

Assessing Basic Cognitive Skill, Transferable Skill and Critical Thinking Development in College Students from Admission to Graduation

Appendix

Published by:

The Higher Education Quality Council of Ontario

88 Queens Quay, Suite 2500
Toronto, ON
Canada, M5J 0B6

Phone: (416) 212-3893

Fax: (416) 212-3899

Web: www.heqco.ca

E-mail: info@heqco.ca

Cite this publication in the following format:

Ingleton, P. & Fricker, T. (2021) *Assessing Basic Cognitive Skill, Transferable Skill and Critical Thinking Development in College Students from Admission to Graduation Appendix*. Toronto: Higher Education Quality Council of Ontario.



An agency of the Government of Ontario

The opinions expressed in this research document are those of the authors and do not necessarily represent the views or official policies of the Higher Education Quality Council of Ontario or other agencies or organizations that may have provided support, financial or otherwise, for this project. © Queens Printer for Ontario, 2021

Acknowledgments

This report, and this project as a whole, is the product of a truly supportive and collaborative environment at Mohawk College and within the Ontario College system. In total, 100 Mohawk staff, faculty and administrators contributed to the work represented in this report, with the complete support of senior administration and the President. In addition, 31 representatives from almost every college in Ontario provided data and insight into testing and learning outcomes assessment at their respective institutions. We wish to sincerely thank everyone for their time and contributions. To further illustrate the breadth of this support, we acknowledge all of these individuals below.

First and foremost, this report and the research it represents would not have been possible without the support, guidance and feedback of the project's participating investigators:

- Megan Waltenbury, Research and Special Projects Coordinator
- Melissa Gallo, Director, Student Success Initiatives
- Ceibert Adamson, Dean, Continuing Education, Academic Quality and the Centre for Teaching and Learning
- Richard Wiggers, Associate Dean, Liberal Studies
- Helen Sheridan, Corporate Research Analyst, Institutional Research and Data Analytics
- George Rombes, Director, Enrolment Management and Systems
- Grant Hodson, Director, Corporate Reporting, Institutional Research and Data Analytics

We also acknowledge the crucial support and assistance of the following members of the Mohawk community who were instrumental in supporting the implementation of our pilots:

- Nicole Redmond, Researcher, Student Success Initiatives
- Bobbijo Sawchyn, Research and Special Projects Coordinator (Interim)
- Hetal Petal, Student Success Information Management Specialist, Mohawk Testing Centre
- Carly Ellis, Pre-Admission and Assessment Centre Technician, Mohawk Testing Centre
- Testing Centre staff (Rachel D'Ortenzio, Chris Palios, Joan Legacy, James Walker and Heather Piggott)
- Karen Henderson, Research Ethics Officer
- Jacqueline Stillman, Office Assistant, Special Events and Community Development
- Brian Gould, Manager, Online Learning and Development, Centre for Teaching and Learning
- Leslie Marshall, Associate Dean, Centre for Teaching and Learning

Thanks, too, to Jennifer Curry Jahnke, Maurine Parzen and Nicola Facchini, the researchers involved in the eCampus project, *Effects of Career Preparatory Tools on Academic and Career Success*, who compiled a literature review on capstones and provided supplementary information for the capstone inventory, Peter Dietsche for his advisement on the Ontario College Student Entrance Survey (OCSES) and the measurement of students' attitudes toward learning more generally and Kathie Montognese from ACCUPLACER for securing permission to continue using the Classic tests past their sunset date for our research.

We would also like to extend our thanks to the administrators, faculty and staff at Mohawk College who assisted in the preparation of the inventory of capstone courses and projects across our programs of study and who supported our research pilots:

- Angelo Cosco, Associate Dean, Construction and Building Systems
- Susan Spurr, Assistant to Associate Dean, Construction and Building Systems
- Dan Havercroft, Associate Dean, Building, Construction, Electrical and Energy
- Marg DiVincenzo, Assistant to Associate Dean, Construction, Electrical and Energy
- Craig Cooke, Professor, Mathematics
- Sean Nix, Professor and Program Coordinator, Civil Engineering Technology – Transportation; Building and Construction Sciences First Year Cluster
- Rebecca Beatty, Professor, Architectural Technician/Technology, Civil Engineering Technology – Transportation
- Tracey Kadish, Associate Dean, Business and Media Graduate Studies, Applied Research and Entrepreneurship
- Alysia Kay, Assistant to the Associate Dean, Business and Media Graduate Studies, Applied Research and Entrepreneurship
- Tim Tuck, Professor and Program Coordinator, Public Relations Graduate Certificate
- Lisa Pegg, Professor and Program Coordinator, Business Analysis
- Wendy Lawson, Dean, School of Health
- Nair Lacruz, Associate Dean, Health Studies
- Lauren Mills, Assistant to the Associate Dean, Health Studies
- Vivian Armas, Professor, Massage Therapy
- Theresia Arnott-Candy, Professor, Massage Therapy
- Frances Lima, Assistant to the Associate Dean, Allied Health
- Brooke Malstrom, Professor, OTA/PTA
- Patricia Illman, Professor, OTA/PTA
- Andrew Boim, Professor, OTA/PTA
- Michael Chan, Professor, OTA/PTA
- Lesley Brannagan, Professor and Program Coordinator, Cardiovascular Technology
- KimAnn Laush, Associate Dean, Community Studies
- Malorie Valade, Assistant to the Associate Dean, Community Studies
- Julie Scheffel, Professor, Child and Youth Care
- Alexandra Butty, Professor, Community Studies
- Karen Falls, Professor, Community Studies
- Art Domenicucci, Administrator, Social Services and Justice
- Debbie Kendall, Assistant to the Associate Dean, Social Services and Justice Studies
- Lisa Singh, Professor and Academic Coordinator, Social Service Worker Program Intensive
- Andrew McTear, Associate Dean, Business
- Rita Roch, Assistant to the Associate Dean, Business
- Laurence Smith, Professor, Business
- Stephen Stunt, Professor, Business
- Lisa Graham, Professor, Business
- Carol-Anne Tristani, Professor, Business

- Larry Bitner, Professor, Business
- Lloyd Hobbs, Professor, Business
- Jennifer Jewitt-Matsumoto, Professor, Business
- Amanda Marazia, Professor, Business
- Mary Jane Prendergast, Professor, Business
- Jorge Bettencourt, Professor, Business
- Sally Simpson, Career and Student Success Coach, Student & Graduate Employment
- Kurt Muller, Dean, McKeil School of Business, Media and Entertainment
- Lisa MacDonald, Assistant to the Associate Dean, Media and Entertainment
- Haley Dickson, Support Officer, Media and Entertainment
- Janice Long, Professor and Program Coordinator, Marketing
- Wesley Beckett, Professor and Coordinator, Art and Design Foundations
- Angela Simon, Professor, Media and Entertainment
- George Miltenburg, Associate Dean, Chemical, Mechanical and Aviation
- Linda Wilson, Assistant to the Associate Dean, Chemical, Mechanical and Aviation
- Joseph Varrasso, Associate Dean, Electrical and Computer Engineering Technology
- January Coward, Assistant to the Associate Dean, Computer Science and Information Technology
- Denise Hager, Professor, Electrical and Computer Engineering Technology – Computer Science
- Stephen Adams, Professor, Electrical and Computer Engineering Technology – Computer Science
- John Holloway, Professor, Electrical and Computer Engineering Technology – Computer Science
- Mel Walker, Professor, Electrical and Computer Engineering Technology – Computer Science
- George Geczy, Professor, Electrical and Computer Engineering Technology – Computer Science
- Nicholas Corkigian, Professor, Electrical and Computer Engineering Technology – Computer Science
- Christine French, Professor, Electrical and Computer Engineering Technology – Computer Science
- Marnie Torresan, Professor, Electrical and Computer Engineering Technology – Computer Science
- Mohamed Ibrahim, Junior Architect, MEDIC
- Nityan Khanna, Senior eHealth Technology Programmer Analyst, MEDIC
- Rory Yendt, eHealth Technology Programmer Analyst, MEDIC
- Maria Riva, Associate Dean, Nursing
- Bongzi Dube, Assistant to the Associate Dean, Nursing
- Cathy Hamilton, Assistant to the Associate Dean, Liberal Studies
- Shaun Iles, Professor, Liberal Studies
- Ryan Iles, Professor, Liberal Studies
- Lesley Thomson, Professor, Liberal Studies
- Kimberly Costello, Professor, Liberal Studies
- Lisa Pender, Professor, Liberal Studies

- Jennifer Potton-Roberts, Professor, Liberal Studies
- Catherine Leo, Professor, Liberal Studies
- Elisabeth Sykes, Professor, Liberal Studies
- Maria Berrafati, Professor, Communications
- Erica Fagan, Professor, Communications
- Jacqueline Beres, Student Success Advisor, Student Success Initiatives

Finally, we could not have completed our environmental scan of assessment practices in Ontario colleges without the generous time and assistance of the following individuals across the sector:

- David Deveau, Manager, Test Centre, Algonquin College
- Nadia Keturi, Admissions Officer, Enrolment Centre, Cambrian College
- Kim LaPierre, Team Lead, Student Success Services, Canadore College
- Walter Ciupa, Assessment Coordinator, Assessment Centre, Centennial College
- Janice Bennett, Coordinator, English Language Studies, Conestoga College
- Laura Stoutenburg, Coordinator, TESL Certificate Program, Conestoga College
- Trevor Hamalainen, Testing Services Facilitator, School of Access and Success, Confederation College
- Rachel Fuller, Test Centre Administrator, Scheduling, Test Centre, and Student Conduct, Durham College
- Mandy Hadenko-Hodgkinson, Director, Scheduling, Test Centre and Student Conduct Committee, Durham College
- Kevin Dougherty, Associate Dean, School of Interdisciplinary Studies, Durham College
- Lisa White, Director, Student Recruitment and Admission Services, Durham College
- Krista Vogt, Senior Associate Registrar, Domestic and International Admissions, Fanshawe College
- André Cormier, Coordinator, Reason and Writing Curriculum, Fanshawe College
- Jessica Burgorski, Chair, School of Language & Liberal Studies, Fanshawe College
- Julian Jarosh, Coordinator, Mathematics, Fanshawe College
- Molly Westland, Acting Director of Academic Quality, Planning and Operations, Fleming College
- Heather Scrimshaw, Student Advisor, Academic Upgrading, Fleming College
- Kasia Dziwak, Manager, Assessment Services, Tutoring and Learning Centre Services, Academic Services & Learning Resources: Assessment Centre, George Brown College
- Jeff Reynolds, Manager, Assessment Centre Operations, Academic Services & Learning Resources: Assessment Centre, George Brown College
- Kyla Lavin, Testing Advisor, Student Success Services, Georgian College
- Leah Barclay, Manager, Testing and Integrated Services, Student Success and Engagement, Humber College
- Connie Byrns, Coordinator, Tutoring and Testing Services, Lambton College
- Laura Naumann, Director, Strategic Enrolment Services and Registrar, Loyalist College
- Tina Matson, Associate Registrar, Admissions and Enrolment Services, Niagara College
- Nichole Roy, Student Advisor, Northern College
- Lynn Charron, Test Centre Coordinator, St. Lawrence College
- Matt Trainor, Director, Student Services, Sault College

- Elaine Brouwer, Skills Assessment Department, Seneca College
- Linda Dalton, Registrar, Office of the Registrar, Sheridan College
- Scott Settle, Manager, Assessment Centre, Office of the Registrar, Sheridan College

We are deeply appreciative of the level of engagement and collaboration with internal and external partners. Many thanks to all!

Appendix A

Inventory of Assessment in Alignment with Mohawk College ILOs

LOAC II Environmental Scan

<u>ILO</u>	Communicator (AFS – Reading and Writing)	Critical Thinker (AFS – Math)	Continuous Learner	Collaborator	Responsible Citizen
ePortfolio Traits	<ul style="list-style-type: none"> · Read · Write · Speak · Listen · Present · Visual literacy 	<ul style="list-style-type: none"> · Understand and apply mathematical concepts and reasoning · Analyse and use numerical data · Conceptualize · Analyse · Synthesize · Evaluate · Decision-making · Creative and innovative thinking 	<ul style="list-style-type: none"> · Gather and manage information · Select and use tools/technology for a task · Computer literacy · Internet skills 	<ul style="list-style-type: none"> · Teamwork · Relationship management · Conflict management · Leadership · Networking 	<ul style="list-style-type: none"> · Manage self · Manage change (flexibility and adaptability) · Reflective practice · Personal responsibility
Learning Outcomes	1.1: Effective Communication	3.1: Critical Thinking and Problem Solving 3.2: Creativity and Innovation	4.1: Intentional Learning 4.2: Technical Competence 4.3: Adaptability and Flexibility 4.4: Planning and Organization	2.1: Collaboration/Teamwork 2.2: Meaningful Interpersonal Relationships 2.3: Leadership Development	5.1: Appreciating Diversity 5.2: Self-Awareness and Positive Attitude 5.3: Healthy Behaviors 5.4: Social Responsibility and Civic Engagement 5.5: Sustainability and Globalization

					5.6: Spiritual Wellbeing 5.7: Financial Fluency
Applicable ACCUPLACER Tests	<ul style="list-style-type: none"> · Reading Comprehension · Sentence Skills · WritePlacer · ESL Language Use · ESL Listening · ESL Reading · ESL Sentence Meaning · WritePlacer ESL 	<ul style="list-style-type: none"> · Arithmetic · College-level Math · Elementary Algebra 			
Applicable VALUE Rubrics	<ul style="list-style-type: none"> · Written Communication · Oral Communication · Reading 	<ul style="list-style-type: none"> · Inquiry and Analysis · Critical Thinking · Creative Thinking · Quantitative Literacy 	<ul style="list-style-type: none"> · Information Literacy · Foundations and Skills for Lifelong Learning · Integrative Learning 	<ul style="list-style-type: none"> · Teamwork · Problem-Solving 	<ul style="list-style-type: none"> · Civic Engagement – Local and Global · Intercultural Knowledge and Competence · Global Learning · Ethical Reasoning
Applicable HEIghten Outcomes Assessment Suite Tools	<ul style="list-style-type: none"> · Written Communication 	<ul style="list-style-type: none"> · Critical Thinking · Quantitative Literacy 			<ul style="list-style-type: none"> · Civic Competency & Engagement · Intercultural Competency and Diversity
Applicable ETS Tools	<ul style="list-style-type: none"> · ETS Proficiency Profile (formerly Measure of Academic Proficiency and Progress [MAPP]) · ETS Academic Profile 	<ul style="list-style-type: none"> · ETS Proficiency Profile (formerly Measure of Academic Proficiency and Progress [MAPP]) · ETS Academic Profile 			

	<ul style="list-style-type: none"> · ETS Graduate Record Examination (GRE) General Test · ETS Graduate Record Examination (GRE) Literature in English · Global Integrated Scenario-Based Assessment – Reading for Understanding 	<ul style="list-style-type: none"> · ETS Graduate Record Examination (GRE) General Test · ETS Graduate Record Examination (GRE) Mathematics 			
Applicable NILOA-Endorsed Tools¹	<ul style="list-style-type: none"> · Collegiate Learning Assessment Plus (CLA+) 	<ul style="list-style-type: none"> · Critical Thinking Assessment Test (CAT) · Collegiate Learning Assessment Plus (CLA+) 			
Other Tools	<ul style="list-style-type: none"> · Cognitive Level and Quality of Writing Assessment (CLAQWA) · ACT Academic Proficiency Test · ACT ASSET Student Success System · College English Placement Test · Nelson Denny Reading Test · New Jersey College Basic Skills Placement Test · University of Toronto Communication Rubric 	<ul style="list-style-type: none"> · ACT Academic Proficiency Test · ACT ASSET Student Success System · New Jersey College Basic Skills Placement Test · Need for Cognition Scale (WABASH) · Education and Skills Online Assessment (E&S) · George Brown Critical-thinking Assessment Rubric · Essential Adult Skills Initiative (EASI) 	<ul style="list-style-type: none"> · Transferable Learning Orientations (TLO) Survey · Learning Style Inventory · Education and Skills Online Assessment (E&S) · Essential Adult Skills Initiative (EASI) 	<ul style="list-style-type: none"> · Team Q Survey · University of Toronto Problem-Solving Rubric · University of Toronto Teamwork Rubric · Milville-Guzman Universality-Diversity Scale – Short Form (M-GUDS-S) (WABASH) · Ryff Scales of Psychological Well-Being (WABASH) · Socially Responsible Leadership Scale – Revised Version II (SRLS-R2) (WABASH) · Test of Leadership Ability (FET) 	<ul style="list-style-type: none"> · Measure of Intellectual Development (MID) · Defining Issues Test (WABASH) · Ryff Scales of Psychological Well-Being (WABASH) · Socially Responsible Leadership Scale – Revised Version II (SRLS-R2) (WABASH) · Orientation Toward Learning Scales – Openness to Diversity and

¹ The Collegiate Assessment of Academic Proficiency (CAAP) test was discontinued in January 2018 and is not being replaced by another assessment. UIT was used in the WABASH National Study of Liberal Arts Education.

	<ul style="list-style-type: none"> · Orientation Toward Learning Scales – Positive Attitude Toward Literacy Scale (WABASH) · Education and Skills Online Assessment (E&S) · Essential Adult Skills Initiative (EASI) · Critical Thinking and Written Communication (CTWC) Rubric (Humber) 	<ul style="list-style-type: none"> · Watson-Glaser Critical-thinking Appraisal · Ennis-Weir Critical-thinking Essay Test · Halpern Critical-thinking Assessment (HCTA) · Cornell Critical-thinking Test · California Critical-thinking Skills Test (CCTST) · California Critical-thinking Disposition Inventory (CCTDI) · Mathematics in Practice (MIP) · Test of Everyday Reasoning (TER) · Test of Everyday Reasoning – Numeracy (TER-N) · Ontario College Math Test (OCMT) · Critical Thinking and Written Communication (CTWC) Rubric (Humber) · Learning Outcome Assessment of Critical Thinking (Aga Khan University) 		<ul style="list-style-type: none"> · NEO Personality Inventory – Revised (NEO PI-R) 	<ul style="list-style-type: none"> Challenge Scale (WABASH) · Life Goals Scales – Political and Social Involvement Scale (WABASH) · NEO Personality Inventory – Revised (NEO PI-R)
--	---	---	--	--	---

Appendix B

LOAC II Pilots: Information and Guidelines

Participation in Learning Outcomes Assessment

Programs selected to participate in the LOAC VALUE rubric pilots will identify assignments in the first and final terms that naturally assess for critical-thinking skills. The project team will work with faculty to adapt and pilot test the use of the Critical Thinking VALUE rubric to assess critical-thinking skills in these assignments. Participating faculty will receive SWF time allotment (funding provided) and significant guidance and support throughout the project. The consistent use of the VALUE rubric will help us understand the degree to which students' critical-thinking skills change between the start and end of a program of study — a research and assessment activity that no other college in the province is currently undertaking. The project will also foster more authentic and comprehensive assessment practices and greater connections between program faculty, CTL and student services.

Program Selection Criteria

- Two-year diploma or three-year advanced diploma (no graduate certificate or degree programs)
- Capstone project, course or multi-course in final semester(s)
- Assessment of critical thinking in first- and final-semester (i.e., capstone) assignments
- Multiple faculty available for scoring (minimum two)

Faculty and Administrative Commitment

- Dean and AD permission to participate
- Faculty assistance in securing permissions from students
- Faculty participation in rubric adaptation process (as needed)
- Faculty participation in rubric scoring and scorer calibration
- AD and faculty participation in debriefing discussions (and dissemination, as desired)

Faculty Hours, Release Time and Support

Meetings	4 hours
Rubric Adaptation	6 hours
(Assignment Adaptation) (Student Communication)	
Scoring and Scorer Calibration	15 min * # of assignments + 6 hours 36 hours (<i>Assuming 120 assignments</i>)
Debriefing	2 hours
(Dissemination)	
TOTAL	48 hours (3.5 hours/week)

\$104/hour (or \$83.20/hour + 25% benefits) x 48 hours = **\$4,992/faculty**

Course/Assignment Selection Criteria

1. Do the assignments assess for the intended skill (i.e., critical thinking)?

2. Are both assignments similarly weighted (i.e., worth a similar percentage of students' final grade)?
3. Are both assignments worth a significant amount of students' final grade?
4. Is this an individual or group assignment? (Note: individual assignments are easier to assess)

Working with the VALUE rubrics

1. Will you adapt the VALUE rubric using more discipline-specific language? (recommended)
2. Will you adapt the assignment to better align with the rubric?
3. Will you share the rubric with students and discuss the assessment of skill(s) in class?

Scoring and Scorer Calibration

- Multiple scorers grade existing assignments for intended skill (i.e., critical thinking) using rubric to determine appropriate performance level of each
- Periodic discussion of grades throughout; inconsistencies are addressed until (ideally) consensus is achieved

Participation in Testing Pilots

Students who participate in the VALUE rubric pilots will also be invited to participate in the project's testing pilots. These pilots involve the re-administration of our post-admission reading, writing and/or mathematics assessments (i.e., Assessments for Success) (as applicable) to outgoing students in order to compare post-admission and pre-graduation scores.

Participating faculty will not be directly involved in administering this testing. However, they are encouraged, if possible, to provide either class release time to write the assessments in the Testing Centre and/or encouragement (e.g., promotion, course credit, etc. — financial incentive is funded through the project).

Classroom Visits and Informed Consent

A member of the research team will need to visit all students (i.e., all sections) in the selected final-term course to officially invite them to participate in both the VALUE rubric and testing pilots and to explain and facilitate the informed consent process. These classroom visits will take place in the final month of term, should only take 10–15 minutes and will be scheduled in consultation with faculty.

Appendix C

LOAC II Pilots: Planning Document

First of all, **THANK YOU** for agreeing to be a part of the LOAC research project and for engaging your time and expertise in this important undertaking. We are so excited to have you on board and look forward to working with you this year!

As we prepare to launch the pilots, we ask that you respond to the questions below to the best of your ability. If you are unable to answer some questions at this point, not a problem — we will continue to discuss these things as we move forward! Upon receipt of the completed survey, we will set up a meeting to review any outstanding questions and determine next steps.

Faculty Participants

Identified faculty will participate in assignment and rubric adaptation (as required), rubric scoring, scorer calibration and project debriefing, as outlined in **LOAC II Pilots – Information and Guidelines**.

Faculty #1: _____

Please check all that apply:

☐ Program Coordinator ☐ Full-Time ☐ Part-Time

Faculty #2: _____

Please check all that apply:

☐ Program Coordinator ☐ Full-Time ☐ Part-Time

Other Faculty: _____

Course Selection

Note: If critical thinking is not formally assessed in a first-semester course in your program, please propose a second-semester course in which it is or could be assessed.

First-semester course (or equivalent): _____

of sections: _____ Approximate student enrollment: _____

Final-semester course: _____

of sections: _____ Approximate student enrollment: _____

Assignment Selection

Please attach copies of course syllabi, assignments and any existing rubrics as applicable.

Description of **first-semester** assignment (including when it is assigned/due):

How much (i.e., **percentage of the final grade**) is this assignment worth? _____

Is this an **individual or group** assignment? ☐ Individual ☐ Group

Are you planning to **adapt** the assignment before the pilot? ☐ Yes ☐ No ☐ Unsure

Do you currently use a rubric to assess this assignment? ☐ Yes ☐ No ☐ Unsure

Description of **final-semester** assignment (including when it is assigned/due):

How much (i.e., **percentage of the final grade**) is this assignment worth? _____

Is this an **individual or group** assignment? ☐ Individual ☐ Group

Are you planning to **adapt** the assignment before the pilot? ☐ Yes ☐ No ☐ Unsure

Do you currently use a rubric to assess this assignment? ☐ Yes ☐ No ☐ Unsure

Critical Thinking VALUE Rubric Preferences

Are you planning to **adapt the VALUE rubric** using more discipline-specific language?

☐ Yes ☐ No ☐ Unsure

Are you planning to **share the rubric** with students and discuss skills assessment in class?

☐ Yes ☐ No ☐ Unsure

Participation in Skills-based Testing

It is of significant benefit to our research to have those **final-semester students** participating in our VALUE rubric pilots also participate in our skills-based testing pilots. This would involve the **re-administration of Assessments for Success** (reading, writing and/or mathematics tests, as appropriate) in the final semester. To participate, students would require either class release time to write the assessments in the **Testing Centre** or motivation (e.g., promotion, time, credit, etc. — financial incentive is funded through the project) to complete the assessments **online**.

Would you consider allowing your students to participate in this testing?

☐ Yes ☐ No ☐ Unsure

Appendix D

VALUE Rubric Scoring and Calibration Guidance Document

Introduction

As part of Phase II of Mohawk's Learning Outcomes Assessment project, **faculty will be scoring de-identified/coded² samples of student work using the Critical Thinking VALUE rubric.³** These work samples were collected from students in their first and/or final semester and should represent a significant submission for both the course and program of study in question. They will be assessed for the following critical-thinking criteria, as applicable:

- **Explanation of issues**
- **Evidence**
- **Influence of context and assumptions**
- **Student's position (thesis/hypothesis)**
- **Conclusions and related outcomes**

As per the submitted Phase II Research Protocol, the first scoring/calibration meeting will first involve a discussion of the following items:

- Critical Thinking VALUE rubric
- Assignment content (including any course or assignment rubrics)
- If/how the rubric criteria/dimensions are represented in the assignment instructions

Should it ultimately be decided that any of the assessment criteria are not represented in the assignments, the scoring team may decide not to assess for that criterion.

Once everyone is comfortable with both the assignment and the rubric, the process of scoring and scorer calibration will begin. This is intended to be an iterative process that proceeds slowly at first, allowing faculty multiple opportunities to check in with each other and compare scores. As described by Simper et al., (2018), **"we systematically work our way through the criteria and assign a performance level based on evidence in the artifact. Discussing with other markers the levels assigned, the evidence used and interpretation of language in the performance descriptors is key to gaining proficiency with using the rubrics."**

The scoring/calibration protocol outlined below draws heavily on previous learning outcomes assessment projects (Finley, 2011; Simper et al., 2018) and is intended to serve as a

² All identifying information (student names, student numbers, etc.) has been removed from all assignments prior to scoring to reduce any potential familiarity or bias. This information has been replaced with codes to ensure work samples can be re-associated with this data once scoring is completed, calibrated and debriefed.

³ The Valid Assessment of Learning in Undergraduate Education (or "VALUE") Rubrics (there are 16 in total) are recognized as having high content and face validity (Finley, 2011; Cumming & Miller, 2018) due to the rigorous process through which they were designed, with involvement by interdisciplinary teams of expert faculty from over 100 higher education institutions, employers and accreditors (Drezek McConnell et al., 2019). In one study, the critical-thinking rubric was found to have the "highest degree of agreement and reliability" of all 16 (Finley, 2011), though the reliability of any of the VALUE rubrics is dependent on the quality of the process of norming or calibrating scorers (Siefert, 2012; Szafran, 2017). Studies into the validity of these rubrics are ongoing.

recommended guideline only. The process may be adjusted in consultation with faculty throughout the pilot; any amendments will be recorded in the final report to HEQCO.

VALUE Scoring Protocol: Steps for Scoring and Calibration

1. Building a common understanding

Of VALUE rubric:

- Read front page to familiarize with framing language and purpose of rubric
- Review individual criteria and performance benchmarks to ensure shared understanding between scorers

Of assignment:

- Read through the assignment instructions and assignment rubric for context
- **Identify what *specifically* students were directed to do and where critical thinking is anticipated to be demonstrated**
- Review any information integral to informed assessment (e.g., reading a research paper to which students were responding)

Of assignment when compared to VALUE rubric:

- Identify what specifically students were directed to do and where critical thinking is anticipated to be demonstrated

Note: Neither the VALUE rubric, nor its performance benchmarks, are intended to correlate to the progression of a postsecondary program; the rubric is not meant to represent what is expected in a particular year of study, but corresponds instead to the level of skill demonstrated, with the “capstone” level representing a masterful, aspirational level of achievement (Simper et al., 2018). Relatedly, the levels of performance are not consistently scaled, e.g., the distance between Benchmark 1 and Milestone 2 is not consistent with the distance between Milestone 3 and Capstone 4 (Simper et al., 2018).

2. Collectively scoring a work sample

- Collectively work through a few student responses to identify evidence for each of the dimensions to be rated and whether any dimensions are not appropriate for the particular assignment being scored
- Discuss what level the evidence suggests each response is demonstrating
- Assign and record a performance level (for each dimension) for the work samples

Criteria/Dimensions:

Explanation of issues	Has the student sufficiently articulated the issue that is being explored/up for debate?
Evidence	Has the student presented a critical framework (e.g., examples, relevant sources) and have they sufficiently and accurately interpreted, analyzed and (when appropriate) challenged that framework?
Influence of context and assumptions	Has the student situated their work in relation to other work in the field and the field itself? Have they analyzed their own and others' assumptions?
Student's position (thesis/hypothesis)	Has the student demonstrated a process of reasoning reflective of the complexity of the issue and aware of its own limitations? Has the student proposed something new?
Conclusions and related outcomes	Has the student presented a logical, informed conclusion consistent with their analysis and have they addressed its implications?

3. Individual scoring and ongoing calibration

- Individually rate the remaining work samples, compiling an annotated list to back up the decision for each of the criteria; assign and record a performance level (for each dimension) for each work sample
- Following scoring, scorers discuss respective results; annotations are used to discuss any differences between levels assigned by different scorers
- In some cases, this process will result in a scorer adjusting their level on a dimension; changes are recoded/reported as post-calibration agreement
- Generally, the greater the number of assignments that are rated, the fewer differences there are in ratings

Some tips

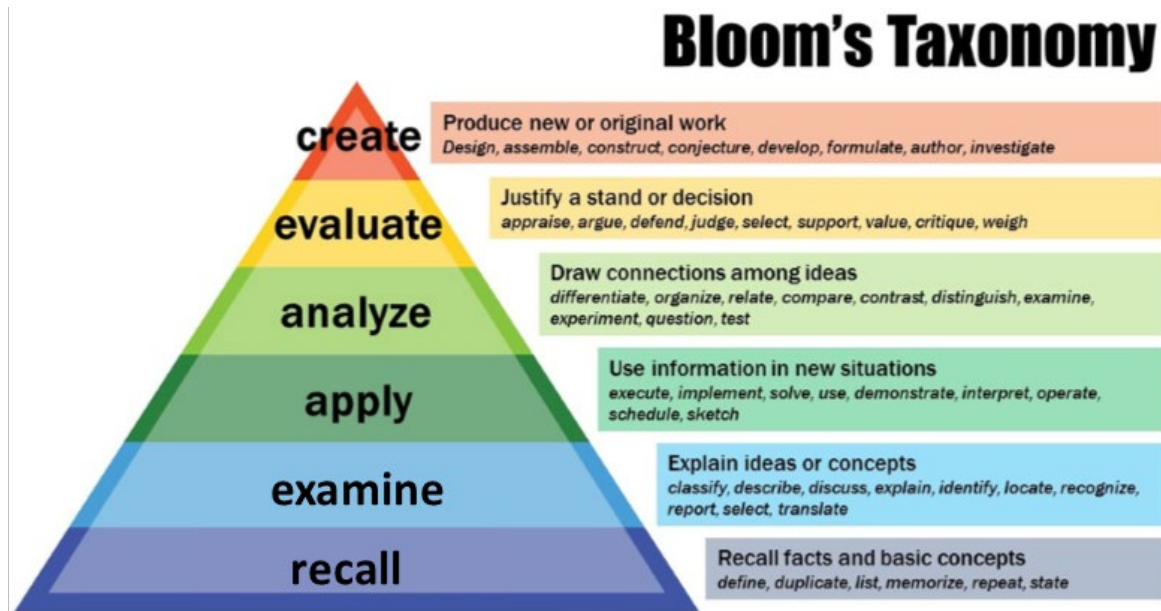
- **Credit only what is demonstrated**

“Tacit assumptions are difficult to evaluate unless students make their awareness visible. At higher levels on the VALUE rubrics, it is desirable for students to make informed evaluations or to question the assumptions that they or others make...For correlations to be drawn, the course assignment needed to elicit the demonstration of critical-thinking criteria (i.e., the course assessment needed to align with the VALUE dimensions)” (Scott et al., 2018).

As the authors suggest, we can only assess what students demonstrate; it is important to remember that students could have done a good job on the assignment and even a good job of thinking critically in their completion of the assignment, but if there is no explicit demonstration of that ability (either because it was not explicitly required or because they opted not to explicitly demonstrate it), then the rubric is unable to account for it.

- **Distinguish high-level from mid-level skills**

Critical thinking involves more than applying standards or the ideas of others; it requires analysis and even questioning of those standards/ideas, and subsequent creation of new, reasoned conclusions. Bloom's Taxonomy helps us distinguish high-level skills (e.g., analysis and argumentation) from mid-level skills (e.g., classification and application).



(Vanderbilt University Center for Teaching, 2015) — revised

References

- Cumming, T. & Miller, D. M. (2018). *Enhancing Assessment: Putting Psychometrics to Work in Higher Education*. Sterling: Stylus.
- Drezek McConnell, K., Horan, E. M., Zimmerman, B., & Rhodes, T. L. (2019). We Have a Rubric for That: The VALUE Approach to Assessment.
- Finley, A. P. (2011). How Reliable Are the VALUE Rubrics? *Peer Review*, 13(4)/14(1), 31–33.
- Scott, J., B. Frank & N. Simper (2018). Ten Recommendations for Undertaking Institutional Assessment. In F. Deller, J. Pichette & E. K. Watkins (Ed.), *Driving Academic Quality: Lessons from Ontario's Skills Assessment Projects* (pp. 29–52). Toronto: Queen's Printer for Ontario.
- Siefert, L. (2012). Assessing General Education Learning Outcomes. *Peer Review*, 13(4)/14(1), 9–11.
- Simper, N., Frank, B., Scott, J., & Kaupp, J. (2018). *Learning Outcomes Assessment and Program Improvement at Queen's University*. Toronto: Higher Education Quality Council of Ontario.
- Szafran, R.F. (2017). The Miscalculation of Interrater Reliability: A Case Study Involving the AAC&U VALUE Rubrics. *Practical Assessment, Research & Evaluation*, 22(11).
<http://pareonline.net/getvn.asp?v=22&n=11>
- Vanderbilt University Center for Teaching. (2015). Bloom's Taxonomy: An Introduction.
<http://lib.guides.umd.edu/c.php?g=598357&p=4142337>

Appendix E

Consent Forms

INFORMATION AND CONSENT TO PARTICIPATE IN RESEARCH:

Permission to use Course Assignment

Study Title: *Assessing Basic Cognitive, Critical Thinking and Transferable Skill Development in College Students from Admission to Graduation*

Researchers

- Tim Fricker, M.Ed., Dean of Students, Mohawk College
- Cebert Adamson, M.Sc., Dean, Continuing Education, Academic Quality and CTL
- Richard Wiggers, Ph.D., Associate Dean of Liberal Studies
- Melissa Gallo, M.Sc., Director, Student Success Initiatives
- George Rombes, MBA, Director, Institutional Research and Data Analytics
- Helen Sheridan, M.Ed., Corporate Research Analyst, Institutional Research and Data Analytics
- Megan Waltenbury, M.Ed., Research & Special Projects Coordinator
- Pamela Ingleton, Ph.D., Learning Outcomes Assessment Consultant

Sponsoring Organizations

- Higher Education Quality Council of Ontario (HEQCO)

Research Study Overview

You are invited to participate in a research study to assess skill development in college students from admission to graduation. We are interested in knowing more about how students' critical thinking, reading and writing skills develop from the time they enter college to the time they leave. We will investigate this development by **scoring collected assignments from both first-term and final-term students** using the "VALUE rubrics" — rubrics created by the Association of American Colleges and Universities (AAC&U) to help assess important skills developed throughout postsecondary education — and comparing their results. Participation in this program is strictly for research purposes and is completely voluntary. Participating or not participating in this study will have no negative impact on your success at Mohawk College.

You may have previously been asked to participate in another component of this study involving the retaking of the tests and surveys that make up Assessments for Success. This does not prevent you from participating now; in fact, the quality of our results is improved if you participate in both.

Procedures: To participate, please read and complete this form; submission of the form acknowledges your consent to participate. **You are not required to complete any additional work beyond the work already completed on your course assignment.** In order for you to participate, **all we require is permission to assess one of your completed assignments** using the VALUE rubrics.

If you consent to participate, all identifying information (e.g., name, student number, etc.) will be removed from your assignment and replaced with a randomly assigned code. Only Institutional Research and the Learning Outcomes Assessment Consultant will have access to the key to this code for linking various data sources. Only de-identified data will be released to the other project researchers, and instructors will never have access to this key. **All rubric scoring will occur after the end of term and will in no way affect your final grade.**

Part of this research will involve assessing the academic performance and registration records of those who have consented to the use of their assignments. Researchers will require access to your academic records, including your GPA. This information will not be linked to your name or any other personal identifier, except insofar as it is necessary to match data from the rubric scoring with your other academic information like grades and personal information like age and gender. This linkage will be made by Mohawk's Department of Institutional Research and Data Analytics who already work with this data on a regular basis. Researchers will not be provided with any personal identifiers.

Confidentiality: Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study.

In acknowledgment of sharing your assignment and academic information for this study, you will be entered into a draw to win 1 of 3 \$50 Amazon gift codes. Amazon gift codes will be emailed directly to winners no later than April 30, 2019.
--

Possible Risks and Discomforts: Participating in this research is not expected to evoke any strong emotions or pose any risks to you. If, however, participating causes you any discomfort, you may choose to withdraw from the study at any time.

Possible Benefits: Learning about how students' skills develop throughout college is an important research activity for Mohawk College. What we learn through this research will help us continue to improve the programs and services we offer future students and to better communicate the value of our diplomas, degrees and certificates to the public. As a graduating student, these assessments offer you an important opportunity to reflect on and communicate the essential skills you have developed throughout your program to prospective employers and/or future academic institutions.

Participation and Withdrawal: You can choose whether or not you would like to participate in this study. If you volunteer to be in this study, you may withdraw at any time with no consequences. You may exercise the option of removing your data from the study at any time by contacting Pamela Ingleton, whose contact information appears below. The investigators may withdraw you from this research if circumstances arise that warrant doing so.

A summary of the results will be posted at www.heqco.ca.

Rights of Participants

You may withdraw your consent at any time and discontinue participation without consequences. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the Mohawk College Research Ethics Board (MCREB). If you have questions regarding your rights as a research participant, contact: **Mohawk College Research Ethics Board (MCREB)**, reb.coordinator@mohawkcollege.ca, 905-540-4247 x20304.

If you have questions about the study, please contact **Pamela Ingleton, Learning Outcomes Assessment Consultant**, pamela.ingleton@mohawkcollege.ca, 905-575-1212 x4277.

CONSENT STATEMENT

SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the study ***Assessing Basic Cognitive, Critical Thinking and Transferable Skill Development in College Students from Admission to Graduation*** as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. Submission of this form indicates that I have given consent to participate in this research.

Name of Participant (please print)

Date

Signature of Participant

Your contact information

This information is required for tracking purposes only. We require your email address to provide you with a copy of the consent form, as per research ethics guidelines.

Full Name: _____

Email Address: _____

Student Number: _____

School (select one):

- ☐ Business, Media & Entertainment
- ☐ Community, Justice & Liberal Studies
- ☐ Health
- ☐ Engineering Technology
- ☐ Other

INFORMATION AND CONSENT TO PARTICIPATE IN RESEARCH: Reading, Writing and Mathematics Testing

Study Title: *Assessing Basic Cognitive, Critical Thinking and Transferable Skill Development in College Students from Admission to Graduation*

Researchers

- Tim Fricker, M.Ed., Dean of Students, Mohawk College
- Cebert Adamson, M.Sc., Dean, Continuing Education, Academic Quality and CTL
- Richard Wiggers, Ph.D., Associate Dean of Liberal Studies
- Melissa Gallo, M.Sc., Director, Student Success Initiatives
- George Rombes, MBA, Director, Institutional Research and Data Analytics
- Helen Sheridan, M.Ed., Corporate Research Analyst, Institutional Research and Data Analytics
- Megan Waltenbury, M.Ed., Research & Special Projects Coordinator
- Pamela Ingleton, Ph.D., Learning Outcomes Assessment Consultant

Sponsoring Organizations

- Higher Education Quality Council of Ontario (HEQCO)

Research Study Overview

You are invited to participate in a research study to assess skill development in college students from admission to graduation. Participants' **reading and writing skills** (for all programs) and **mathematics skills** (for Business and Engineering students only) will be assessed using the ACCUPLACER Reading Comprehension, ACCUPLACER WritePlacer and/or Mohawk Mathematics Assessment tests — **the same tests you likely completed before starting your first-semester classes** as part of Assessments for Success (AFS). We are also requesting your **consent to use your original test score and Student Entrance Survey data** from AFS. This will allow us to compare the results from both tests in order to determine skill development over time. **You can opt to take only one or two of the tests for which you are eligible, or complete the entire suite.**

You may have previously been asked to participate in another component of this study, involving rubric scoring of one of your course assignments. This does not prevent you from participating now; in fact, the quality of our results is improved if you participate in both.

Upon providing your consent to participate and your testing preferences (see below), you will be booked into a testing block in Mohawk's Testing Centre. In addition to completing the selected tests, **you will also be asked to complete a short, five-question survey about your experience taking each test**, before commencing the next test in sequence. Once you have completed all of the tests, **you will be directed to a final survey, the Student Exit Survey, submission of which will signal the end of your participation; you are also able to complete the Student Exit Survey in your own time on eLearn.** Results from each of your tests will be made available to you should you want them; otherwise, all results remain confidential and identifiable data can only be accessed by Mohawk's Department of Institutional

Research and Data Analytics. Participation is strictly for research purposes and is completely voluntary. Participating or not participating in this study will have no negative impact on your success at Mohawk College. A member of the research team and/or the Testing Centre invigilators are available to answer any questions you might have about the tests, scoring process or research project.

Possible Risks and Discomforts: These assessments are not expected to evoke any strong emotions or pose any risks to you. If, however, the test-taking process causes you any discomfort, or if you get tired from the time spent completing the assessments, you may choose not to complete any section or withdraw from the study at any time. However, please note the thresholds for receipt of incentives outlined below.

Possible Benefits: Learning about how students' skills develop throughout college is an important research activity for Mohawk College. What we learn through this research will help us continue to improve the programs and services we offer future students and to better communicate the value of our diplomas, degrees and certificates to the public. As a graduating student, these assessments offer you an important opportunity to reflect on and communicate the essential skills you have developed throughout your program to prospective employers and/or future academic institutions. For your reference, test results can be made available to you immediately following your assessment.

Confidentiality: Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. Part of this research will involve assessing the academic performance and registration records of those who have consented to the use of their assignments. Researchers will require access to your academic records, including your GPA. This information will not be linked to your name or any other personal identifier, except insofar as it is necessary to match data from the rubric scoring with your other academic information like grades and personal information like age and gender. This linkage will be made by Mohawk's Department of Institutional Research and Data Analytics who already work with this data on a regular basis. Researchers will not be provided with any personal identifiers.

Participation and Withdrawal: You can choose whether to participate in this study or not. If you volunteer to be in this study, you may withdraw at any time with no consequences. You may exercise the option of removing your data from the study at any time by contacting Pamela Ingleton, whose contact information appears below. The investigators may withdraw you from this research if circumstances arise that warrant doing so.

Note: Your data will only be used if you completed Assessments for Success (AFS) prior to starting your courses at Mohawk. While you are able to participate in this testing regardless of whether you completed AFS, your results are only relevant if they can be compared to previous test results.

A summary of the results will be posted at www.heqco.ca.

Procedures

To participate, please read and complete this form; submission of the form acknowledges your consent to participate. Depending on your program and preferences, there may be up to five (5) separate tasks to complete as part of this pilot:

1. **ACCUPLACER Reading Comprehension Assessment:** This test assesses your ability to understand and interpret what you read. It is the same reading test you took before starting at Mohawk. This test is untimed but typically takes no more than 1 hour.
2. **ACCUPLACER WritePlacer Assessment:** This test assesses your ability to write effectively. It is the same writing test you took before starting at Mohawk. You have up to 1 hour to complete it.
3. **Math Assessment Test** (either Business or Comprehensive Technical, where applicable): This test assesses your foundational mathematics ability. It is the same mathematics test you took before starting at Mohawk. You have up to 1 hour to complete it.
4. **Post-Assessment Questionnaire:** These questions ask you about your experience completing each of the tests. We ask that you complete one questionnaire for every test you take. This portion of the assessment is untimed, but should take no more than 5 minutes total.
5. **Student Exit Survey:** These questions ask you about your experiences as a student and attitudes toward learning. They represent a portion of the survey you completed before starting at Mohawk. This portion of the assessment is untimed, but should take no more than 10 minutes and can be completed in the Testing Centre or on eLearn in your own time.

Student Incentive

By consenting to participate in this study, you will be provided with a **\$15 Amazon gift code for every test you complete** and a **\$5 Amazon gift code for completion of the Student Exit Survey (up to a total of \$50)**. Amazon gift codes will be emailed directly to participants no later than April 30, 2019. To be eligible for this incentive, you must satisfy the following conditions:

Assessment	Incentive Threshold
ACCUPLACER Reading Comprehension	Minimum 15 minutes
ACCUPLACER WritePlacer	Minimum 300 words or 30 minutes
Mohawk Math Assessment Test	Minimum 15 minutes
Student Entrance Survey (excerpt)	Completed
Post-Assessment Questionnaire	Completed (one for each test taken)

If you have questions about the study, please contact **Pamela Ingleton, Learning Outcomes Assessment Consultant**, pamela.ingleton@mohawkcollege.ca, 905-575-1212 x4277.

Right of Participants

You may withdraw your consent at any time and discontinue participation without consequences. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the Mohawk College Research Ethics Board (MCREB). If you have questions regarding your rights as a research participant, contact: **Mohawk College Research Ethics Board (MCREB)**, reb.coordinator@mohawkcollege.ca, 905-540-4247 x20304.

Testing Preferences

Which of the following tests are you interested in taking?
Please select all that apply.

- ☐ Reading Comprehension
- ☐ Written Communication
- ☐ Mathematics (Business and Engineering students only)

Are you interested in completing the Student Exit Survey?
This can be done while testing or on eLearn in your own time.

- ☐ Yes
- ☐ No

Do you require testing accommodations?

- ☐ Yes
- ☐ No

Would you prefer to write the ESL (English as a Second Language) version of the Communications tests? (Reading and/or Writing)

- ☐ Yes
- ☐ No

Do you require testing accommodations?

- ☐ Yes
- ☐ No

Would you prefer to write the ESL (English as a Second Language) version of the Communications tests? (Reading and/or Writing)

☐ Yes

☐ No

CONSENT STATEMENT

SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the study ***Assessing Basic Cognitive, Critical Thinking and Transferable Skill Development in College Students from Admission to Graduation*** as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. Submission of this form indicates I agree to participate in this research.

Name of Participant (please print)

Date

Signature of Participant

Your contact information

This information is required for tracking purposes only. We require your email address to provide you with a copy of the consent form, as per research ethics guidelines.

Full Name: _____

Email Address: _____

Student Number: _____

School (select one):

- ☐ Business, Media & Entertainment
- ☐ Community, Justice & Liberal Studies
- ☐ Health
- ☐ Engineering Technology
- ☐ Other

Appendix F

Post-assessment Questionnaire

Instructions: Reflecting on your experience completing the test, please respond to the following questions by indicating the degree to which the criteria below describe your mindset or feelings toward the test and your test performance.

There are no right or wrong answers and you are encouraged to be as honest as possible.

	Not at all/ None			Somewhat/ Some			Extremely/ A lot
A. How motivated were you to do well on the test?	1	2	3	4	5	6	7
B. How much effort did you put into the test?	1	2	3	4	5	6	7
C. How confident are you that you did well on the test?	1	2	3	4	5	6	7
D. How much do you care about your results on the test?	1	2	3	4	5	6	7
E. How comfortable were you taking the test?	1	2	3	4	5	6	7

Appendix G

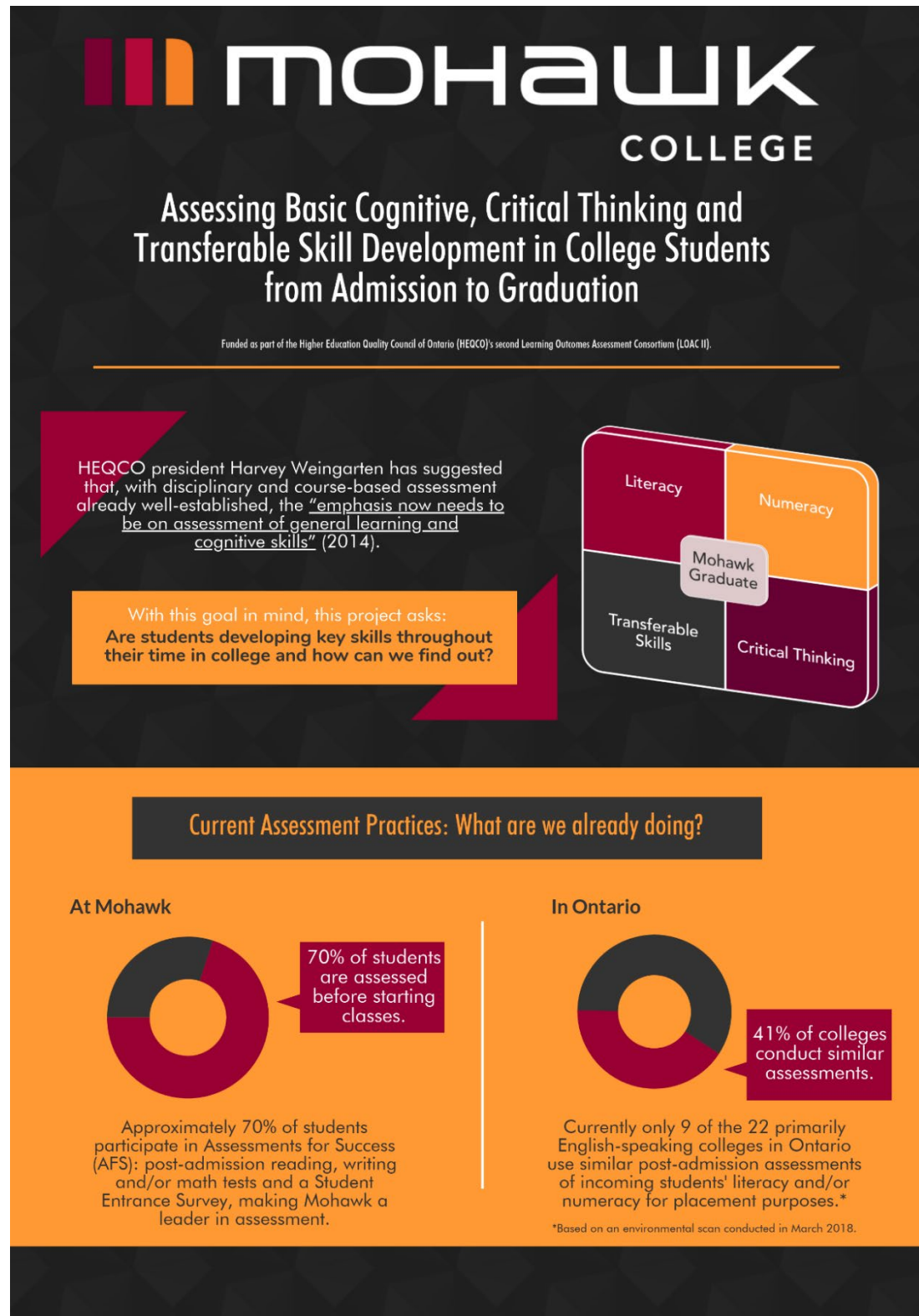
Phase II Instrumentation

Instrument	Assessment Construct				
	Reading	Writing	Mathematics	Critical Thinking	Other
ACCUPLACER Classic Tests	<ul style="list-style-type: none"> • Reading comprehension • Identification of main ideas • Ability to make inferences • Ability to distinguish between direct statements and secondary or supporting ideas 	<ul style="list-style-type: none"> • Focus • Organization • Development and support • Sentence structure • Mechanical conventions 			
Mohawk Math Assessment Test (Business Math)			<ul style="list-style-type: none"> • Fractions • Decimals • Percentages • Order of operations • Laws of signs 		
Mohawk Math Assessment Test (Comprehensive Technical Math)			<ul style="list-style-type: none"> • Fractions • Decimals • Percentages • Order of operations • Laws of signs • Exponents • Basic algebra • Equations • Algebraic fractions 		

			• Radicals		
VALUE Rubrics	<ul style="list-style-type: none"> • Comprehension • Genres • Relationship to text • Analysis • Interpretation • Reader's voice 	<ul style="list-style-type: none"> • Context of and purpose for writing • Content development • Genre and disciplinary conventions • Sources and evidence • Control of syntax and mechanics 		<ul style="list-style-type: none"> • Explanation of issues • Evidence • Influence of context and assumptions • Student's position • Conclusions and related outcomes 	
Student Entrance Survey					<ul style="list-style-type: none"> • Confidence • Commitment • Career clarity • Perceived program value • Perceived family/community support • Autonomy • Environmental mastery • Personal growth • Positive relations with others • Purpose in life • Self-acceptance
Post-assessment Questionnaire					<ul style="list-style-type: none"> • Motivation • Effort • Confidence • Commitment • Comfort

Appendix H

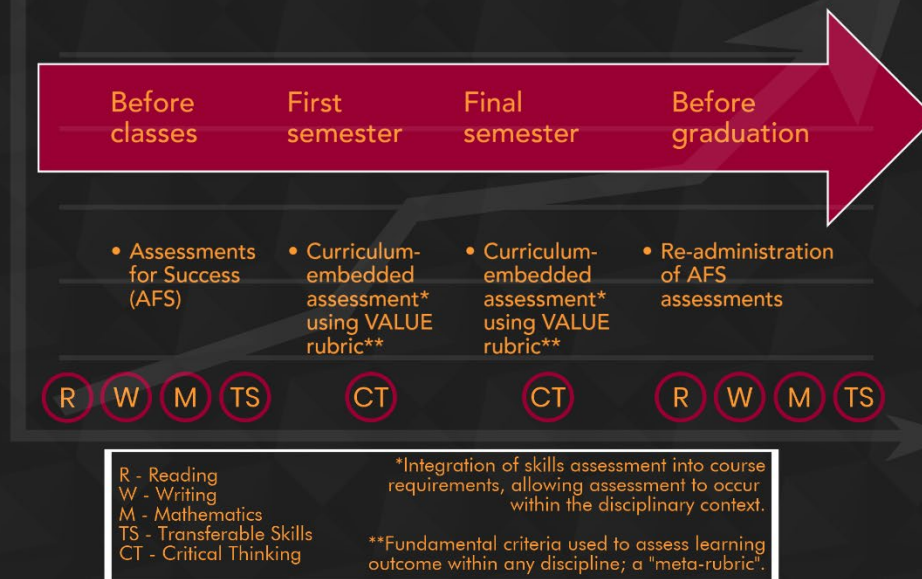
LOAC II Visual Overview



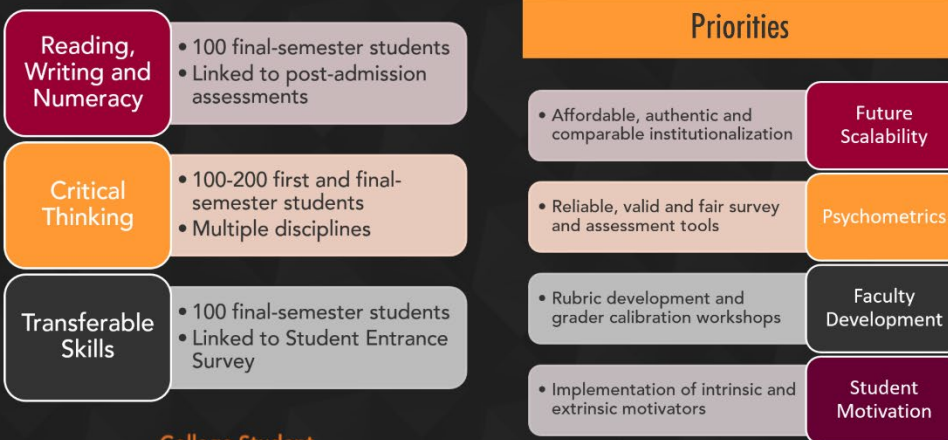
Institutional Skills Assessment: What are we planning to do?

Our plan to assess generic skill development:

1. Re-administer Assessments for Success at the end of programs.
2. Assess existing assignments using validated rubrics.



LOAC II, Phase II: 2018 - 2019 Pilots



College Student
Success Innovation Centre
Research. Solutions.
And everything in between.
mohawkcollege.ca/cssic

MOHAWK

Appendix I

LOAC Classroom Visit Protocol

1. **Use CRN to pull class list.** CRNs should be listed in the meeting invite, but are also listed on the tracking spreadsheet (attached).
2. **Email invitation to participate to all students (BCC) shortly before your scheduled visit** (roughly half an hour to an hour beforehand). Please note: there are different invites for assignment permission and testing; they are labelled accordingly.
3. **Visit classroom: introduce project, explain consent process and answer questions using prepared PPT presentation.** Please note: there are different presentations for different programs; they are labelled accordingly and are all attached. Encourage students to open and complete consent form (if they are comfortable) while you are there.
4. Following classroom visit, **email eLearn News Item to professor, as well as PDF of presentation** (attached). (See provided text below; please note: there are two scripts, depending on whether the students were invited to consent to the use of their course assignment only or that and participate in the testing.)
5. Follow up with students twice ahead of April 19 deadline.

eLearn News Item text (emailed to professor for posting):

PERMISSION TO USE ASSIGNMENT ONLY

Thank you for inviting one of our researchers to visit your class. It was a pleasure to tell you about our research project on skills assessment and answer your questions. **We hope you will consider participating in our project, as the research cannot be successful without your involvement!**

We are requesting your consent to use your **ASSIGNMENT TITLE HERE** for our research. **You are not required to complete any additional work beyond the work already completed on your course assignment.** As discussed in class, our use of the assignments will occur after term and will in no way impact your grade. In preparation for the research, all identifying information will be removed from the assignments.

In acknowledgment of sharing your assignment and academic information for this study, **you will be entered into a draw to win 1 of 3 \$50 Amazon gift codes.** Amazon gift codes will be emailed directly to winners no later than April 30, 2019.

For your convenience, I have provided a direct link to the research consent form below.

Consent to use course assignment: <https://events.eply.com/LOACconsentform>

Please continue to reach out with any questions. We are always happy to talk about the project and entertain any comments or concerns.

Thank you so much for your participation and support of this important research!

Pamela Ingleton, Learning Outcomes Assessment Consultant

eLearn News Item text (emailed to professor for posting):

PERMISSION TO USE ASSIGNMENT AND PARTICIPATE IN TESTING

Thank you for inviting me to visit your class. It was a pleasure to tell you about our research project on skills assessment and to answer your questions.

We hope you will consider participating in all aspects of our project, as the research cannot be successful without your involvement.

You can participate by

- Consenting to the use of your **ASSIGNMENT TITLE HERE** assignment for assessment of critical-thinking skills (your identifying information will be removed; participation will have no impact on your grades).
- Participating in **reading, writing and mathematics testing**, either in Mohawk's Testing Centre (March 26 – April 4) or online (March 28 – April 10).
- Completing the **Student Exit Survey** at the Testing Centre or on eLearn in your own time.

For the critical-thinking assessment, **you are not required to complete any additional work beyond the work already completed on your course assignment.** All we need is your consent!

For the testing, we are offering **\$15/test**, in addition to **\$5 for completion of the Student Exit Survey**, for a total of **up to \$50**. These incentives will be emailed directly to you as Amazon gift codes no later than April 30, 2019.

You are responsible for scheduling in-person testing or online proctoring sessions for your tests at a time(s) that works best for your schedule. In-person tests can be booked directly through the consent form. Instructions on how to schedule online, remote-proctored tests any time, 24/7, will be emailed to you following receipt of your consent. **Note: Testing can take up to 3 hours (approximately 1 hour per test). Please be sure to plan accordingly.**

For your convenience, I have provided direct links to the research consent forms below. The Student Exit Survey can be accessed through eLearn (under "Mohawk Surveys"), though you must complete the testing consent form in order to participate.

Consent to use course assignment: <https://events.eply.com/LOACconsentform>

Consent to participate in and register for testing: <https://events.eply.com/Consent2>

Please continue to reach out to me with any questions. I am always happy to talk about the project and entertain any comments or concerns.

Thank you so much for your participation and support of this important research!