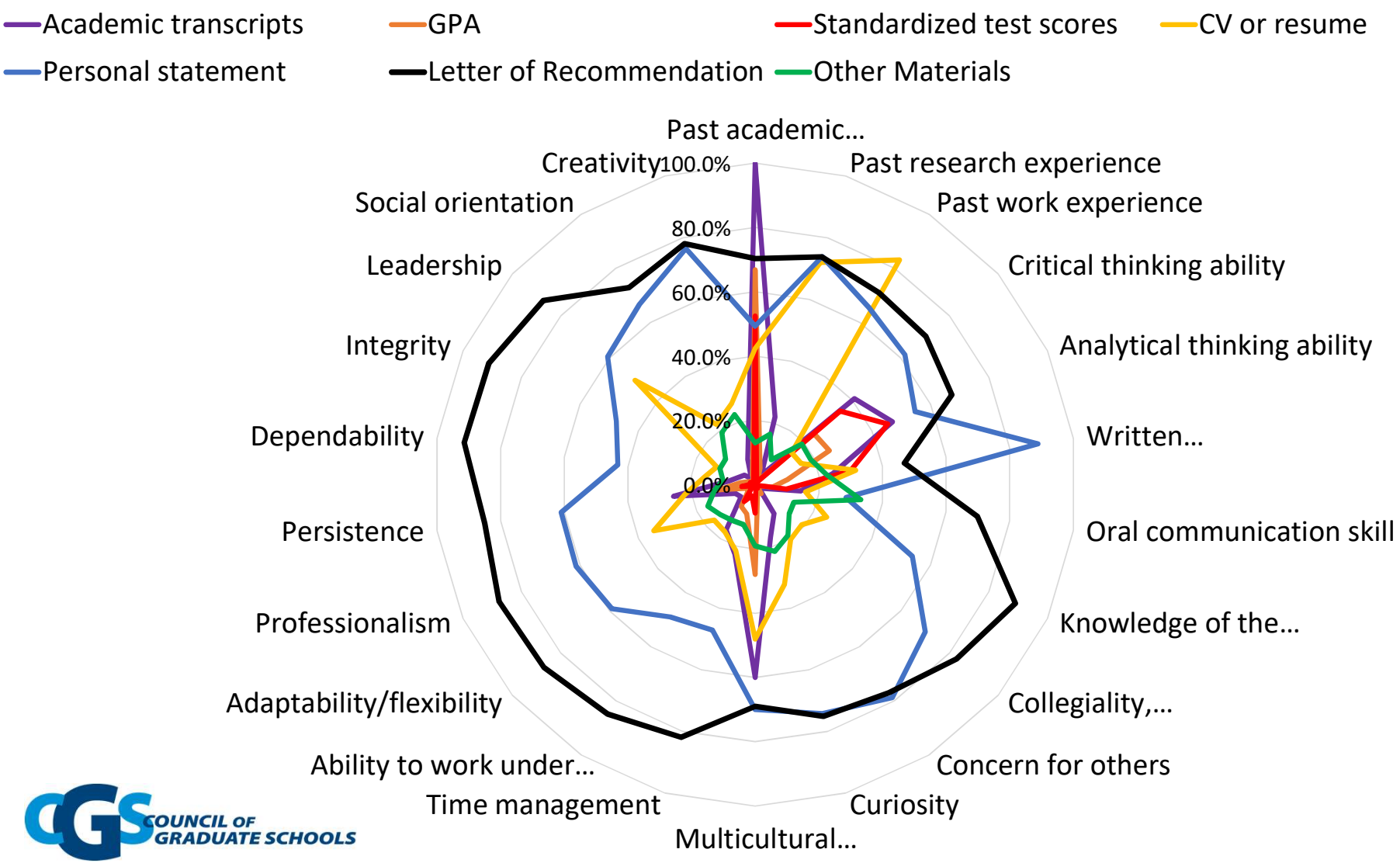

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Question 4
What are the limitations or barriers for predicting this success?

Rate 10 Options + "Write In"

1. Limited Resources – Staff and Faculty Time
2. Inadequate Data
3. Lack of Training
4. Lack of Formal Rubrics & Guidelines
5. Limited Resources – Technology Support
6. Concerns for Rankings
7. Concerns for Regional Accreditation
8. Other Concerns
9. Other Resource Concerns
10. Compliance with Legal Requirements

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Limitations & Barriers

Resources -- Staff & Faculty Time
Needed to Develop Linkages to Strengthen the Relationships Between Attributes and Success.

Inadequate Data
Predictive Linkages Between Non-Cognitive Attributes and Success

Lack of Training
Use Best Practices

Key Finding 4

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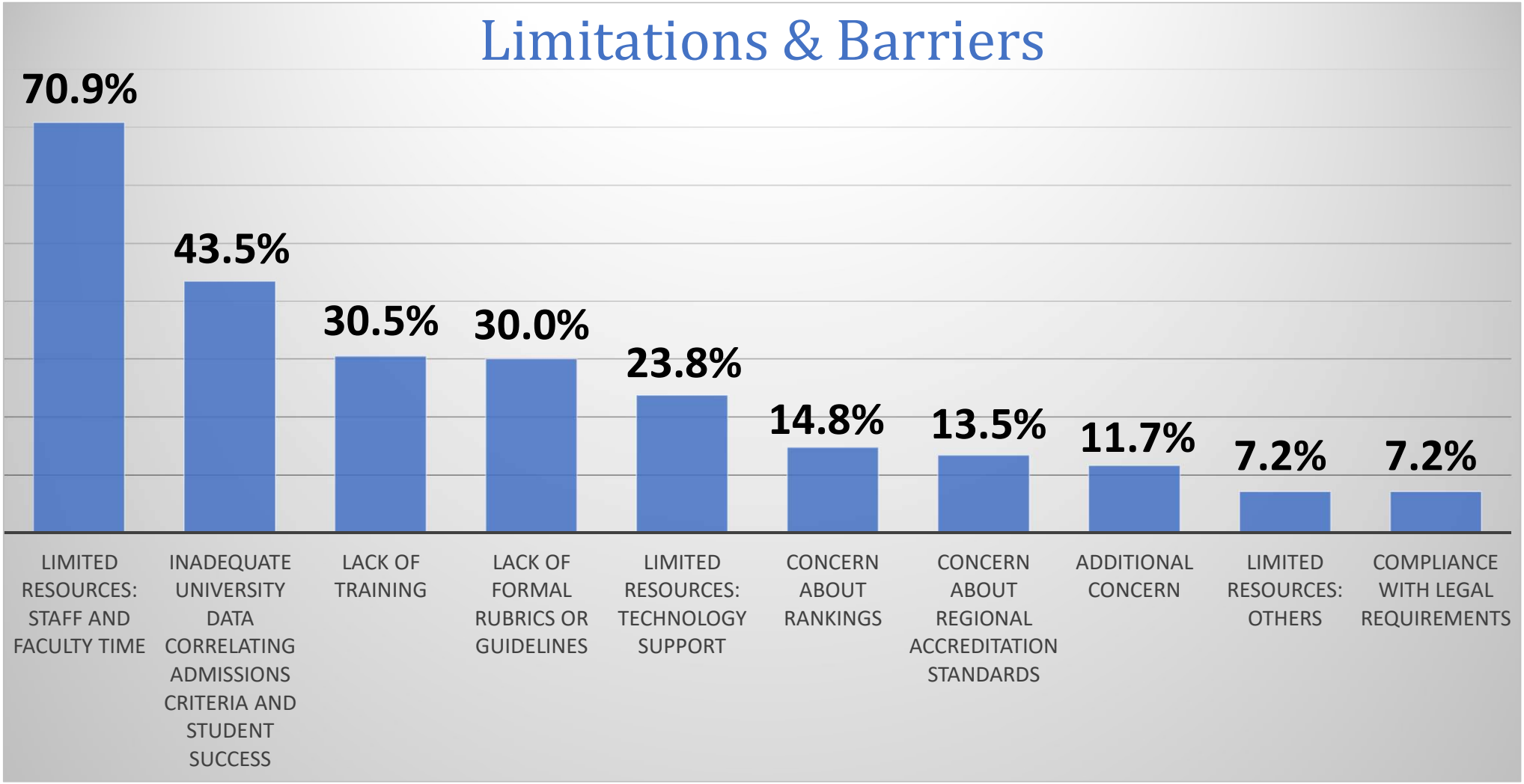
Limitations & Barriers



Question 5
What guidelines and training inform ***admission practices?***

Align Standard Credential Interpretation Guidelines with Guideline and Training Providers

1. Institutional Guidelines and Training
2. Program Guidelines and Training
3. No Guidelines and Training
4. Not Applicable

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Lack of Training

Few Graduate Schools or Programs Offer Training in the Use of Guidelines, Rubrics, Algorithms or Practices for Obtaining and Interpreting Data to Support Preparation for Admission Review

30% of Master's Programs have no Formal Application Review Guidelines

Key Finding 5

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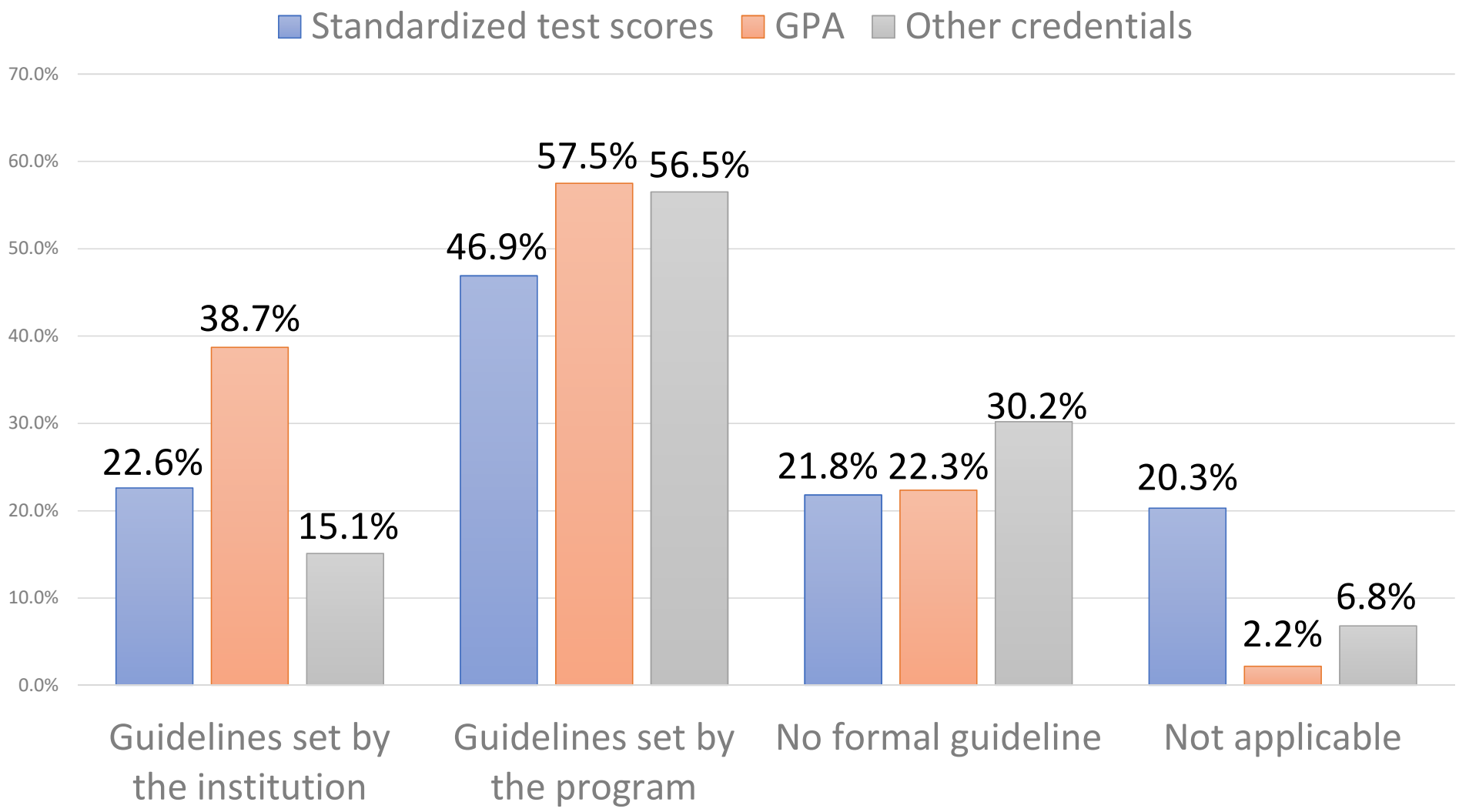
Standardized test scores
GPA
Other credentials
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
22.6%
38.7%
15.1%
46.9%
57.5%
56.5%
21.8%
22.3%
30.2%
20.3%
2.2%
6.8%
Guidelines set by the institution
Guidelines set by the program
No formal guideline
Not applicable

Question 6
What are the implications for ***admission practices and future research***?

Practices & Research

- Master's Admissions Okahana, Augustine & Zhou (2017)
- Kent & McCarthy (2016)
- Other sources

Promising Practices

Transparency
Guidance: Countering Biasing Elements
Training

Key Findings 6

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Future Admissions Research

- Non-Cognitive Attributes
  - Predictive Potential of Non-Cognitive Attributes
- Evidence Centered Design Effects
  - Adjusting Admission Practices Following Each Admission Cycle: Continuous Review
- Cohort Admission Effects ("Posse Initiative")
  - Admission of Cohorts vs. Individuals
- Career Outcomes Study
  - Connecting Admission Decisions to Long Term Career Outcomes

ASHA National Convention

Assessing Critical Thinking in Higher Education

Lydia Liu, Ph.D.
Senior Research Director
Academic to Career Research Center
ETS

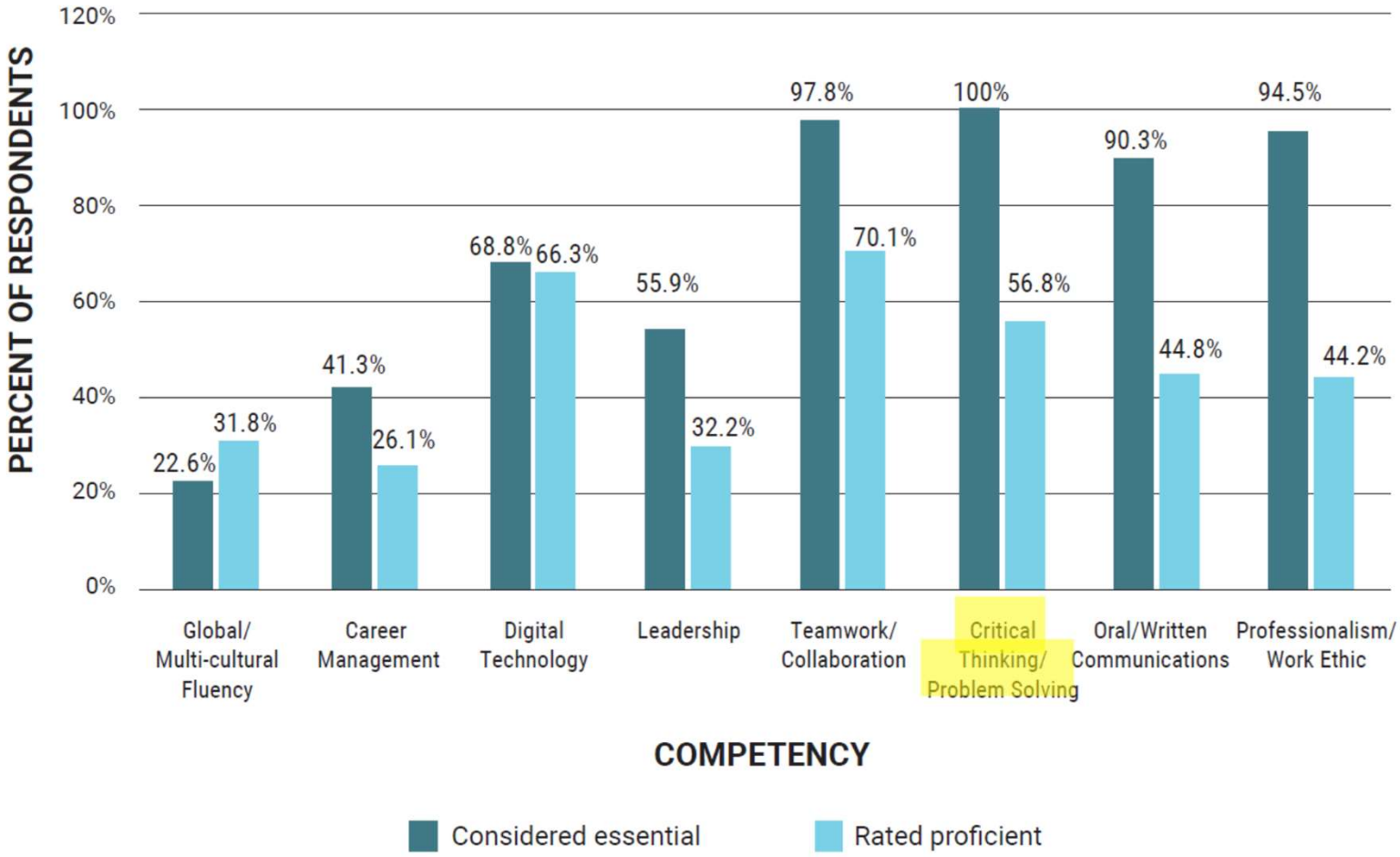
Orlando, Florida
November 20 2019

Survey of Higher Education Institutions

- Survey of 1,001 American institutions

Proportion of Institutions That Have Learning Outcomes for All Students That Address Specific Skills and Knowledge Areas *(among institutions that have a common set of learning outcomes for all students)*[1]	2008 %	2015 %
Intellectual Skills		
Writing skills	99	99
Critical thinking and analytic reasoning skills	95	98
Quantitative reasoning skills	91	94
Oral communication skills	88	82
Intercultural skills and abilities	79	79
Information literacy skills	76	76
Ethical reasoning skills	75	75

Hart Research Associates (2016). Trends in learning outcomes assessment.



National Association of Colleges and Employers (2018). Job Outlook Survey.

McKinsey Global Institute: Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation (Nov 2017)

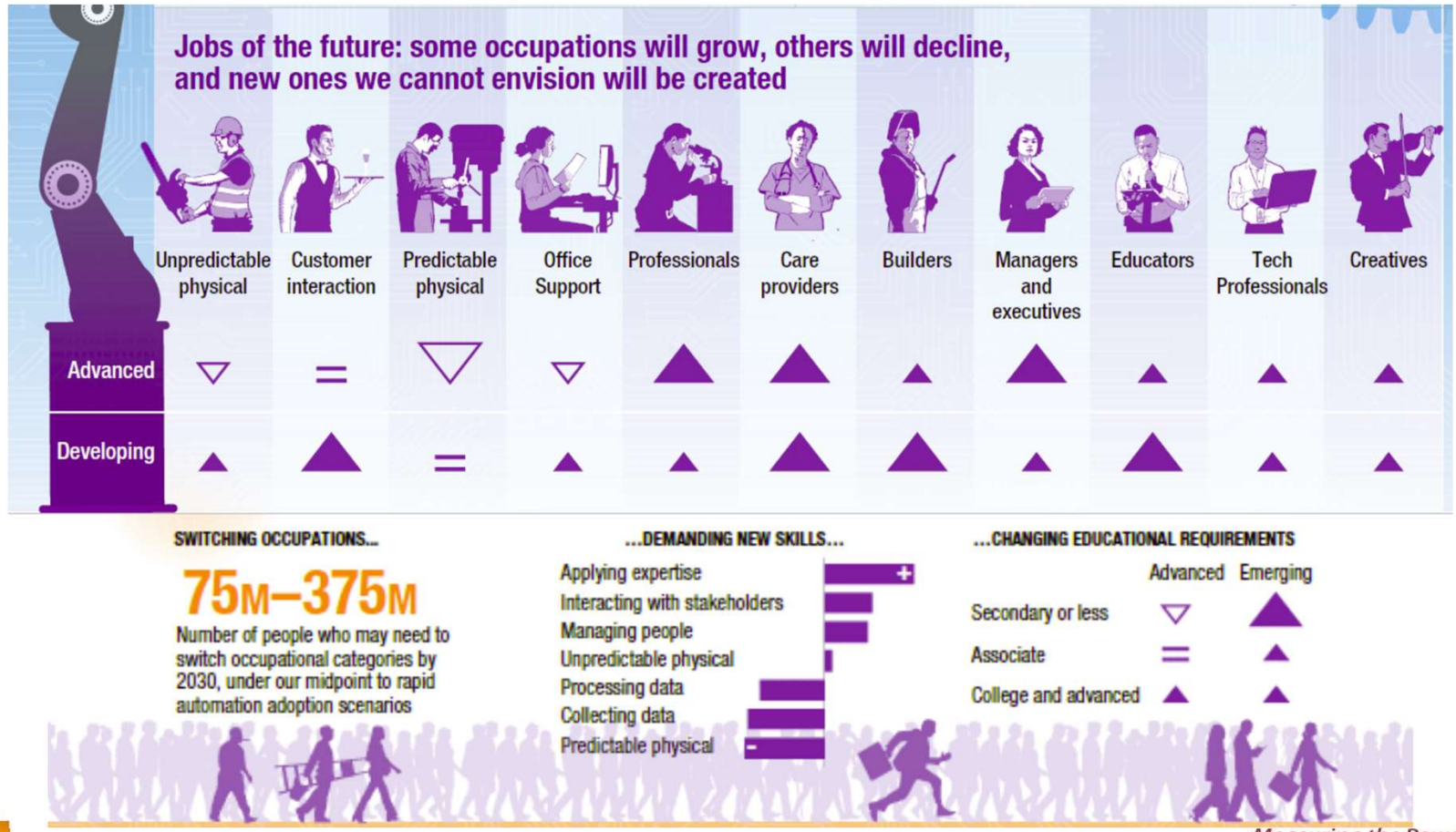


Exhibit 4

Social and emotional skills will grow rapidly, along with technological skills and some advanced cognitive skills, while basic cognitive and manual skills will decline.

Based on McKinsey Global Institute workforce skills model

Low High

Category	Skill	United States, all sectors: Hours worked in 2016, billion	United States, all sectors: Change in hours worked by 2030, %	Western Europe, all sectors: Hours worked in 2016, billion	Western Europe, all sectors: Change in hours worked by 2030, %
Physical and manual skills	General equipment operation and navigation		-24		-27
	General equipment repair and mechanical skills		-9		-11
	Craft and technician skills		-2		-21
	Fine motor skills		-8		-15
	Gross motor skills and strength		-9		-10
	Inspecting and monitoring skills		-20		-25
Basic cognitive skills	Basic literacy, numeracy, and communication		-6		-8
	Basic data input and processing		-19		-23
Higher cognitive skills	Advanced literacy and writing		-10		-8
	Quantitative and statistical skills		-2		2
	Critical thinking and decision making		17		8
	Project management		2		3
	Complex information processing and interpretation		18		18
	Creativity		40		30
Social and emotional skills	Advanced communication and negotiation skills		27		26
	Interpersonal skills and empathy		30		21
	Leadership and managing others		33		27
	Entrepreneurship and initiative-taking		33		32
	Adaptability and				

Master's Admissions: Transparency, Guidance, and Training (2018)

Figure 6. Percentage Shares of Master's Programs Indicating Applicants' Attributes as "Very Important" in Determining their Potential for Degree Completion by Selected Field of Study

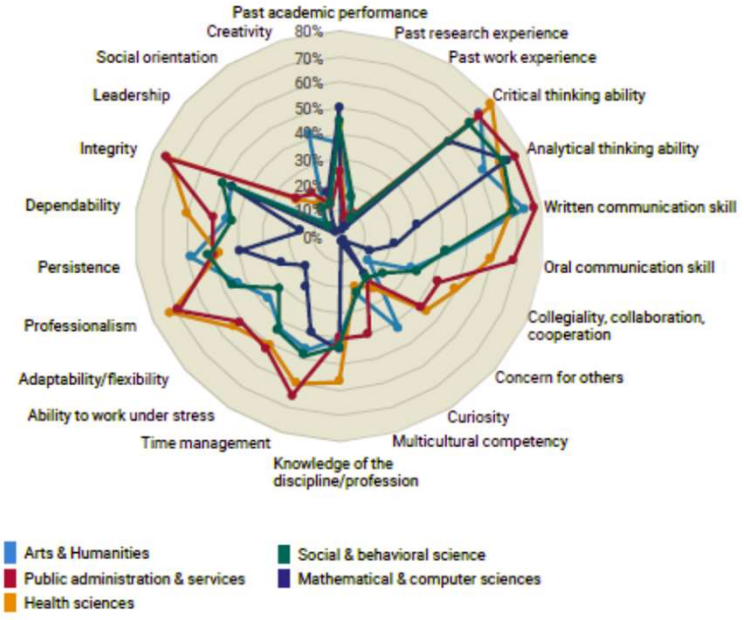
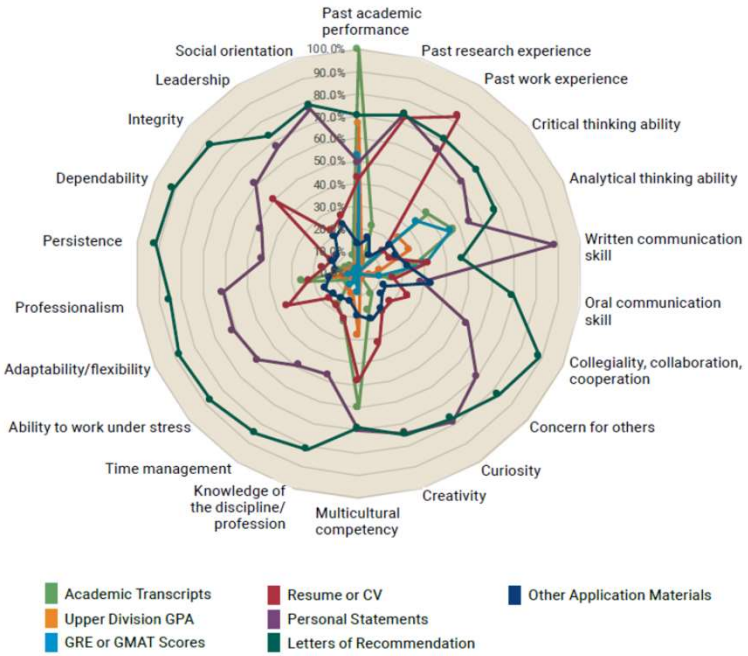
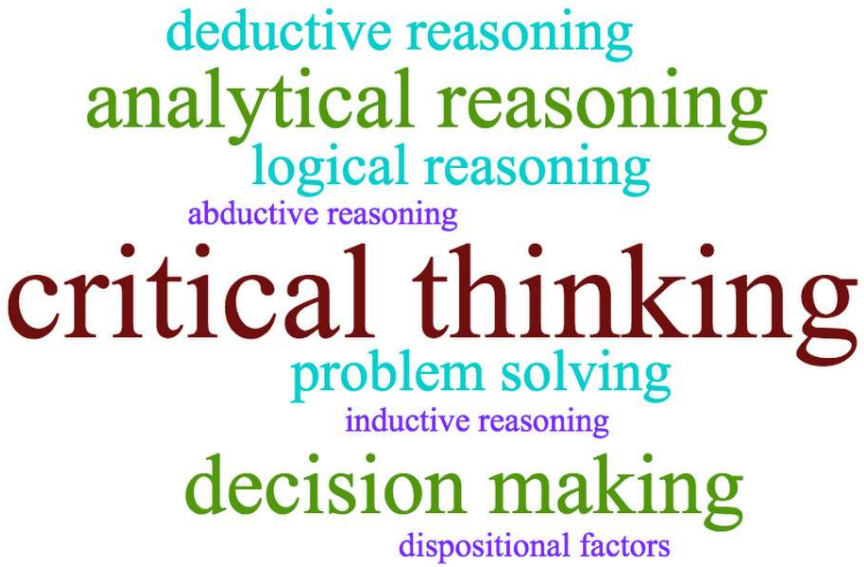


Figure 7. Percentage Shares of Master's Programs Indicating the Use of Selected Application Materials to Weigh Applicants' Attributes



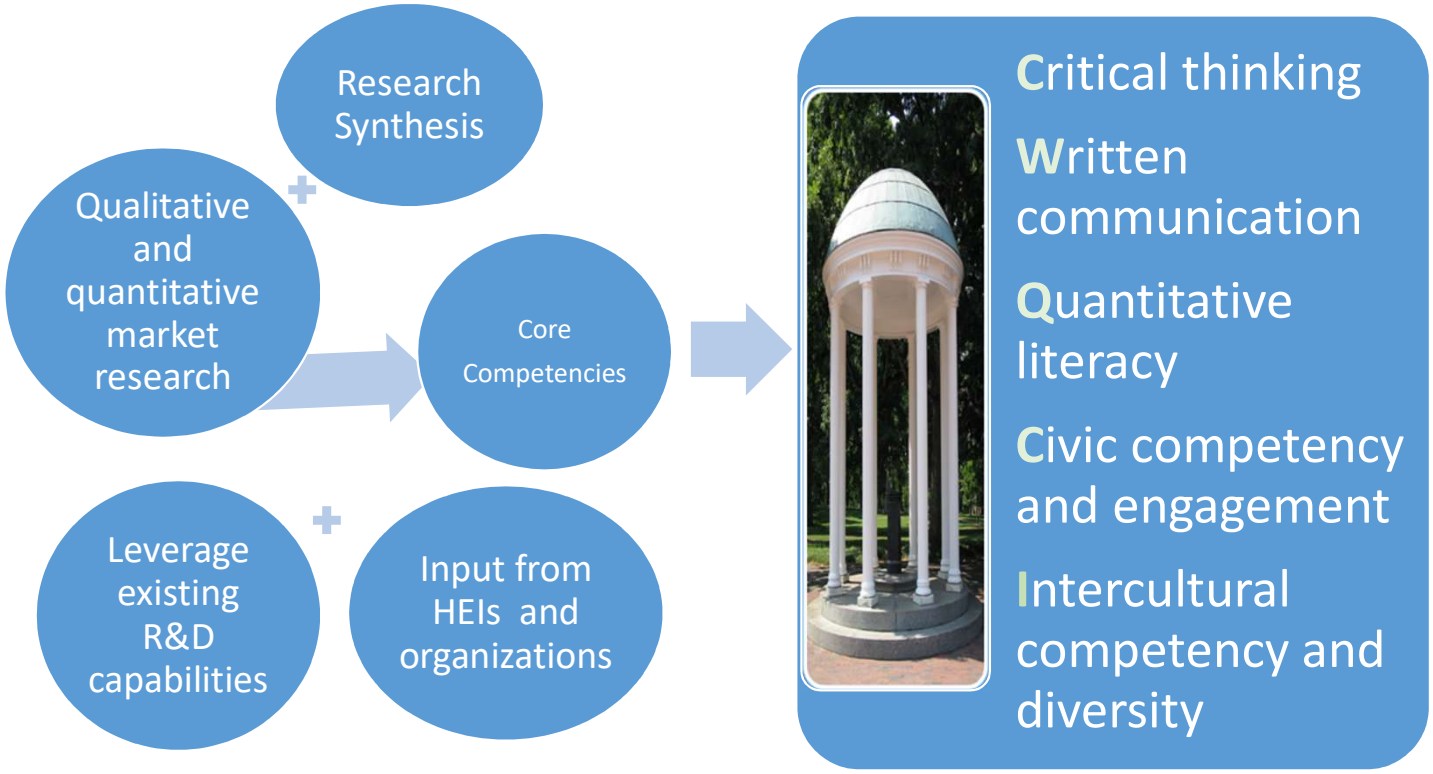
What's Critical Thinking?

- Multidimensional
- Complex



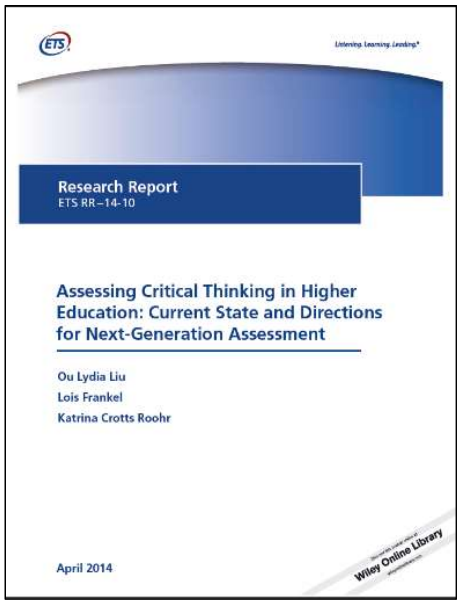
From Frameworks to Assessment

ETS HEIghten Research and Assessment Initiative



A Research-Driven Approach to Assessment Design

Review of influential frameworks	Review of existing assessments	Operational definition	Assessment considerations



Framework	Author	Critical Thinking (or equivalent) Definition
Assessment & Teaching of 21st Century Skills (ATC21S)	Collaboration among Cisco, Intel, and Microsoft	Reason effectively, use systems thinking and evaluate evidence: understand systems and strategies for **tackling unfamiliar problems**; understand the **importance of evidence** in belief formation; reevaluate beliefs when presented with conflicting evidence (Binkley et al., 2009)
Degree Qualifications Profile (DQP)	The Lumina Foundation	Analytic Inquiry – identifies, categorizes and distinguishes among ideas, concepts, theories and practical approaches to problems; differentiates and evaluates theories and approaches to **complex standard and non-standard problems** within his/her major field; disaggregates, adapts, reformulates and employs in an essay or project principal ideas, techniques or methods at the forefront of the field (Adelman, Ewell, Gaston, & Scheinder, 2011)
The Employment and Training Administration (ETA) Industry Competency Model Clearinghouse	U.S. Department of Labor (USDOL)	One who possesses **sufficient inductive and deductive reasoning** ability to **perform job successfully**; critically reviews, analyzes, synthesizes, compares and interprets information; draws conclusions from relevant and/or missing; understands the principles underlying the relationship among facts and applies the information in understanding when solving problems (USDOL, 2013)
European Higher Education Area Competencies (Bologna Framework)	European Commission: European Higher Education Area	Critical analysis, evaluation and synthesis of new and complex ideas (EACEA, 2012)
Framework for Higher Education Qualifications (QAA-FHEQ)	Quality Assurance Agency for Higher Education	Ability to evaluate the **appropriateness of different approaches to solving problems** related to area(s) of study and/or work; use a range of techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis; critically **evaluate arguments**, assumptions, abstract concepts and data (that may be incomplete), to make judgments, and to frame appropriate questions to achieve a solution – or identify a range of solutions – to a problem (QAA, 2008)
Framework for Learning and Development Outcomes (CAS Standards)	The Council for the Advancement of Standards in Education	Identifies important problems, questions, and issues; analyzes, interprets, and makes judgments of the relevance and quality of information; assesses assumptions and considers alternative perspectives and solutions (CAS Board of Directors, 2008)
Liberal Education and America's Promise (LEAP)	Association of American Colleges and Universities	**A habit of mind** characterized by the **comprehensive exploration** of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion (Rhodes, 2010)

Operational Definition: HEIghten Critical Thinking Assessment

Analytical Dimensions

Evaluate evidence and its use

Evaluate the evidence itself, including its larger context, its relevance to the argument, appropriateness of sources, and possibilities of bias.

Analyze and evaluate arguments

Understand/assess the structure of the argument, independent of the evidence offered. Identify stated and unstated premises, conclusions, intermediate steps. Understand the language of argumentation, recognizing linguistic cues. Distinguish valid from invalid arguments, including recognizing structural flaws that may be present in an invalid argument, e.g., "holes" in reasoning.

Synthetic Dimensions

Understand implications and consequences

Identify unstated conclusions or implications and consequences that go beyond the original argument.

Develop sound and valid arguments

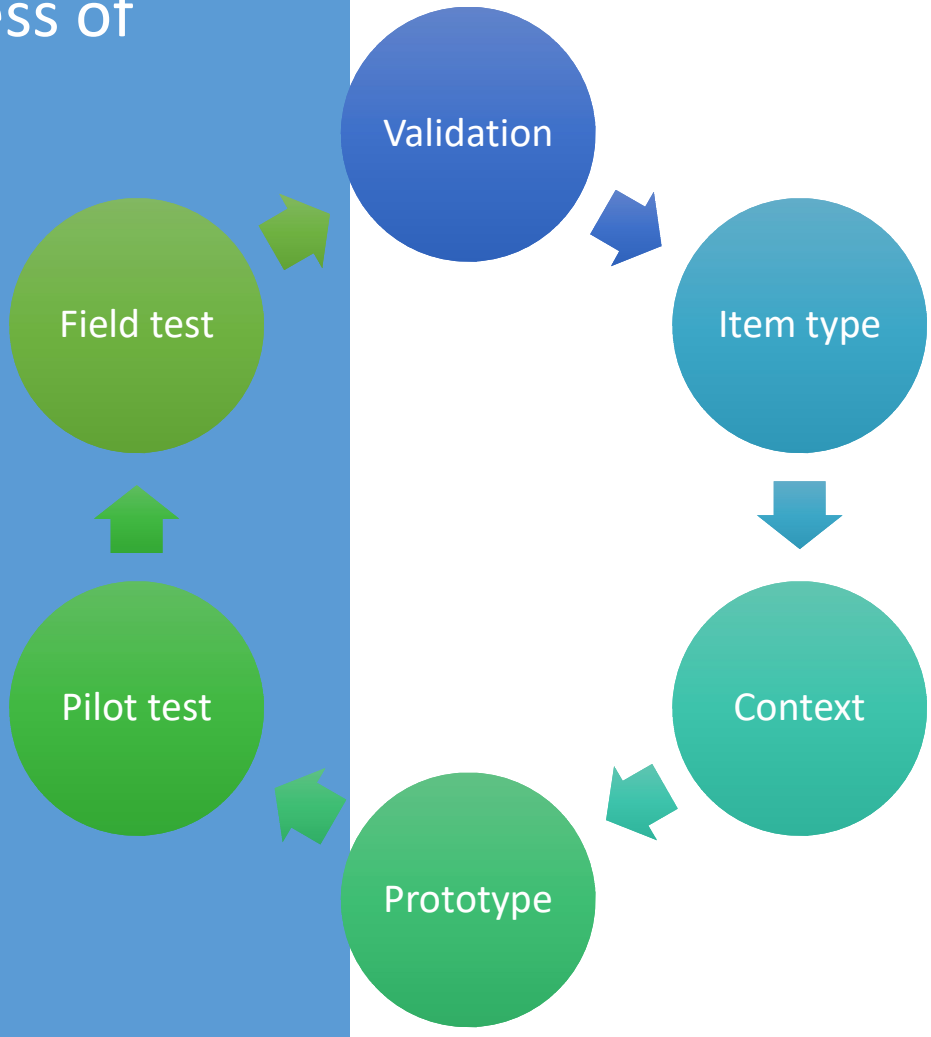
Students should be able not only to understand and evaluate arguments made by others, but to develop their own arguments which are valid (based on good reasoning) and sound (valid and based on good evidence).

Causation / Explanation

Generate or Evaluate causal claims / Generate or Evaluate explanations

Applicable to and works with all of the analytical and synthetic dimensions: it can involve considerations of evidence, implications, argument structure, as well as either evaluation or argument production.

Iterative Process of Assessment Development



Other Important Components

Score reports

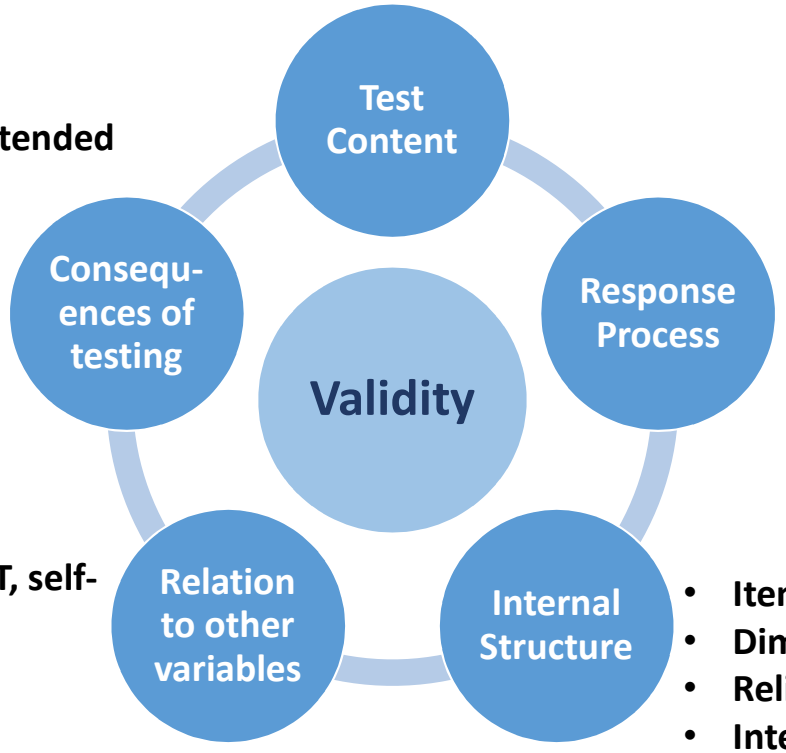
- Total score and subscale scores
- Proficiency levels

Others

- No more than 45 mins
- Modular
- Online
- Accessibility

Validation

- Carefully designed framework
- Items mapped to construct



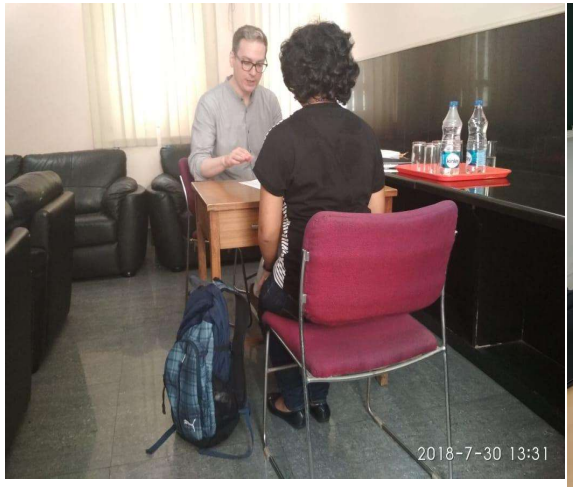
- Intended and unintended consequences
- New use cases

- Cognitive interviews
- Student survey
- Response time
- Delivery mode
- Motivation

- Relation to GPA, SAT, self-evaluation, similar measures, relevant experience, etc.

- Item analysis
- Dimensionality analysis
- Reliability
- International scale


2018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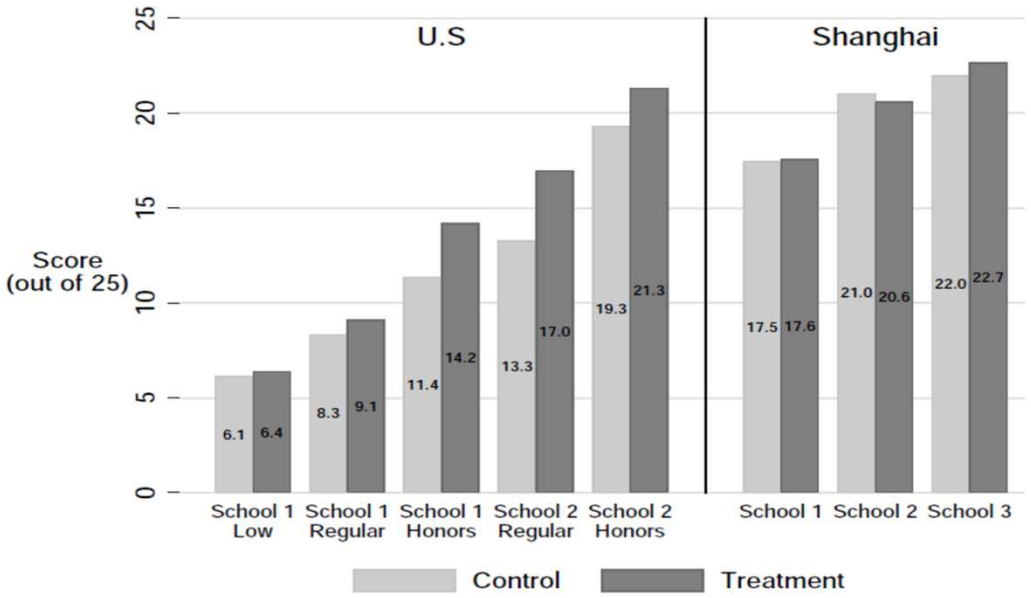
Gneezy et al. (2017)

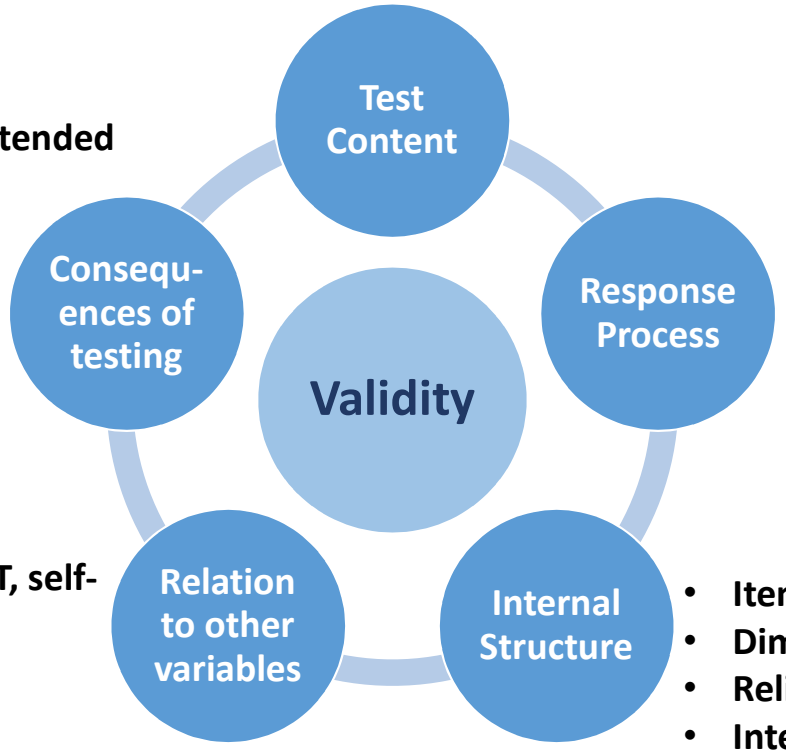
Figure 2: Average test score by group and treatment: U.S. vs. Shanghai



Notes: Average score for students who received no incentives (Control) and for students who received incentives (Treatment) by school and track.

Validation

- Carefully designed framework
- Items mapped to construct



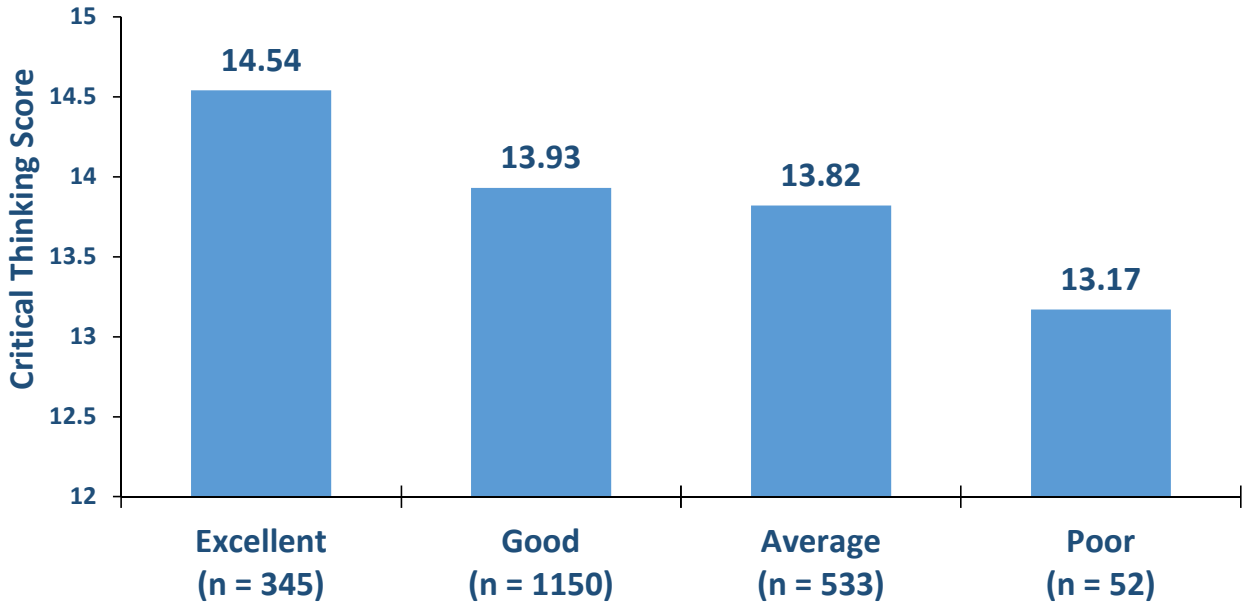
- Intended and unintended consequences
- New use cases

- Cognitive interviews
- Student survey
- Response time
- Delivery mode
- Motivation

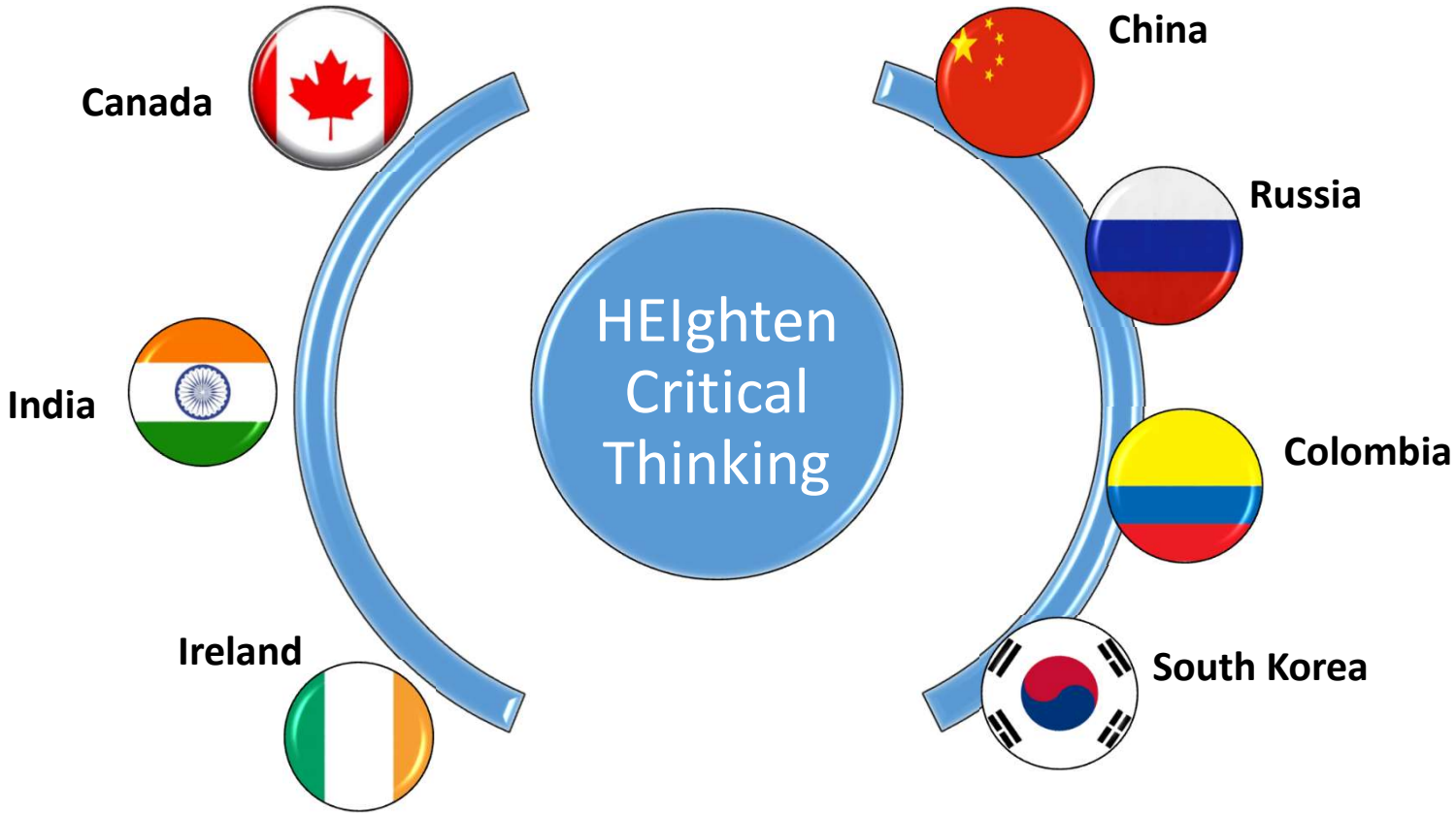
- Relation to GPA, SAT, self-evaluation, similar measures, relevant experience, etc.

- Item analysis
- Dimensionality analysis
- Reliability
- International scale

Self-Rated Critical Thinking Skills and HEIghten Critical Thinking Scores



International Partnerships



Next Steps of Research

Learning and Development of Critical Thinking

Help institutions equip students with critical thinking

Create an Ecosystem

Integrating critical thinking into instruction and daily activities

Help students increase awareness and demonstrate

Thank you!

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Guidelines for Enhancing Critical Thinking

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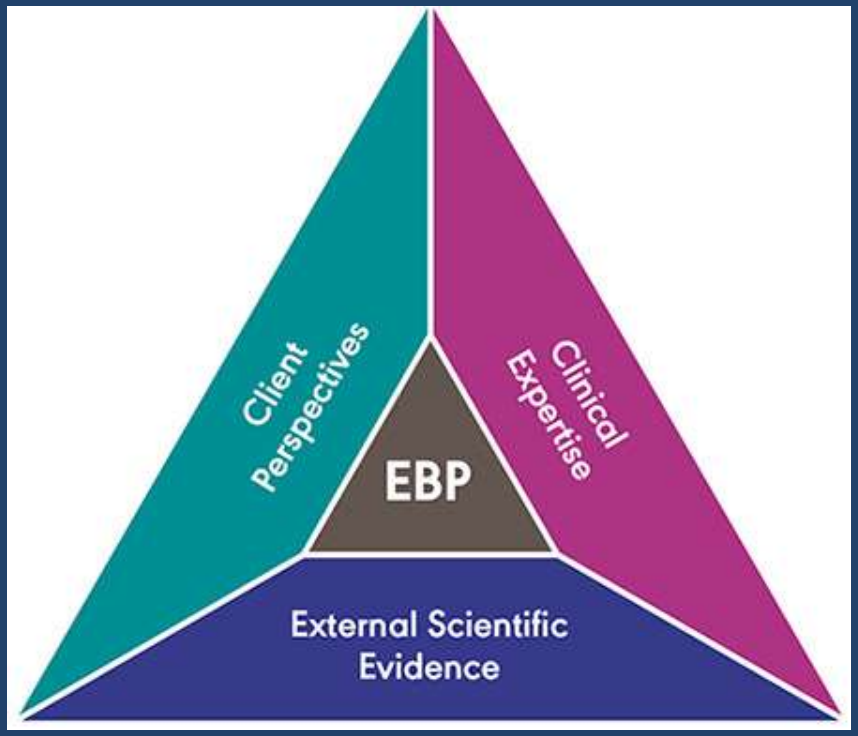
1. Motivate your students to think critically

Tell them "good intentions" are not good enough

- Because
- "Good intentions"
- Don't equal
- "Good thinking"

And also tell them, critical thinking…

- Is an essential complement to evidence-based practice (Finn, 2011)



As well as, critical thinking…

- Is an essential foundation for scientific thinking (Murtonen & Balloo, 2019)

Plus, critical thinking…

- Reduces likelihood of developing false beliefs and making poor choices (Lilienfeld et al., 2014)

And finally, critical thinking…

- Is a highly desired skill by their future employers (Bourn, 2018)

2. Define critical thinking for your students

Don’t assume you and your students share same understanding of critical thinking

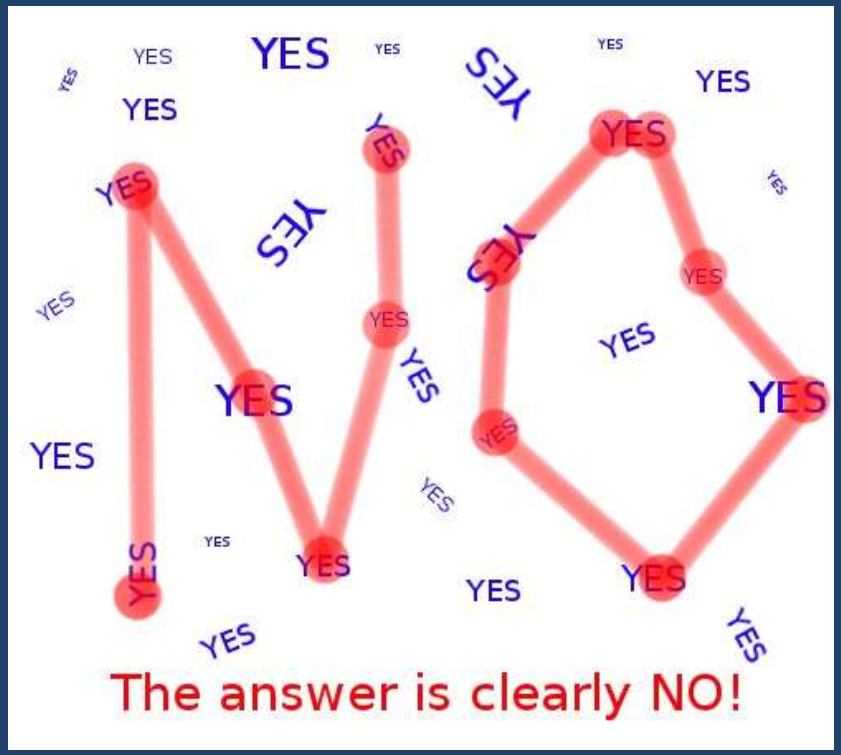
Provide definition that is practical and instructive (Finn, Brundage, & DiLollo, 2016)

- Example:
- "Critical thinking is reasonable, reflective thinking focused on deciding what to believe or do" (Ennis, 2003, p. 295)

3. Model “open-mindedness” for your students and encourage them to do the same

Because it includes elements relevant to clinic and research including the fact that (Stenhouse et al., 2018):

- Sometimes you will be wrong
- Thus, you should seek and be open to alternative views
- Examine them with undue bias
- And be willing to modify your beliefs
- IF the evidence warrants so



And these elements will shape the quality of your students' critical thinking (Baron, 2008)

4. Provide students with many opportunities to actively practice critical thinking (Harris & Bacon, 2019)

- In class
- In clinic
- In lab
- And perhaps
- In their lives

Take-Home Point: It's not just what your students think that matters, but HOW they think

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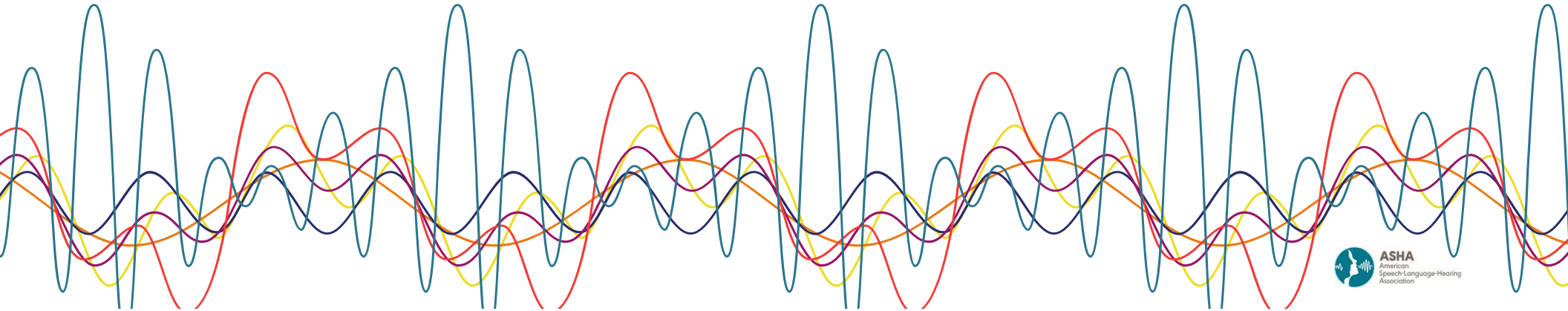
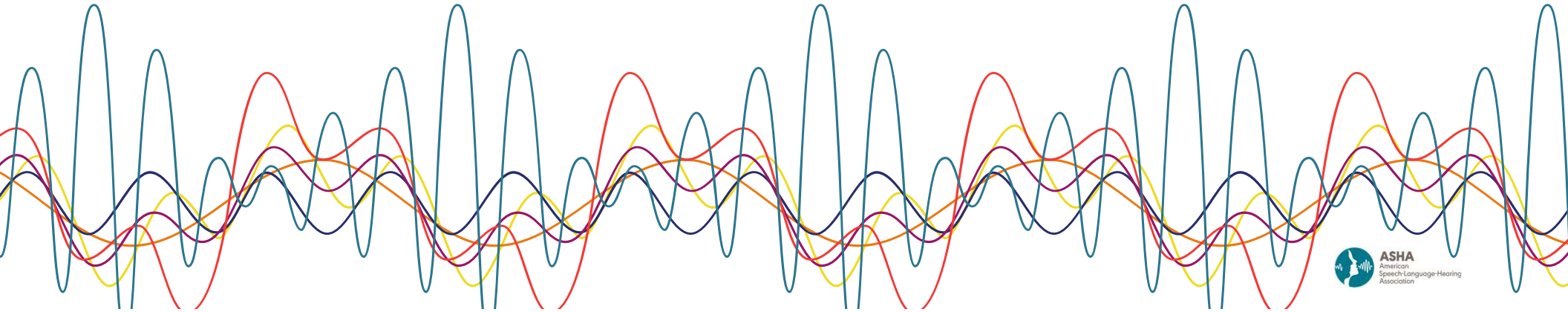
Panel Question & Answer Session



2019 Researcher-Academic Town Meeting

Thank you for coming! Enjoy the rest of Convention!



2019 Researcher-Academic Town Meeting

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