The Annual Report for Applied Critical Thinking at RIT

For

2021-2022

Dr. Jennifer L. Schneider, CIH

Eugene H. Fram Chair in Applied Critical Thinking

2022

Contents

Executive Summary

In 2021-22, the Applied Critical Thinking initiative at the Rochester Institute of Technology (ACT@RIT) continued under the leadership of Dr. Jennifer L. Schneider. ACT@RIT is framed, functional and ready to meet greater challenges. We have entered a new phase of ACT which will grow ACT through MIND Field focused critical thinking experiences for students and professional audiences that will continue to fulfill university goals.

This year, we hosted 18 cosponsored Fram events, and two Institute-wide speaker events that were successful, with approximately 1350 registered. For all events, in person and real time attendance dropped, sometimes as much as 50%, but later viewing increased, as the asynchronous engagement became an increasing part of the model.

During this year, there were 1087 scholarly artifacts. Of those artifacts, faculty designated 189 (17%) artifacts as ACT.

Future recommendations: The opportunity to leverage our ACT@RIT initiative to advance RIT on many fronts is apparent. The academic year 2022-2023 will focus on:

- Increasing engagement with the ACT initiative in our graduate programming and support the growth of the ACT skillset with our graduate students as our next generation of teachers, researchers, and leaders.

- Continuing the MIND Field experience as part of RIT Certified and for internal and external audiences to build additional, focused experiential opportunities to practice ACT.

- Continuing to develop and export the RIT ACT success to off campus partners and thereby, grow the ACT impact beyond RIT, including seeking external funding opportunities.

- Increasing connections between traditional and unique educational experiences across RIT including ACT as the key lynchpin and pivot point to support other major RIT initiatives, for example, RIT Certified, KEEN, growth mindset, Grand Challenges, Tech, Art & Design, etc.

- Development and benchmarking of data for continuous improvement in collaboration with the Assessment Office.

Purpose and Guiding Aims

The purpose of this report is to summarize the ACT efforts and accomplishments for the 2021-22 academic year, list recommendations for future efforts, and define benchmarks for the ongoing evaluation of our progress.

Establishing the reputation of RIT as a national leader in Applied Critical Thinking relies upon a university-wide commitment coupled with a notable external contribution to the development of Applied Critical Thinking. To ensure success, the university is (1) continuously improving a process grounded in performance measures and student achievement assessment, (2) continually seeking and sharing best practices and opportunities with internal and external partners, (3) integrating high-quality ACT learning opportunities across the student experience, and (4) facilitating excellence in the development of Applied Critical Thinking in our students and our world.

Initiative Framing and Rationale

Our global society has high expectations. Decision makers must think critically to assess and strategize within complex, interconnected systems; continually adapt to rapidly evolving technological, aesthetic, and social environments; and manifest new ideas, both individually and collectively.

In response, RIT created the **Applied Critical Thinking (ACT@RIT)** initiative to foster the application of critical thinking – *the exercising of effective thinking in any context*. **Application of critical thinking connects this performance chain of knowing-doing-creating**. The initiative is guided by several working definitions, including:

- **RIT University Education Goal and Essential Program Outcome: Critical Thinking** refers to those processes required to understand and evaluate complex claims of various sorts. It involves the evaluation of information, evidence, arguments, and theories, and the contexts in which these are encountered. It entails the questioning of different and competing perspectives, and challenging the (sometimes hidden) assumptions and inferences that determine what will count as evidence or argument. Critical thinking is learning to think in a disciplined and evaluative manner, to analyze and interpret the processes by which various claims are made and reliable conclusions are reached (RIT Essential Outcomes).
- **Critical Thinking Across the Curriculum: Critical thinking is** "the ability to identify, analyze, construct, and evaluate evidence and arguments in a deliberate and rigorous way" or "The growth of educated thinking." (C. Sheffield, Critical Thinking Across the Curriculum Report, 2014).
- **Fram Advisory Board:** "At RIT, ACT is an active form of engagement, drawing from our diverse domains and deep expertise to address the questions and challenges that we face. As the uncertainties and the magnitude of impacts increase in our complex world, we must now consider a wider range of possible outcomes. To do this well, we need to employ thinking that draws from multiple, diverse environments to more fully inform our evaluation and resultant strategies." (Fram Advisory Board. Fram Award at Imagine).

RIT systematically integrates critical thinking across the student experience to develop critical thinking in diverse settings. ACT@RIT is cultivated through learning the value of *defining* the quality of information, *analyzing,* and *developing* a point of view, *solving* of complex problems, and *creation*. These elements are embedded into our curriculum and practiced intentionally in ever-broadening and diverse environments of experiential learning. RIT's renowned experiential learning program, the prolific use of projects and teams, community service programs, international experiences and programs, entrepreneurship and research opportunities, and participation in student groups in and out of the classroom are all valuable to the initiative. The ACT skills students develop transfer into every other area of life and are the impetus for growth, professionalism, and creative expression, empowering our alumni to realize their unique contribution to our world through whatever path they choose or create. The visual map of the effort is below:
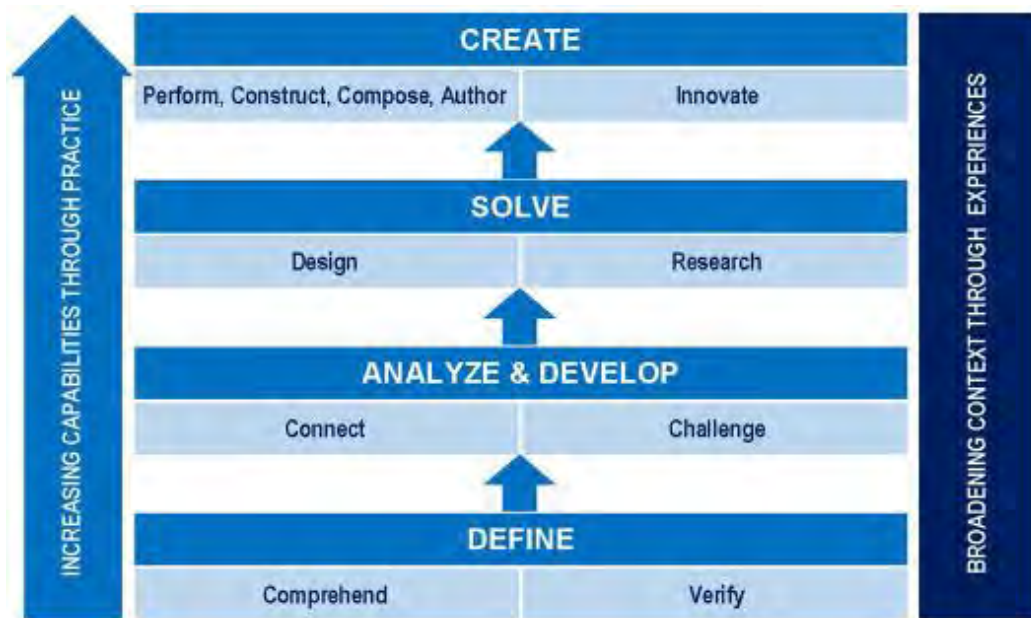

Figure 1: ACT Skill Development Map

2021-22 Management & Structure of the Initiative:

The ACT initiative is led and the report is compiled by the Eugene H. Fram Chair in Applied Critical Thinking (Fram Chair), Dr. Jennifer L. Schneider, CIH. In addition to her role as the Fram Chair, Dr. Schneider is also a professor in Civil Engineering Technology, Environmental Management and Safety within the College of Engineering Technology at RIT, and leads the cross-disciplinary Collaboratory

for Resiliency & Recovery at RIT. She has expertise in HAZMAT, risk-based decision-making, and global resilience. The internal Fram Advisory Board (FAB) of Rochester faculty and staff, the Fram alumni-driven Executive Advisory Board (FEAB, previously named the Fram External Advisory Board), and the International Fram Advisory Board (IFAB) all advise Dr. Schneider. Ms. Tamaira Brown, Senior Staff Assistant, and Ms. Linda Lagree provided part-time administrative support. Further information on the history of the Fram/ACT initiative can be found in *Appendix 1*.

Fram Advisory Board (FAB)

Most members of the Fram Advisory Board chose to remain on the board for 2021-22 (Table 1). This board has representation from the colleges and degree granting units as well as Student Affairs. The duties of the board members are to guide Rochester-based ACT efforts and advocate for/be a conduit for ACT@RIT.

Table 1: 2021-22 Fram Advisory Board

- **Heath Boice-Pardee**
  Student Affairs
- **Corey Crane**
  College of Health Sciences & Technology
- **Mike Eastman**
  College of Engineering Technology (Associate Dean Representative)
- **Christine Keiner**
  College of Liberal Arts
- **David Long (replaced by Heidi Schlegel in October 2021)**
  College of Art & Design
- **Rachel Mazique**
  National Technical Institute for the Deaf
- **Sylvia Perez-Hardy**
  Golisano College of Computing & Information Sciences
- **Patricia Poteat**
  College of Engineering Technology
- **David Ross**
  College of Science
- **Brian Thorn**
  Kate Gleason College of Engineering
- **John Ward (replaced by Rick Lagiewski in January 2022)**
  Saunders College of Business

Fram Executive Advisory Board (FEAB)

The Fram Executive Advisory Board is selected from RIT's notable alumni (Table 2). These board members bring an external point of view and guidance to the initiative. The current members serving 2- or 3-year renewable terms are:

Table 2: 2021-22 Fram Executive Advisory Board

- **Peter Bealo** (College of Art and Design [former College of Graphic Arts & Photography], Photographic Science, BS 1980)
  Consultant in Data Analysis, Public Education Policy, Marketing & Project Management

- **Joseph Boyd** (COS, College of Science, Chemistry, BS 2004)
  CEO, Financial Advisor, Boyd Capital

- **Robert Jacoby** (Civil Engineering Technology, Environmental Management, BS 1977)
  Consultant to the Energy Industry
  Former Global Manager at Royal Dutch Shell

- **Ellen Moser** (Computer Technology, Software Science, BS 1981)
  Treasurer, East County Fellowship
  Former Executive Director, Kaiser Permanente

- **Chris Petescia** (College of Art and Design, Graphic Design, BFA 2005)
  Owner, Kessel Run Ventures

- **William Standwill** (College of Graphic Arts & Photography, Printing Management & Sciences, Graphic Communications, BS 1988)
  Head of Commercial, Sherlock Biosciences

- **Krista Vardabash** (Saunders College of Business, EMBA 2012)
  Business Development Manager - Exec Education, RIT Saunders College of Business

- **Amanda J. Weissman** (College of Engineering, Electrical Engineering; College of Science Materials Science, BS/MS 2009)
  Lead Systems Engineer, Lockheed Martin

International Fram Advisory Board (IFAB)

The International Fram Advisory Board represents each of RIT's international campuses (Table 3). These board members bring an international point of view and guidance to the initiative. The current members serving 2- or 3-year renewable terms are:
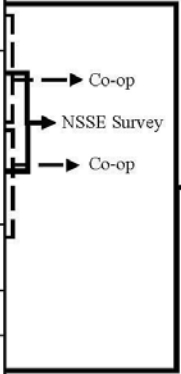
Table 3: 2021-22 International Fram Advisory Board

- **Albina Balidemaj** -- Rochester Institute of Technology – Kosovo
- **Francis Brassard** -- Rochester Institute of Technology – Croatia
- **Jamaal Pitt** -- Rochester Institute of Technology – Dubai
- **Jude Okpala** – Rochester Institute of Technology – China

General Education and Program Student Learning Outcomes

The teaching and assessment of ACT@RIT is managed through a comprehensive general education and program strategy founded on student learning and program goals. General education outcomes have been codified by the governing committee, and adopted accordingly. The abbreviated outcomes are listed in the professional practice column of the chart below because these inform the building of a competent, professional, and capable critical thinker. The full description of ACT student learning outcomes is noted in *Appendix 2*. RIT measures student critical thinking at several opportunities along the student experience as follows:

- University level Essential Program Outcomes assessed in designated general education courses
- Program learning outcomes
- Cooperative employer feedback
- National Survey of Student Engagement
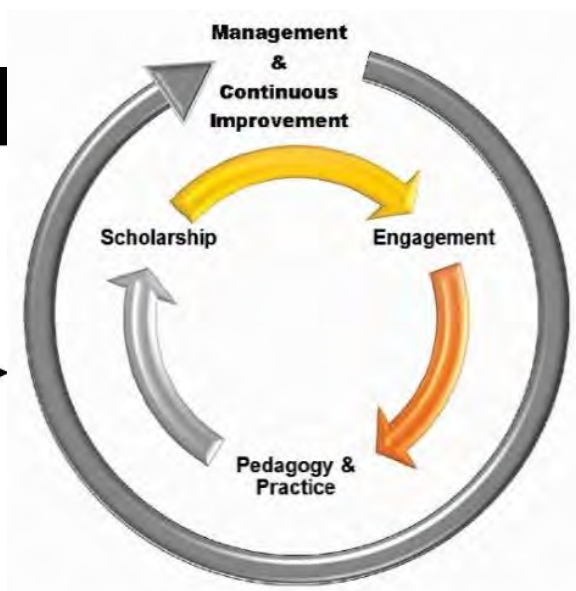- RIT's alumni survey broad in scope

Figure 2: ACT Outcomes Map

Applied Critical Thinking Strategic Action Plan (2022-25)

The Applied Critical Thinking (ACT) Strategic Action Plan (SAP) for 2022 -25 is meant to guide the ACT initiative and reflect ACT related goals of the Rochester Institute of Technology (RIT) Strategic

Plan for 2025. As an initiative focused on a core 21st century skill, uniquely manifested by RIT, the ACT effort directly supports university goals and the growth of the university programming, reputation, and is also crucial to the blending and growth of the unique capabilities of RIT. ACT plays a particular formative role in these university goals:

- **GOAL 1**: Enroll and support a diverse mix of increasingly creative, multi-talented students.
- **GOAL 4**: Continue to attract and retain world-class faculty committed to elevating RIT's collective excellence in scholarship, teaching, and service.
- **GOAL 8**: Design and integrate unique curricular experiences at the intersection of RIT's programs in Technology, Art, and Design (TAD). Design new and revise existing programs in non-STEM disciplines that increase enrollment through this same distinctive integrated core.
- **GOAL 16:** Create a distinctive RIT brand and develop a supporting content marketing strategy that makes use of all relevant media.

The new Strategic Action Plan (SAP) is through 2025, and corresponds to the university strategic plan, the SAP is a guidance document that is reflected in the annual plans of work for the Fram Chair office.

Highlights of Accomplishments in 2021-2022

Accomplishments include 18 events with over 1350 participants with the same operational budget first allocated in 2011. In a new model, we seek to support a broad range of ACT that increases both our impact and our reputation across the campus as a partner in advancement of applied critical thinking in each domain, and across domains.

Events

Events are an important visible mechanism to support engagement both for the RIT community and for the wider community. We had 18 events with the number of attendees over 1350. Some of these events were held via zoom, but we were able to have some in person as COVID- 19 restrictions allowed.

Critically Thinking about COVID at RIT

Sponsored by the Eugene H. Fram Chair in Applied Critical Thinking, Critically Thinking About our **COVID Stories** was a day of webinars that allowed RIT faculty, staff, and students to discuss how COVID has affected their experience at RIT. With sessions from 9am to 6:30pm, it was a full day of conversations and presentations related to learning, teaching, and existing at RIT during the pandemic.

There were three sessions we as notetakers and archivists felt were particularly impactful— Beyond Rochester, Navigating Change and Work/Life Balance, and Combating Misinformation. These sessions offered powerful

and truly beneficial information to all those in attendance and we would like to share some of the wisdom from that day (*See Appendix 5*).

Date	Co-sponsor	Description (include panel, speakers, link to event, etc.)	Registered
09/3/21	Gray Matters	*"Can we stop #StopAsianHate?"*	7
09/21/21	Saunders College of Business	2021 Fram Signature Lecture – Keynote Speaker Sean Bratches (BS '91). Alumnus Bratches '83 '91 was named the Saunders College Distinguished Alumni award in 2015. Bratches is the former Executive Vice President, Sales & Marketing for ESPN and most recently was Managing Director of Commercial Operations for Formula 1 as well as being an advocate for RIT students in his industry. He discussed how thought proceeded strategy in the leadership, vision, and innovation that has defined his career with Formula 1, ESPN, and others.	396
10/1-2/21	Thought At Work	Thought At Work Design Conference - Thought At Work is a two-day student-run, student-focused design conference held every fall at RIT. Organized by RIT students, the event connects top industry professionals with hundreds of passionate students for a weekend of one-of-a-kind inspiration, collaboration, and instruction.	122
10/15/21	RIT Croatia	Science and Research Seminar: Applied Critical Thinking at RIT- a university initiative	40
10/20/21	RIT Dubai	Advice on Critical Thinking: A Pragmatic Perspective on Critical Thinking for the Real World	10
11/5/21	RIT Croatia	Roundtable on Mistakes in Critical Thinking	27
11/5/21	Gray Matters	"Why are you vaccinated, or not?"	8
AY 2021-22	RIT China	Research Consortium - The consortium is made of teams of students, who have proposed to solve specific human problem. They are in the consortium for the school year in order to accommodate their class schedules and other responsibilities. However, they have interim deliverables, including progress reports with mentor (each team has its own schedule), presenting their work at the 2nd Annual RIT Undergraduate Global Humanities Conference (see Appendix 4) and/or participating in IMAGINE RIT. Ultimate goal is to publish the research in a journal.	20
1/15/22	School of Interactive Games and Media	The AT&T & RIT RoctheChange Game Jam	67
2/4/22	Gray Matter	"Is it time for gender abolition?"	8
3/15/22	Fram Boards	Critically Thinking About Our COVID Stories	488
3/23/22	Spring Speaker Lecture with COS	The Role of Diversity in Critical Thinking – featuring Dr. Rick Kittles	96
4/1/22	Gray Matter	"Is climate change racist?"	10
4/5/22	Graduate Showcase	Graduate Education Week - "How Thinking Session" with Dr. Jennifer Schneider, Eugene H. Fram Chair of Applied Critical Thinking	15

4/19/22	RIT Global Campuses	Global Humanities Conference, Keynote Speaker	40

Other events included the following:

- The Fram Office of Applied Critical Thinking was proud to be a [sponsor for The School of Interactive Games and Media's 2022 Student Game Showcase](#). The categories for the Showcase were analog game design, excellence in audio, excellence in design, excellence in narrative, excellence in visual art, technical excellence, game impact, game experimental, biggest dreamers, and grand prize. Our office sponsored the Game Impact category. It was decided the prize money from each sponsor would go to a charity in the name of the team that won. Emily Horton, Veronica Vitale, Gavriel Miles, Rye Ress, Savvy Blaum, Abby Cavalluzzi, and Connie McGinnis won the "game impact" with their game, "Boiling Over". They chose Montgomery Pride United as the organization for their charitable choice. (40 students participated)

- **DEI and ILI Workshops:** The Fram Office of Applied Critical Thinking participated in two workshops hosted by the Graduate School and facilitated by Taj Smith. They were Understanding U.S. Diversity (on February 17, 2022 – 20 registered participants) and Establishing Inclusive Classrooms Workshop (on March 17, 2022 – 17 registered participants).

Creating Engagement

Despite the ongoing pandemic, the ACT initiative still remained a visible part of the RIT community and experience. As part of our orientation to being always relevant and useful, a portion of our efforts were focused on teaching and learning during the pandemic, understanding the science and impact of COVID-19 through critically thinking about where we consume our news, and assessing the impact of this ongoing emergency. Intentionally, Fram also cosponsored several Gray Matters events surrounding issues of race and equity to frame the larger discourse across the nation and our world. Engaging in applied critical thinking was more critical than ever.

Scholarly Artifacts: During this year, there were 1055 scholarly artifacts. Of those artifacts, faculty designated 173 (16%) artifacts as ACT. Examples include:

- Zhao, Lu Sun and Xingzhuang. "Coupled Dynamics of Vehicle-Bridge Interaction System Using High Efficiency Method." Advances in Civil Engineering. (2021): 1-22. Web. &#x002A
- Chen, Y., & Hsieh, Y. (2021). "The Impact of Perceived Risk and Image and Personal Risk Profile on P2P Accommodation Purchase. EuroCHRIE Federation Conference.

- Udeani, Chukwudi, Paulina Jaramillo, and Nathaniel J Williams. "A techno-economic and environmental assessment of residential rooftop solar-Battery systems in grid-connected households in Lagos, Nigeria." Development Engineering 6. (2021): 100069. Print.

Communication Plan: Nine issues of the Fram Focus newsletter were published, with 12 Community of Practice members featured. These newsletters highlight upcoming Fram events, co-sponsored events, our Community of Practice, and feature relevant news and scholarly articles selected by Eugene H. Fram.

- The Fram Chair was featured in two articles related to critical thinking during the pandemic:
    - Zeitchik, S. (2021, December 24) On a yacht off St. Barts, the future of covid testing is taking shape, *Washington Post*
    - Kucko, N. (2022, January 19) RIT sees progress with wastewater COVID testing program, *ABC Channel 13 WHAM*

Teaching Circle: The way information is consumed and used to develop knowledge has changed, especially for young people. New methods of gaining knowledge also impact our information application within our disciplines. This teaching circle focuses on ACT (Applied Critical Thinking) with particular emphasis on developing best practices for (1) student capacity to evaluate information quality and use information from various sources across the disciplines, and (2) practicing the art of collegial conversations and critique in the disciplines. This compendium could be shared on the Fram website.

We acknowledge that "information acuity" is a crucial skill broadly developed in general education. In addition to supporting that, this teaching circle aims to address the need to firmly translate foundational ACT also into discipline-based thinking. Possible areas for exploration include such initial ideas as:

- How do we define information?
- How do we evaluate the claims and data behind the scientific headlines?
- How does public perception impact the view and success of technology and innovation?
- How can we develop skills for conversations and discourse across opposing views?
- Can the skill of critique in art lead us toward more fruitful interactions in other arenas?
- How has our emerging style of knowledge consumption driven differing views of what constitutes fact?
- How should we "research" facts from a variety of sources, including social media?

Every few weeks, we hosted an approximately one-hour Zoom session. The circle is limited to 8-12 faculty & staff and each member develops and shares best practices across this crucial topic. This teaching circle is a shared experience, facilitated by Jennifer Schneider and several members of the Fram Advisory Board* and RIT faculty. They are:

Heath Boice-Pardee*	Mark Nieland
Cory Crane*	Sylvia Perez-Hardy*
Mike Eastman*	Patricia Poteat*
Trent Hergenrader	Cynthia Tawaf
Sharon Mason	Brian Thorn*
Blessing Emerenini	

Critical Thinking Course Highlights

- **Year One/365 course:** Dr. Schneider continued her association with Year One or 365 by serving on their advisory board as they offered this newly enhanced course and student experience. Content related to ACT is integrated into the 365 curriculum, and students complete a baseline perception assessment of their ACT skillset. This supports our ability to develop measures to evaluate their ACT growth over their RIT time. The Fram Office will collect final year data from students and use the analysis to support continuous improvement.

- **RIT edX** : The RITx course, Critical Thinking and Problem-Solving launched in 2017 as part of the Soft Skills Professional Certificate program, which was retired in 2020. The course has been available through the Leadership Essentials Professional Certificate program since July of 2020.

  - **RITX COURSE: CRITICAL THINKING & PROBLEM SOLVING**
    Launched: November 28, 2017
    Total Enrollments (as of July 1, 2022): 116, 773
    Verified (Paid) Enrollments (as of July 1, 2022): 4,251
    Passing Learners (as of July 1, 2022): 2,431

2022 Fram Award at Imagine

These awards highlight student achievements in critical thinking as part of the process of developing the exhibit. The annual awards are given for both small group and large group categories. (*See Appendix 3 for award winners and abstracts*)

Pedagogy & Practice

- Community of Practice & Exemplars: Our current Community of Practice membership now includes 73 RIT faculty and staff members in the ongoing CoP, CoP Disaster and the CoP College Course Advancement Team (CATs), broadly representing the university. Please note that some of these individuals have since retired or left RIT.

- Assessment: There are approximately 600 general education courses with confirmed ACT components and many program-level courses that support ACT@ RIT, by continuing to build our assessment strategy for ACT through these courses. Examples include:

  ➤ Longitudinal Study: The assessment processes for ACT continued to be an area of growth. This data will be used to inform and forward a broader longitudinal study examining the growth of student ability to apply critical thinking across their RIT student experience.

  ➤ Student Learning Outcomes & Rubrics: (See Appendix 2). Assessment results for each outcome are now available online. Dr. Schneider serves on the General Education Assessment Advisory Board and makes recommendations related to faculty engagement and recognition. Additionally, the council recommended a move to a new assessment schedule in which all four critical thinking outcomes will be covered in the same year. Review of the critical thinking outcomes (general education as well as the potential for program level) is ongoing.

  ➤ International Campus efforts: Each campus has engaged in applied critical thinking through their representative.

    ▪ **Rochester Institute of Technology – Croatia**
      o RIT Croatia participated in the COVID Stories event.
      o Participated in the RIT Undergraduate Humanities Conference
      o Our Research and Scholarship Committee organized a Roundtable on mistakes in critical thinking on November 5, 2021. The main intention behind this roundtable was to present specific examples of good critical thinking, and the ones that do not fall in that category. Also, one of the goals is to frame a good and useful description of critical thinking motivated by various fields of our research and intellectual interests.

- o Dr. Jennifer Schneider held a virtual lecture on Applied Critical Thinking on October 15, 2021.
- **Rochester Institute of Technology – Dubai**
  - o RIT Dubai conducted a Critical Thinking Workshop reviewing the ACT initiative at RIT as well as providing general strategies for increasing critical thinking during class lectures and in class assessments as well as providing specific examples of critical thinking activities. Examples of these specific activities included assignments focused on question formation, student-led discussions, and small class activities to encourage deeper analysis and reflection among students.
  - o Organized a speaker to represent Dubai for the COVID Stories event (Dua Weraikat).
- **Rochester Institute of Technology – Kosovo**
  - o RIT Kosovo took part or organized the following as they relate to Critical Thinking:
    - o Participated in the COVID Stories event
    - o Participated in the RIT Undergraduate Humanities Conference
    - o Participated in the "Character Building" workshop with the Kosovo Armed Forces including a two-hour workshop on the importance of critical thinking in character building in the military, by Albina Balidemaj
    - o Dr. Jennifer Schneider held a virtual lecture on Applied Critical Thinking on October 15, 2021
    - o Albina Balidemaj was a speaker in the "Global Convergence 2022 – Day 2: Best Practices in Global Collaborative Research & Scholarship" on April 6, 2022.
    - o Albina Balidemaj was featured on the Fram Community of Practice website: https://www.rit.edu/criticalthinking/albina-balidemaj
- **Rochester Institute of Technology – China**
  - o **Research Consortium**: There were 5 teams that submitted proposals for research beyond the classroom works, and the topics include the following:
    - o Research on the best way to make the hospital strain

management system contain accurate data and improve the management efficiency of personnel and strains.

- o Application problems and improvement design of blockchain technology in rental platform
- o Study of the influence of the media on the development of rural industry
- o Research on the Techniques and Domains in Educational Data Mining Based on Publication Data Summarized with the SPSS.

The research was successful. Each group worked for the 2021-2022 school year; they presented their research in either an RIT sponsored conference/showcase or public academic conference. Students in research topics 2 and 3 will participate in the forthcoming RIT 2022 Research Symposium.

- o **RIT Undergraduate Humanities Conference**: A three-day conference on the following theme: Post-COVID-19 and the Human Spirit. There were 12 panels of students' research and presentation plus respondents.
- o **Tiger House**: Participated in the RIT Student Leadership Group and led a session with a creative presentation on RIT China.

Fram Badge & The Mind Field

Working with the FEAB, our office continued development of a new experiential opportunity for students, nominally called the Fram Badge in ACT.

RIT Critical Thinking Certification
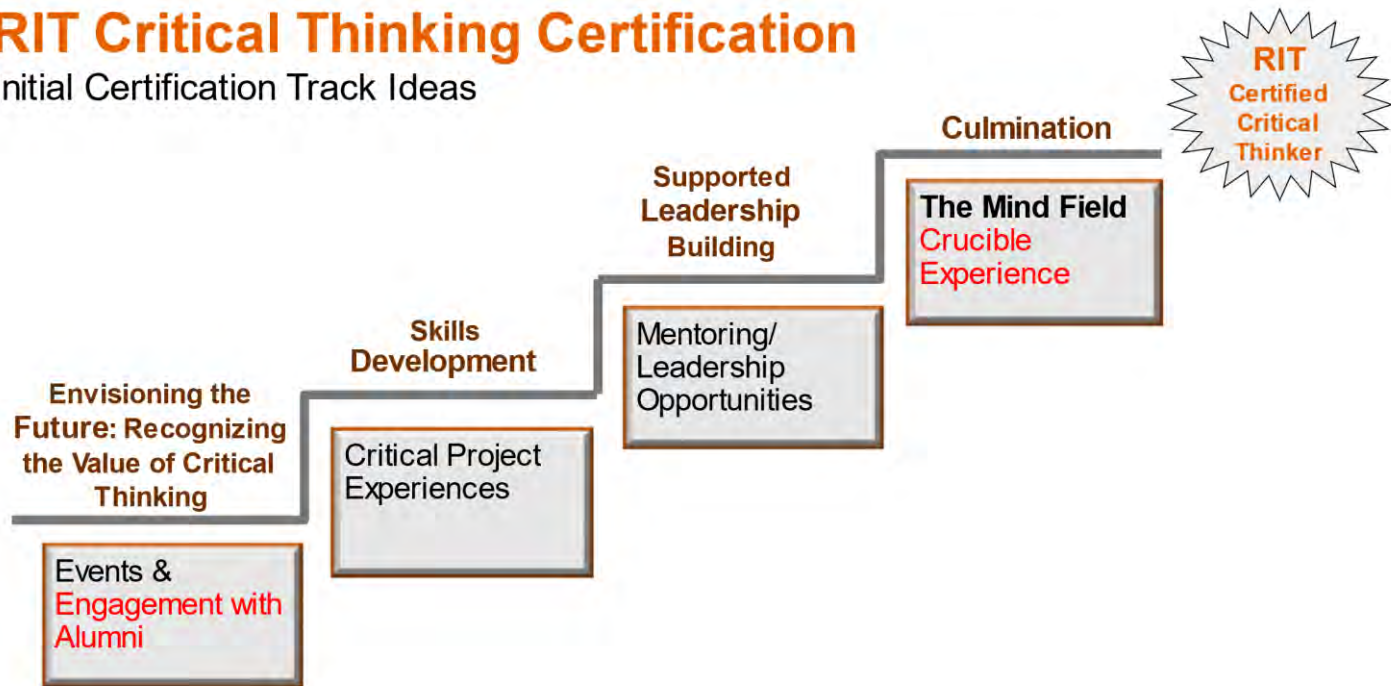Initial Certification Track Ideas

Figure: ACT Fram Badge

The Fram Badge is an exciting new development in the Fram Portfolio. At its core, the Badge is earned upon completion of a process that includes: 1) engagement with alumni and attendance at events with speakers of significance; and 2) demonstrated development of ACT as part of project and team experiences and completion of a MIND field experience, centered around wrestling with a complex problem for which there is no clear answer nor path to follow, especially in a group inter-major or cultural capacity.

The MIND field initiative was piloted this year and three recipients participated in the inaugural program.

- **Alex Lobos (CAD), Mary McLoughlin and Jung Whan (JP) Park: "Critical Making Workshop"** - How do designers solve problems? Where do you start? How can you take an idea and turn it into a physical form? These are just some of the questions we will be answering in this workshop. Critical making is a process that allows anyone to analyze, compare, and learn through making. This workshop will cover design thinking, ideation, translation of ideas

from 2D to 3D, rapid prototyping, and communication of ideas to create a discourse.

- **Erin Auble (NTID) and Sacha Glasser: "Where Did the Tools Go? Painting Outside the Box"** - When traditional paint tools are absent, what can you create? This challenge will allow groups to design a large painting, invent and create their own tools and execute creations using theatrical painting techniques.

- **Hinda Mandell (COLA): "The Happy Haptic Toolbox for Problem Solving"** - This project centers a tactile approach to overcoming roadblocks and obstacles that students may commonly experience in campus life. By focusing on the manipulation of objects through touch – students will develop community, gain tangible skills that are tactical, and work through real-life challenges by building and emphasizing the mind-hand-community connection.

NSF Grant Proposal

During this academic year, Dr. Schneider submitted a proposal to the National Science Foundation (NSF) entitled the Growth ACTion project. EAGER GERMINATION: Growth ACTion: Transforming next-gen researcher capacity to formulate research questions using Growth Mindset, Applied Critical Thinking and Problem Solving. The project, Growth ACTion, will transform next generation STEM researchers' capacity to formulate impactful research questions to address multidimensional and large-scale societal needs (i.e., Grand Challenges) requiring multi-domain problem-solving at Rochester Institute of Technology (RIT) and beyond Growth ACTion will cultivate more effective research questions and strategies to catalyze research that benefits society. This program will enhance graduate student training and mentoring through recruitment, research experiences and participation in the Growth ACTion program. In addition, it will provide an opportunity for professional development practice for faculty members to develop their mentoring skills towards promoting a growth mindset. The program will also enhance the infrastructure for research and education through the proposed activities related to question development and the application of critical thinking and problem solving at RIT and other institutions that adopt the program. The Growth ACTion program, along with best practices, will be disseminated within and external to RIT through presentations, peer-reviewed publications, website development and social media outlets.

The proposal was not funded and will be resubmitted in a future cycle.

External Engagement Efforts

RIT continued to engage externally in many efforts, and have begun making strides in creating external partnerships and building its reputation over the past year, including:

- Continued a collaborative relationship with the University of South Florida - **A Helene Robinson, Ed.D., Ed.S.** Director of Critical, Creative, & Design Thinking Program, Arts Integration Coordinator/USFSM Incredi-Bull Faculty Member, Department of Curriculum, Instruction & Learning/College of Education, to share assessment systems, policies, and strategy.
- Provided materials to peer university partners upon request. Coming out of the pandemic, it has been extremely challenging for universities to advance teaching and learning initiatives and sharing and benchmarking of efforts is key to success. As a result, we began to share our methodology and tools with similar efforts.
- **Supporting Corollary RIT Initiatives & Campus Partners:**
- **Alumni Relations:** Alumni Relations continues to build programming for alumni that is relevant to their goals and creates a relationship to the university and this collaboration with ACT continues to grow.
  - The 2022 Fram Spring Lecture featured alumnus Dr. Rick Kittles who is currently the Professor and Founding Director of the Division of Health Equities for City of Hope. Dr. Kittles spoke about how the quality of critical thinking is directly related to the diversity of data informing that thinking, with an emphasis on the importance of collecting diverse data.
  - The Fram office also continues to collaborate with the RIT Graduate School. Current efforts include building the guidelines for the Graduate Teaching Assistant position training using ACT and cosponsoring Graduate Education Week events such as the "How Thinking Session" where graduate students from diverse programs and backgrounds share how their thinking has changed over the course of their graduate experience.

Integration with RIT's Major Goals

The importance of ACT in RIT's long-term strategy is evident. Development of leaders within and at the intersection of technology, art and design requires fostering complex visionary thinking that is grounded in ACT skills. Applied Critical thinking has a role to play in the integrative learning path with RIT, and this effort continues to increase the impact of the ACT effort.

Challenges to ACT Integration

The ACT at RIT initiative faces challenges that must be overcome collaboratively. RIT must continue to foster engagement of our own RIT community by establishing both top-down and bottom-up support and build connections at both the general education and program level, and through

extracurricular activities outside degree programs. Advancing RIT's reputation in the university community is of paramount importance. It is a simple truth that there are many priorities and distractions on a college campus that make it difficult to emerge from the crowd of opportunities, particularly without a clear connection to the disciplines that attracted students to RIT. The popular media paints a somewhat negative picture of college students' ability to think and focus beyond self. RIT is proof that our students can and do practice wide critical thinking. Further, learning and practicing critical thinking is difficult, takes time, and is resource-intensive for faculty, students, and classes, requiring a significant commitment on the part of all, including the university itself. ACT must be an expected *and* obvious part of each student's experience, so that the students see and understand their role in developing their own capabilities.

ACT Recommendations

Our efforts in ACT now give us the opportunity to make a significant impact both inside and outside of RIT. The processes, engagement and curricular structures, and best practices are now in place to allow our effort to mature and evolve. The Fram Chair is ultimately responsible for the leadership of the ACT initiative by creating community engagement and integration across the student experience. Our immediate goal is to increase faculty, staff, and student capacity to practice ACT by significantly enriching (or expanding) the student impact despite the challenges of COVID-19.

The opportunity to leverage our ACT@RIT initiative to advance RIT on many fronts is apparent. The academic year 2022-2023 will be focused on support of student success across our campuses, faculty teaching and learning of critical thinking, particularly as we develop and refine modalities of teaching, focusing on:

- Increasing engagement with the ACT initiative in our graduate programming and support the growth of the ACT skillset with our graduate students as our next generation of teachers, researchers, and leaders.

- Continuing the MIND Field experience as part of RIT Certified and for internal and external audiences to build additional, focused experiential opportunities to practice ACT.

- Continuing to develop and export the RIT ACT success to off campus partners and thereby, grow the ACT impact beyond RIT, including seeking external funding opportunities.

- Increasing connections between traditional and unique educational experiences across RIT including ACT as the key lynchpin and pivot point to support other major RIT initiatives, for example, RIT Certified, KEEN, growth mindset, Grand Challenges, Tech, Art & Design, etc.

- Development and benchmarking of data for continuous improvement in collaboration with the Assessment Office.

By leveraging ACT through interdisciplinary efforts and growing critical thinking, we can advance the whole university, and our greater society.

Conclusion

The Applied Critical Thinking initiative has the required components in place to achieve our goals of creating an environment that cultivates advanced critical thinking skills for RIT students and alumni and establishes national prominence and recognition for RIT.

Fram/ACT will continue to cultivate an integrated and future-minded presence at RIT and beyond. Living through this pandemic, it is apparent that this initiative is more important than ever to develop and support effective citizen-leaders that can successfully face the challenges of our evolving world and create a compelling future.

Appendix 1: History

The Eugene H. Fram Chair in Applied Critical Thinking was funded in 2011 by an anonymous RIT alumnus to honor Professor Eugene H. Fram. Gene Fram is a Professor Emeritus of Marketing who retired from RIT in 2008 after 51 years of teaching at Saunders College of Business. He is known for his expertise in the study of retail malls and shopping, Internet retailing, nonprofit and corporate governance, and advertising. Professor Fram received his Ed.D. in Higher Education from the State University of New York at Buffalo, his MS degree in retailing from the University of Pittsburgh, and served as the J. Warren McClure Research Professor of Marketing at RIT. Gene is the recipient of the 1997 Eisenhart Award for Outstanding Teaching and the RIT Presidential Medallion in 2008.

Dr. Clarence Sheffield served as the inaugural Fram Chair from 2012 to 2015, and laid the foundation for the effort, including establishing the first faculty advisory board, writing of the *Critical Thinking Across the Curriculum* report, adoption of general education student learning outcomes for critical thinking, engaging faculty and students through small group events and hosting of five speakers.

The effort was reorganized in 2015-16 with the appointment of Dr. Schneider, with the goal of impacting the student experience through faculty engagement and transparent communication. Since that time, major accomplishments have included the seating of three advisory boards comprised of Rochester faculty and staff, international campus faculty, and an external alumni advisory board; creation of two successive action plans that dovetail with university strategy; ongoing measurement and continuous improvement of student critical thinking through data gathering and analysis; implementation of a communication plan including the Fram Focus Newsletter, website, and social media; support of learning initiatives for faculty and students both on campus and through distance learning; and the establishment of the Fram Awards at RIT Imagine. In 2015-16, Dr. Schneider was also supported part-time by Dr. Evelyn Brister of COLA, Philosophy, who created a new course in 'Responsible Knowing'. Dr. Schneider initiated and continues the practice of disseminating an ACT annual report that summarizes efforts and accomplishments. This initiative expanded in 2016-17 with increasing engagement and integration of the effort on the Rochester campus. External and internal engagement accomplishments include establishment of the Fram External Advisory Board, a social media presence on Facebook and Twitter, a new student-directed introductory video, and a partnership with University News as part of an expanding external outreach effort. The internal curricular efforts include three applied critical thinking

experimental courses, an updated information literacy rubric and implementation of an argumentation rubric. Significant campus engagement resulted from fourteen events, Fram signature and collaborative programming, and the beginnings of a faculty/ staff community of practice. In addition to the regular applied critical thinking programming at RIT, more than 600 participants actively engaged in specific Fram opportunities over the course of the academic year.

2017- 2018 saw substantial increase of social media presence on both Facebook and Twitter, proposal of an Association of Independent Technological Universities (AITU) Applied Critical Thinking summit with peer university administrators for 2019, publishing of papers related to the implementation and evaluation of applied critical thinking at RIT, and a critical thinking-centric proposal to Misk-Gates Foundation. Internal efforts include establishment of the International Fram advisory board (IFAB) that includes members from our international campus locations, the very first Provost's Learning Innovations Grants (PLIG) awards, and creation of rubrics for ACT-related analysis and evaluation of creativity and innovation student learning outcomes. Thirteen Fram events and collaborative programming created significant campus engagement. The year-over-year participation increased 4%, more than 850 participants actively engaged in specific Fram opportunities.

In 2018-19, the maturation and integration of the Applied Critical Thinking initiative at the Rochester Institute of Technology (ACT@RIT) continued under the leadership of Dr. Jennifer L. Schneider. Applied Critical Thinking at RIT is framed, functional, and ready to meet greater challenges. We have entered a new phase of ACT efforts on the national stage and are also poised to deepen our efforts to fulfill university goals. We have increased on-campus participation 700% over the last 5 years. We hosted 12 college-focused Fram events, and an institute -wide spring lecture and fall signature event set that were very successful. The year-over-year participation increased 61% to an all-time high of 1400 attendees despite the ongoing challenge of capturing interest on our busy campus.

Engagement is more than event attendance, but strategic refinement of university systems for student success. Notable accomplishments are measurable at all RIT campuses, including: implementation of the suite of rubrics for ACT-related student learning outcomes, and initiation of data informed ACT process evaluation; completion of a first-year student perception survey for Rochester that forms a

baseline for longitudinal student assessment; establishment of a relationship for future RIT4LIFE opportunities; continued successful university- level offerings including the graduate 'Worldmaking' salon and a critical thinking course through RIT edX; growth in faculty support including resources, rubrics, teaching circle and workshop offerings; initiation of participation and feedback survey for RIT international campuses; and successful planning for the first of its kind Association of Independent Technological Universities (AITU) Applied Critical Thinking Summit, attracting participation for our peer institutions for a summit in August 2019.

In 2019-20, the maturation and integration of the Applied Critical Thinking initiative at the Rochester Institute of Technology (ACT@RIT) continued under the leadership of Dr. Jennifer L. Schneider. ACT@RIT is framed, functional, and ready to meet greater challenges. We have entered a new phase of ACT efforts on the national stage and are also poised to deepen our efforts to fulfill university goals. We have increased on-campus participation 700% over the last 5 years. This year, we hosted 24 cosponsored Fram events, and an Institute-wide fall signature event that was very successful. The year-over-year participation increased 64.6% to an all-time high of nearly 2500 attendees despite the challenge of the COVID-19 Pandemic. The measure of our success is not limited to event attendance but defined by our level of engagement and strategic refinement of university systems for student success. Notable accomplishments are measurable at all RIT campuses, including: • Successful AITU summit of peer universities in August 2019 • Development of unique webinar event series with Alumni Relations and several colleges related to the pandemic (capitalizing on the RIT4Life model). • Establishment of a unique Community of Practice Disasters that highlighted professors that contribute in this important area. • Continued growth in faculty support including resources, rubrics, and workshop offerings. • Initiation of support and engagement of RIT international campus faculty.

In 2020-21, the maturation and integration of the Applied Critical Thinking initiative at the Rochester Institute of Technology (ACT@RIT) continued under the leadership of Dr. Jennifer L. Schneider. This year, we hosted 18 cosponsored Fram events, and an Institute-wide spring speaker event that was successful. Nearly 1000 attended Fram events this year despite the ongoing challenge of the COVID-19 Pandemic. Temporary administrative support was provided by Linda Lagree, through Datrose, RIT's temporary staffing agency. Linda's temporary assignment ended June 30, 2021 and Ms. Tamaira Brown worked for the Fram chair from August 2021- to July 2022. Ms. Lagree was then rehired to support the chairship in summer and fall 2022 as a new full time admin search is underway.

Appendix 2: Learning Outcomes

Critical Thinking refers to those processes required to understand and evaluate complex claims of various sorts. It involves the evaluation of information, evidence, arguments, and theories, and the contexts in which these are encountered. It entails the questioning of different and competing perspectives, and challenging the (sometimes hidden) assumptions and inferences that determine what will count as evidence or argument. Critical thinking is learning to think in a disciplined and evaluative manner, to analyze and interpret the processes by which various claims are made and reliable conclusions are reached. (Source: RIT current Educational Goals Definition)

	Academic Programs	Co-op Employer Evaluation 2016-18	NSSE 2015	

Measure and Results	100% of programs identified at least one program goal/student learning outcome	**Critical Thinking:**
		
		Information Literacy: *Accesses and synthesizes information from appropriate sources* 4.4 out of 5.0 **Met** (n=624)
		
		Creative/Innovative Synthesizes existing ideas, images, or expertise in original ways 4.3/5.0
			NSSE 4b. *Applying facts, theories, or methods to practical problems or new solutions*
			  Senior **Approaching**
			  RIT 3.0, AITU Peer 3.1
			
			NSSE 4c. *Analyzing an idea, experience, or line of reasoning in depth by examining its parts*
			  Senior Met
			  RIT 2.9, AITU Peer 2.9
			
			NSSE 4d: *Evaluating a point of view, decision, or information source*
			  Senior **Met**
			  RIT 2.6, AITU Peer 2.6
			
			NSSE 4e. *Forming a new idea or understanding from various pieces of information*
			  Senior **Met**
			  RIT 2.8, AITU Peer 2.7	

University Level Benchmark	100% of programs will identify at least one program goal/student learning outcome aligned to Critical Thinking	Employers will rate RIT students 4.0 or higher Scale 1(poor) – 5 (excellent)	RIT Seniors will report a mean that is higher than or on par with their AITU Peers (n= 800 RIT seniors, ~1800 AITU)	
Preliminary Action Items	Develop faculty team to determine criteria, core assignment(s) and set benchmark	Review/analyze co-op student evaluation responses to qualitative questions re: Critical Thinking	Ongoing review of NSSE data for trends	

General Education Student Learning Outcomes
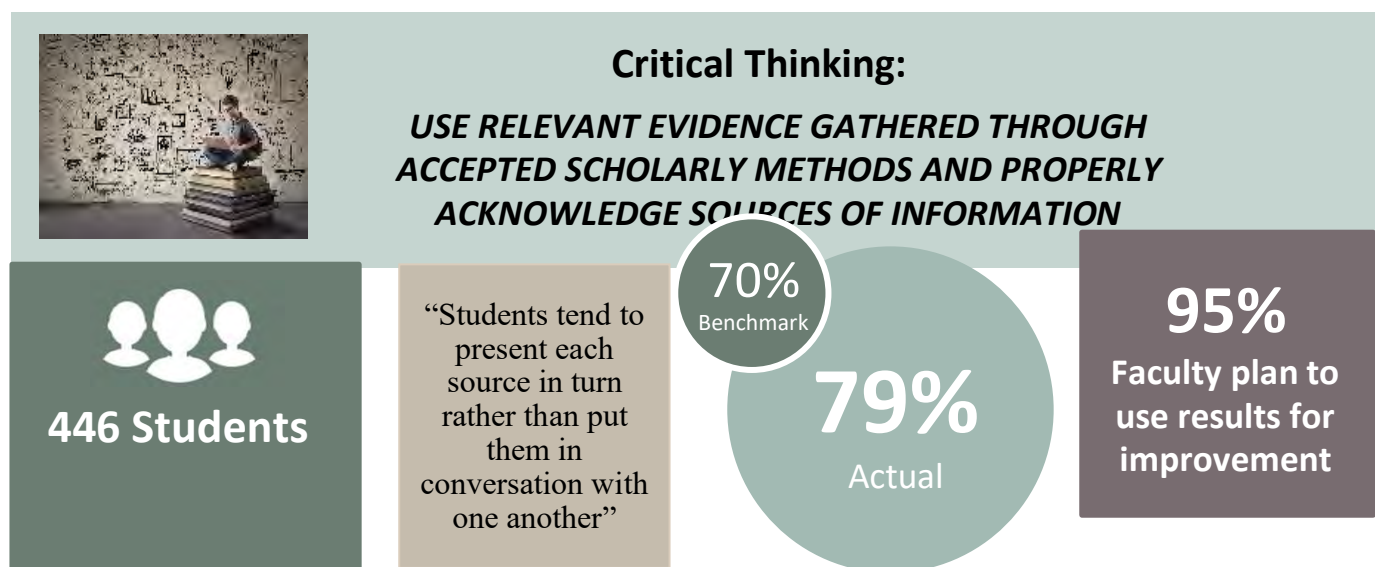## Assessment Schedule 2016-2022

Framework	General Education Student Learning Outcome	2016.17 Assessment		2017.18 Assessment		2018.19 Assessment		2019.2020 Assessment		2020.21 Assessment		2021.22 Assessment	
		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Communication	Express oneself effectively in common college-level written forms using standard American English						X						X
	Revise and improve written products		X						X				
	Express oneself effectively in presentation, either in spoken standard American English or sign language			X						X			
	Demonstrate comprehension of information and ideas accessed through reading				X						X		
Critical Thinking	Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information				X						X		
	Analyze or construct arguments considering their premises, assumptions, contexts, and conclusions, and anticipating counterarguments	X						X					
	Reach sound conclusions based on logical analysis of evidence					X						X	
	Demonstrate creative or innovative approaches to assignments or projects						X						X
Social	Analyze similarities and differences in human social experiences and evaluate the consequences					X						X	
Global	Examine connections among the world's populations						X						X
Ethical	Identify contemporary ethical questions and relevant positions	X						X					
Scientific Principles	Demonstrate knowledge of basic principles and concepts of one of the natural sciences		X						X				
Natural Inquiry of Science	Apply methods of scientific inquiry and problem solving to contemporary issues and scientific questions		X						X				
Mathematical	Comprehend and evaluate mathematical or statistical information			X						X			
Mathematical	Perform college-level mathematical operations or apply statistical techniques			X						X			
Artistic	Interpret and evaluate artistic expression considering the cultural context in which it was created	X						X					

General Education Student Learning Outcomes Proposed Assessment Schedule 2020-2026*														
Framework	General Education Student Learning Outcome	2020.21 Assessment		2021.22 Assessment		2022.23 Assessment		2023.24 Assessment		2024.25 Assessment		2025.26 Assessment	
		Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring	Fall	Spring
Communication	Express oneself effectively in common college-level written forms using standard American English				X							X	
	Revise and improve written products			X									X
	Express oneself effectively in presentation, either in spoken standard American English or sign language			X								X	
	Demonstrate comprehension of information and ideas accessed through reading				X								X
Critical Thinking	Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information							X					
	Analyze or construct arguments considering their premises, assumptions, contexts, and conclusions, and anticipating counterarguments								X				
	Reach sound conclusions based on logical analysis of evidence							X					
	Demonstrate creative or innovative approaches to assignments or projects								X				
Social	Analyze similarities and differences in human social experiences and evaluate the consequences					X							
Global	Examine connections among the world's populations		X**			X							
Ethical	Identify contemporary ethical questions and relevant positions						X						
Artistic	Interpret and evaluate artistic expression considering the cultural context in which it was created						X						
Scientific Principles	Demonstrate knowledge of basic principles and concepts of one of the natural sciences		X**							X			
Natural Inquiry of Science	Apply methods of scientific inquiry and problem solving to contemporary issues and scientific questions		X**							X			
Mathematical	Comprehend and evaluate mathematical or statistical information	X									X		
Mathematical	Perform college-level mathematical operations or apply statistical techniques	X									X		

* Schedule may be revised based on achievement of the General Education Student Learning Outcomes
** Spring 2020 outcome assessment postponed

Revised 2020 Office of Educational Effectiveness Assessment / Academic Affairs

Critical Thinking:

USE RELEVANT EVIDENCE GATHERED THROUGH ACCEPTED SCHOLARLY METHODS AND PROPERLY ACKNOWLEDGE SOURCES OF INFORMATION

446 Students

"Students tend to present each source in turn rather than put them in conversation with one another"

70% Benchmark

79% Actual

95% Faculty plan to use results for improvement

RIT students' ability to *Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources of information* was measured in a spring 2018 course-embedded assessment utilizing a university developed rubric. Additionally, RIT senior scores from the National Survey of Student Engagement were analyzed and compared to senior mean scores from peer institutions. This report provides results, trends, and faculty recommendations to improve student learning.

Results & Trends

RIT's achievement benchmark was exceeded, as 79% of students scored a Competent (3) or higher on the rubric. The results (Figure 1) show that students scored the highest on the rubric performance criterion "*Identify Problem Scope*" and lowest on their ability to "*Integrate Sources*." One faculty member noted that "*students tend to present each source in turn rather than put them in conversation with one another.*"

Trend data is not available for this outcome because the rubric was revised before this assessment. Revisions included changes to the criteria, language, performance ratings, and benchmark. The purpose of this revision was to make the rubric broadly applicable to a larger variety of disciplines and assignment approaches as well as to simplify scoring and align with other RIT General Education rubrics. The benchmark was not met in the prior assessment, in which faculty scored student portfolios collected from First-year writing (UWRT 150).

Rubric Scores by Performance Critiera
% of Students Scoring a 3 or Better

Criteria	%
Identify Problem Scope	87%
Use Information to Address a Problem	84%
Identify Assumptions and Context	73%
Integrate Sources	65%
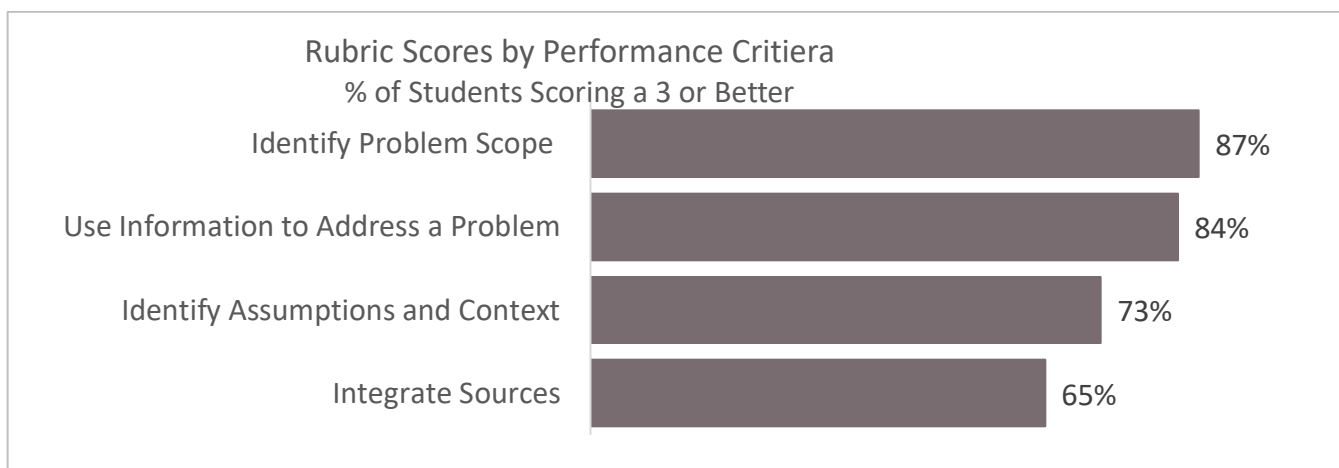
Figure 1: Use Evidence Rubric Scores by Criteria

Faculty shared instructional and assignment design strategies that help students achieve this outcome, along with noting areas where students could improve (Table 1). The ability to *Integrate Sources* was the area of greatest challenge for students, however, written responses and recommendations from faculty pointed to additional areas for improvement. Interestingly, all the rubric criteria were mentioned as pain points at least once, and students' ability to *Identify Assumptions and Contexts of Information* was cited by faculty as frequently as their ability to *Integrate Sources*.

Table 1: Strengths and Opportunities Related to the Use of Relevant Evidence

What Works	What Needs More Work
• **Feedback**: provide students with feedback (from faculty, peers, and the writing commons) and the opportunity to make revisions based on the feedback • **Scaffolded Assignments**: which break down projects or research papers into steps; a crucial step is asking students to examine the way they use sources • **Annotated Bibliography**: or other method where students break down sources, consider how they are using them, and the context • **Research**: conduct their research to develop an awareness of assumptions, biases, etc.	**Critical Reading and Analysis**: help students integrate sources and identify assumptions and context **Library and Database Use**: provide training in library resources and reference databases early in student's college career **Proper Citation**: provide additional guidance and add clarity to expectations regarding proper citation methods and use of citations for internet sources and paraphrasing

Additional Data: Co-op Employer Evaluation

Students participating in an RIT co-op experience are rated by their supervisors on the Co-op Employer Evaluation after their co-op experience. RIT established a benchmark that employers will rate RIT students' Information Literacy skills as a 4 (Exceeds Expectations) or greater out of 5. The results show the students meeting the benchmark, with a mean rating of over 4 for this item (see Table 2).

Table 2: Co-op Employer Evaluation Results for Information Literacy

Co-op Employer Evaluation Item	# Of Evaluations	Benchmark	Mean Rating AY 2016-18 (1-5)*
Information Literacy: Accesses and synthesizes information from appropriate sources (CHST, CLA, COS, CAD)	624	Met	4.4/5

Additional Data: National Survey of Student Engagement (NSSE)

NSSE measures the extent to which first-year students and seniors are engaged in educational practices associated with student success. Self-reported scores from the 2017 administration of NSSE which are mapped to this outcome were also examined to gather insights into student achievement related to this outcome. The RIT benchmark is as follows: the senior mean score on the selected NSSE item is on par with or higher than their AITU or Transferable Skills Module peer mean score.

NSSE results show RIT Seniors meeting the benchmark for one survey item but falling below the benchmark for the other item (Table 3).

Table 3: NSSE Results Mapped to Outcome

Use relevant evidence gathered through accepted scholarly methods and properly acknowledge sources			
During the current school year, how much has your coursework emphasized the following?	Benchmark	2017 RIT Senior Mean	2017 AITU Senior Mean
		(1= *Very Little*, 4= *Very Much*)	
4d. Evaluating a point of view, decision, or information source	Met	2.7	2.7
NSSE (2017 Transferable Skills Module) How often have you written something (paper, report, article, blog, etc.)	Benchmark	2017 RIT Senior Mean	2017 Senior Module Mean
		(1= *Never*, 4= *Very Often*)	
TRN02b. Assessed the conclusions of a published work	Not Met	2.4	2.8***

Continuous Improvement

Based on the results, faculty members shared plans to modify curriculum and instruction, or made recommendations regarding changes RIT can make at the course, program, or university level to improve student learning for this outcome:

Curriculum	Instruction
✓ Incorporate "low-stakes" writing assignments that ask students to find, evaluate, and use source material. ✓ Include a graded draft of the annotated bibliography for the final project.	✓ Provide additional instruction locating, using, and citing academic sources. ✓ Offer more feedback and opportunity for revision.

University-level recommendations for improvement made by faculty include the following:
- ✓ Emphasize a university-level focus on the proper use of citations, including when a citation is needed.
- ✓ Provide training to all students in the use of library resources and reference databases early in the college career.

Although the benchmark was met for the direct assessment, feedback and recommendations from participating faculty indicate that additional focus on the use of source data in student writing at the course and university level is needed. Feedback from faculty emphasized the efficacy of prior modifications to pedagogy and assignments completed as a result of assessment. Examples of modifications include the use of scaffolded or step-based assignments and annotated bibliographies. Although findings were specific to courses and assignments, several themes emerged regarding what works well for helping students achieve this outcome and areas where additional focus is needed.

This outcome is closely related to RIT's Communication Student Learning Outcomes, especially *Demonstrate Comprehension of Information and Ideas Accessed through Reading*, also assessed in spring 2018. Faculty feedback from this assessment was also related to critical reading and analysis skills. RIT should consider looking at Communication and Critical Thinking outcomes holistically, especially when sharing results and determining the next steps.

Appendix 3: Fram Award for Excellence in Applied Critical Thinking at Imagine

Since applied critical thinking at RIT is an active process, awards are based upon the applicant's ability in their response to show evidence of the quality of the critical thinking process used to arrive at the final outcome of the exhibit. Responses are evaluated to the degree with which they demonstrate excellence in applied critical thinking. https://www.rit.edu/criticalthinking/fram-chair-award .

Fram Award for Excellence in Applied Critical Thinking at Imagine Aware Winners are:

2022 Small Group Award: Ruminations
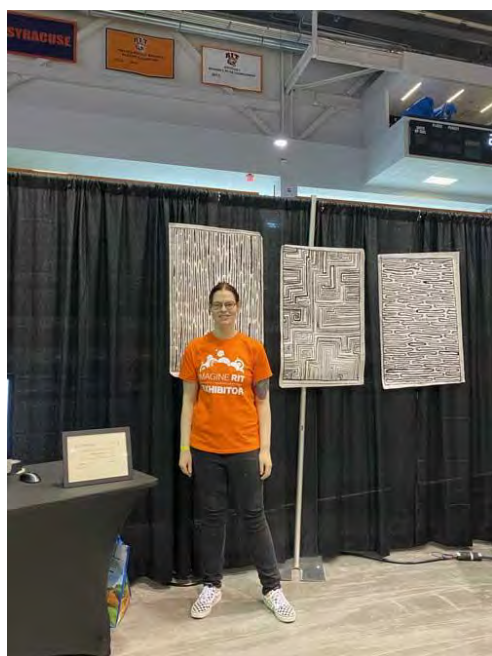
Team: Maria Kane

Abstract: This project explores the combination of traditional art with modern technology. By overlaying augmented reality on woodblock prints, Marie is discussing the complex nature of mental illness. Each AR experience is based around a particular mental illness. The goal is to evoke a sense of empathy in the viewer by discussing mental illness in a visual way, beyond a diagnosis or definition, since mental health is more of an experience than something concrete.

2022 Large Group Award: GET HEALTHY GET RITch®: Interactive Platform, Simulation and Digital Tools

Team: Caleb Vaccaro, Marc Molnar, Kevan Beemsteboer, Tirzah Pilet, Deon Allen, Kristy Kelley, Qian Li, Mini Mathai, Marielsy Pimentel, Kalpana Sundaram, Noora Abdulkerim, Tim Baer, Jaime Elizabeth Blackmon, Thomas Chacko, Eljada Gjoka, Dustin Haraden, Kayci Hauser, Joanne Raptis, Constance Rose, Siena Tugendrajch, Leah Ward, Johnathan Wright, Dr. Cassandra Berbary, Dr. Caroline Easton, Dr. Cory Crane, Dr. Richard Doolittle, Dr. Tory Toole, Dr. Rupa Kalahasthi and Dr. Celeste Sangiorgio

Abstract: Research indicates that approximately 50% of individuals who experience a substance use disorder also experience a co-occurring mental health condition; however, more than half of these individuals do not receive treatment. The introduction of technology into the mental health field promises to combat many of the barriers to receiving treatment. Technology based treatment tools allow for a low cost, efficient, comprehensive, and sustainable platform that can be widely distributed. This interactive exhibit highlights the use of technology-based behavioral health tools including a behavioral health avatar coach, a 3D substance use prevention tool, and a digital emotion measurement tool.

The Fram Advisory Board also recognizes these teams as Honorable Mentions:

Jungle Jam

Team: Anna Leung, Will Salerno, Devin Kirkwood, Simon Morrier, Dylan Gomer, Hun Choi, Andy Huang, and Andrew Beach

Abstract: Jungle Jam is the bridge between the physical and digital worlds of interaction. You and your friends are camping in the jungle. You're about to go to bed when all of a sudden, hungry wild animals come out to attack you! In this fast-paced game players use a physical slingshot to launch food

at a projection of hungry animals. Additionally, a real-life camping display invites people to take pictures as a souvenir. This project is at the intersection of all that New Media Design and New Media Interactive Development offers: design thinking, problem-solving, visual communication, motion graphics, and creative programming.

Plastic Pollution in the Great Lakes

Team: Vanessa Baker, Carmella Bangkong, Olivia Martin, Kristina Chomiak, Dr. Matthew Hoffman, Dr. Nathan Eddingsaas, Dr. André Hudson, Kaeti Stoss

Abstract: This exhibit shows the different types of plastic pollution, the tools used to study it at RIT, and the visualize of how it moves through Lake Ontario, and what the research group is doing to remove debris in the Rochester area. Visitors can get information on local cleanup efforts and the group's installation of new trash capture devices around Rochester. This project is part of an interdisciplinary research team spanning the sciences and engineering.

Appendix 4: RIT Global Humanities Conference

Appendix 5: Covid Stories

Kickoff: Leading in Pandemic: Join our RIT Leaders as they share their stories

What was our experience? What do we take from it for our future?

Facilitated by: Dr. Jennifer Schneider, Fram Chair

Beyond Rochester: The world's perspective

Listen & share the international campus perspectives of our global students & faculty. The Pandemic, the response and the path forward include us all.

Facilitated by: Dr. Francis Brassard, Associate Professor, RIT Croatia

Teaching & Learning Part 1: Covid - Coping (barely), Online (constantly), Videos (too many), Innovation (above and beyond), Dedication (for better or worse)

Faculty and staff have always had to be some of the most resilient employees - rolling with every strategic plan, new initiative, budget cut, and random change in schedule, technology, parking, etc. that higher ed could throw at them. The pivot of 2020 threatened to unhinge that resilience. Have we come out stronger, or worse for wear?

Facilitated by: Sandi Connelly, Principal Lecturer, COS with the CATs & ILI

Teaching in 2022 - The Phoenix of 2020

The wild ride of 2020 (and 2021!) still has us reeling! But, we will steady ourselves on the path again, and carry with us some of the most innovative strategies to teaching that higher education has seen since we put away the overheads and acetates! Even without zoom, our course materials are better, our attention to the needs of the learner (and the teacher!) are more focused, and when all is said and done, our classes will be better. Such radical changes made teachers into students, and perhaps that is what we have needed all along -- a restored willingness to learn from one another.

Facilitated by: Sandi Connelly, Principal Lecturer, COS with the CATs & ILI

Navigating Change and Work/Life Balance

How we work and live has changed. Join our conversation on making time for priorities, navigating the chaos, and getting it done. How has work changed? What changes do you want to make?

Facilitated by: David Reetz, PhD, CAPs Director

Fostering Academic Success: Every Student Counts

Join us for a panel & discussion on supporting students NOW – Student growth and success builds upon an environment of mentoring, advising, and teaching.

Facilitated by: Dr. Mike Eastman, Associate Dean, CET

Lessons Learned: Student Perspectives on Living and Learning during COVID

Join a panel of student representatives from Student Government, Athletics, Residence Life and more to share their perspective on Living & Learning in Pandemic.

Facilitated by: Heath Boice-Pardee, EdD, Student Affairs

Coming Together: Fostering reconnection, understanding, and compassion amongst students, staff, and faculty

Join us while we engage students, staff, and faculty in an exploration of their unique experience of the impacts of the pandemic personally, professionally, and academically. We will work to deepen understanding of each other's experiences and how each group has been helped or hindered by the other. Participants will walk away with a deeper understanding and sense of compassion for each other as well as actionable solutions to move forward collectively and supportively.

Facilitated by: Joe Johnston, OMBUDS, and Kristina Colleluori, Mental Health Therapist and Outreach Coordinator, RIT Counseling and Psychological Services.

Combating Misinformation

Join us for a panel and discussion on how to recognize and combat the rampant misinformation and disinformation campaigns that are prolonging the pandemic by eroding trust in vaccines and scientific expertise. What can we learn from other public health and environmental crises about the spread and effects of false information? What can individuals, as well as institutions like RIT, do to help the public become more resilient in the face of rampant false information, especially shared on social media?

Featuring: Dr. Maureen Ferran (Associate Professor, COS, Life Sciences), Dr. Kaitlin Stack Whitney (Assistant Professor, COLA, Science, Technology, and Society), and Dr. Lawrence Torcello (Associate Professor, COLA, Philosophy)

Facilitated by: Dr. Christine Keiner (Professor, COLA, Science, Technology, and Society)

Using the Past to Inform the Present and Future

Like many historical health disasters—from the 1793 yellow fever epidemic in Philadelphia to the 1918 influenza pandemic to the 1999 outbreak of West Nile Virus in New York City—Covid has exposed social injustices by disproportionately harming marginalized populations and exacerbating xenophobia and racism. Join us for a panel and discussion on how scholars are using past public health emergencies to inform current and future plans to manage pathogens in ways that promote social and racial equity.

Featuring: Dr. Richard Newman (Professor, COLA, History), Dr. Rebecca Scales (Associate Professor, COLA, History), Dr. Kristoffer Whitney (Associate Professor, COLA, Science, Technology, and Society)

Facilitated by: Dr. Christine Keiner (Professor COLA, Science, Technology, and Society)

Wrap Up: What are the diamonds we gathered? Critical findings and writing our future story as a community.

With this event, we aim to gather our stories and leverage our collective critical thinking to create a better community on and off our campuses. How can we harness our power?

Facilitated by: Dr. Jennifer Schneider, COVID Stories team & Fram Advisory Boards