Tri-University Critical Thinking Assessment Report

Prepared by the Tri-University General Education Assessment Committee for the Arizona Board of Regents

Fall 2024

Tri-University General Education Assessment Goals

- Programmatic outcomes: measure student learning within our general education programs in the four areas identified by the Arizona Board of Regents (written communication, quantitative reasoning, critical thinking, civic learning/American institutions).
- Growth and Improvement: use evidence of student learning to inform curricular enhancements on individual campuses that will support and improve teaching and learning in the four areas.

Guiding Questions

- How well are undergraduates at each institution meeting the general education student learning outcomes for critical thinking?
- Based on institutional interpretations of the data results, what opportunities do we see for supporting and enhancing the teaching and learning of critical thinking on our campuses?

Development Process

Representatives from the three universities were first convened by ABOR staff in March 2020 to begin developing the four ABOR-required assessments. Since then, written communication and quantitative reasoning have been assessed and reported to ABOR. For the critical thinking assessment, the group began their work in November 2023, meeting bi-weekly throughout the following 10 months to design and conduct this valuation. Each institution began by convening an internal planning team of interdisciplinary experts. Subsequently, the Tri-University group conducted two half-day retreats, comprised of each institution's planning teams, to develop an assessment tool.

Consistent with previous Tri-University assessments, the group consulted the American Association of Colleges & Universities VALUE rubrics for critical and creative thinking for guidance on developing our own rubric that would be both interdisciplinary and applicable across all three institutions. Through the iterative process of applying lessons learned to each new assessment cycle, and employing an inclusive approach to consensus building, these sessions resulted in a Tri-University Critical Thinking Rubric. Methodologies for collecting and rating student artifacts and data analysis will be described below within each institutions individual report.

In this, our third assessment cycle, the Tri-University General Education Assessment Committee has refined our approach to collaboration. What began as a directive by the Arizona Board of Regents has evolved into a cross institutional working group not only designing and conducting assessments of our general education programs for our students, but we have also begun to share our collaborative work and lessons learned through publications with AAC&U and presentations to the AZ Transfer group. We are grateful for this opportunity to collaborate and support one another as we launch newly revised general education programs to support our students in engaging in complex and innovative futures.

Tri-University Critical Thinking Rubric

Critical thinking can be divided into two categories: skills and dispositions.

Skills: synthesize, evaluate, create, innovate, justify, interpret, integrate, demonstrate, argumentation, analysis of assumptions and biases, evaluation of sources, question formulation, sound reasoning/evidence-based reasoning, problem-solving, comprehensive exploration of ideas/concepts, meaning-making, application, practice, adaptation

Dispositions: Reflective (metacognitive) thinking - analysis of one's own assumptions and biases, perspective-taking, self-regulated judgment, agency/self-confidence, curiosity, prudence (careful consideration)

Interdisciplinary Definition of Critical Thinking

Critical thinking includes the skills of argumentation, evaluation of sources, and meaning-making along with the disposition of reflective thinking.

Tri-University Criteria for Critical Thinking

1. **Argumentation:** sound reasoning/evidence-based reasoning, use of evidence to support ideas, analysis of biases and assumptions, problem-solving
2. **Evaluation of evidence:** analyze, judge, interpret, assumptions/biases, prudence, comprehensive exploration of ideas/concepts
3. **Analysis/Interpretation/reflection:** analysis of one's own assumptions/biases, self-regulated judgment, agency/self-confidence, adaptation
4. **Conclusions/Outcomes/Meaning-making**: Process/ practice of synthesizing, analyzing, evaluating, creating, justifying, integrating, demonstrating, applying.

Rubric Details

Criteria	Exceeds Expectations	Meets Expectations	Developing Toward Expectations
Argumentation	Specific claims or positions are clearly justified with a comprehensive range of supporting evidence, logically connected reasoning, or accepted disciplinary ideas; considers complexities of an issue and various points of view and biases are made evident.	Specific claims or positions are justified by appealing to relevant supporting evidence; evidence is partially aligned with accepted disciplinary ideas and considers various points of view and biases.	Claims or positions have little or no justification; Any supporting evidence is minimally consistent with disciplinary ideas and assumptions, and biases are evident; Any structure of reasoning from evidence to conclusion is unclear and lacks consideration of complexities.
Evaluation of Evidence	Extensively or thoroughly demonstrates that the evidence used to develop a comprehensive analysis, synthesis, or argument comes from relevant, reliable, and viable sources.	Adequately demonstrates that the evidence used to develop a comprehensive analysis, synthesis, or argument comes from relevant, reliable, and viable sources.	Inadequately demonstrates that the evidence used to develop comprehensive analysis, synthesis, or argument comes from relevant, reliable, and viable sources.
Analysis/ Interpretation/ Reflection	Extensive acknowledgement of the personal or disciplinary bias in the extensive analysis and interpretation of evidence; includes critical evaluation of those biases and their influence on the final evaluation of evidence.	Adequate acknowledgement of the personal or disciplinary bias in the extensive analysis and interpretation of evidence; includes adequate evaluation of those biases and their influence on the final evaluation of evidence.	Inadequate acknowledgement of the personal or disciplinary bias in the extensive analysis and interpretation of evidence; includes minimal evaluation of those biases and their influence on the final evaluation of evidence.
Conclusions/ Outcomes/ Meaning-Making	Extensively connects, integrates, or synthesizes thoroughly analyzed evidence from a variety of theories, sources, and perspectives in support of an argument, conclusion, or viewpoint that can also be novel or unique.	Adequately, connects, or integrates evidence that synthesizes multiple theories, sources, or perspectives to create an argument, conclusion, or viewpoint.	Argument, conclusion, or viewpoint is inadequately supported or not supported by evidence; does not include sufficient analysis from multiple sources or perspectives.

Mapping the Critical Thinking Rubric to ABOR Policy 2-210

In the table below, we map the criteria from the Tri-University Critical Thinking Rubric to the learning outcomes related to critical thinking in ABOR Policy 2-210.

Critical Thinking Skills and Outcomes Drawn from ABOR Policy 2-210	Tri-University Critical Thinking Rubric Criteria
Through critical thinking students:	
- Apply an understanding of reasoning and evidence - Demonstrate open-mindedness to different views	**Argumentation:** sound reasoning/evidence-based reasoning, use of evidence to support ideas, analysis of biases and assumptions, problem-solving
- Differentiate among fact, inference, and judgment - Apply an understanding of reasoning and evidence - Demonstrate information literacy - Demonstrate open-mindedness to different views	**Evaluation of evidence:** analyze, judge, interpret, assumptions/biases, prudence, comprehensive exploration of ideas/concepts
- Differentiate among fact, inference, and judgment - Suspend judgment until convincing evidence is available - Demonstrate information literacy	**Analysis/Interpretation/reflection:** analysis of one's own assumptions/biases, self-regulated judgment, agency/self-confidence, adaptation
- Demonstrate open-mindedness to different views - Pursue a line of inquiry to its logical conclusion no matter the conclusion.	**Conclusions/Outcomes/Meaning-making**: Process/ practice of synthesizing, analyzing, evaluating, creating, justifying, integrating, demonstrating, applying.

Institutional Reports

In our Overview of the Critical Thinking Assessment, as well as in our biweekly meetings, we focus on the commonalities between the assessment approaches at the three universities. In the following sections, we include individual reports from each institution. We report these results individually because the General Education programs and curricula at the three universities are distinct in their design and implementation in correlation to the uniqueness of our student populations.

Guided by feedback from our individual Institutional Review Boards for Human Subjects Research, we underscore that this report is intended for program assessment only for each of the three institutions and may not be used as a published report to contribute to generalizable knowledge.

Arizona State University ABOR Critical Thinking Assessment Report

Introduction

Arizona State University (ASU) participated in a collaborative project with Northern Arizona University (NAU) and the University of Arizona (UA) directed by the Arizona Board of Regents for the Tri-University examination of critical thinking (CT) in our undergraduate general education curriculum. The primary objective of the general education assessments is to evaluate artifacts from undergraduate students across the general education curriculum.

Methods

Sample Student artifacts were collected from fall 2023 and spring 2024 courses offered across ASU campuses (Downtown, Tempe, West, ASU Online). The courses represented in-person, online, and hybrid modalities, aligning with the diverse instructional methods employed across ASU. The student artifacts were drawn from upper-division undergraduate courses across various disciplines, including Design and Arts, Sociology, Communication, History, Kinesiology, Nursing, Psychology, and Biology. The courses included: ARS 480, Research Methods; SOC 391, Applied Research Methods; COM 308, Advanced Research Methods in Communication; HST 495, Methods of Historical Inquiry; KIN 460, Theory of Strength Training; NUR 315, Nursing Research and Application to Practice; PSY 304, Effective Thinking; BIO 317, History of Science II. Student artifacts were required to address at least three dimensions of the Critical Thinking rubric: Argumentation, Evaluation of Evidence, Analysis/Interpretation/Reflection, and Conclusions/Outcomes/Meaning-Making.

The initial sample included 677 artifacts. If there were discrepancies of $\geq$ 2 points on more than one dimension, the artifact was removed (N=24). The final dataset included 653 artifacts. 56.7% of artifacts were collected from in-person/hybrid courses and 43.3% from online courses. The sample may not be representative of students from all colleges, disciplines, or demographic groups. The sample may not represent the variety of general studies courses currently offered. ASU's new General Studies (Gold) program started in fall 2024, and the artifacts were selected from analogous courses in the previous general studies program.

Instrument

The VALUE rubric for Critical Thinking from the American Association of Colleges and Universities was adapted into a four-dimensional, three-level rubric for Critical Thinking that mapped to learning outcomes aligned with ASU's revised general education program (see Appendix).

The Critical Thinking Assessment Rubric has the following dimensions

1. Argumentation
2. Evaluation of Evidence
3. Analysis/Interpretation/Reflection
4. Conclusions/Outcomes/Meaning-Making

Assessors were faculty members experienced in teaching critical thinking courses at ASU and participated in a 2-hour training session on applying the rubric. The assignment prompts were provided to the scorers. Scorers were told to mark "N/A" if the artifact was not designed to assess that dimension. Due to the nature of the assignment, artifacts for one course (NUR 315) could not be assessed on the last dimension. The number of artifacts included in each dimension assessment is included in the table.

Outcome Data

	Exceeds	Meets Expectations	Developing
Argumentation (N=653)	**99%**		
	36%	*63%*	**1%**
Evaluation of Evidence (N=653)	**96%**		
	39%	*57%*	**4%**
Analysis/ Interpretation/ Reflection (N=653)	**96%**		
	36%	*59%*	**4%**
Conclusions/ Outcomes/ Meaning-Making (N=417)	**95%**		
	39%	*56%*	**5%**

Interpretation and Conclusions

The assessment data from this project were examined for possible differences in critical thinking skills among specific student subgroups. Analyses were conducted on subgroups that represented at least 8% of the total sample. The analyses only included White and Hispanic students due to small sample sizes for other ethnic/race categories. The analyses revealed consistent proportions of students meeting/exceeding expectations across the categories without obvious differences between subgroups: Argumentation (White: 99%; Hispanic: 100%), Evaluation of Evidence (White: 97%; Hispanic: 95%); Analysis/Interpretation/Reflection (White: 97%; Hispanic: 95%), Conclusions/Outcomes/Meaning-Making (White: 96%; Hispanic: 94%).

Further analyses were conducted to examine artifacts by modality (online vs. in-person/hybrid). The analyses revealed consistent proportions of students meeting/exceeding expectations across the categories without obvious differences between modality: Argumentation (Online: 98%; In-person: 99%), Evaluation of Evidence (Online: 96%; In-person: 95%); Analysis/Interpretation/Reflection (Online: 95%; In-person: 96%), Conclusions/Outcomes/Meaning-Making (Online: 95%; In-person: 96%). Focus groups composed of ASU faculty reviewed the results. Their recommendations included sampling from more courses which will allow for greater variety in assessments and better reflect the range of critical thinking skills required in courses.

Expanded Course Sampling All artifacts assessed in this project were from upper-division courses (300-400 level). Given that upper-division courses have increased rigor and the students in those courses have likely successfully completed lower-division critical thinking

courses, the included sample does not reflect the wider ASU population. The Critical Thinking rubric included high-level critical thinking skills, which made it challenging to identify appropriate artifacts in lower-division courses. In future assessments, the current rubric might be adapted to allow for a broader assessment of artifacts from lower-division courses.

Guiding General Education Curriculum ASU has implemented its new General Studies (Gold) program. The current report represents courses in the previous general studies program and will serve as a benchmark for future assessments of the new general studies program. A core component of the new program is that each category is associated with learning outcomes that must be directly assessed in the course and presented in the course syllabus. Critical thinking skills are integrated into the learning outcomes for multiple general studies categories, ensuring that students engage in critical thinking across different courses. By consistently presenting learning outcomes and assessment expectations, students will clearly understand the skills and competencies they are developing within their courses.

Appendix

Mapping of Learning Outcomes to Critical Thinking Rubric Dimensions

	Argumentation	Evaluation of Evidence	Analysis/ Interpretation /Reflection	Conclusions/ Outcomes/ Meaning-Making
Construct arguments in which claim, evidence and reasoning are consistent with accepted disciplinary ideas and practice	X			
Evaluate information to determine its relevance or reliability to support a conclusion or argument.		X		
Analyze and interpret information to determine meaning and extract relevant evidence.			X	
Connect or Integrate information to support an argument or reach a conclusion.				X

Northern Arizona University General Education Assessment Report: Critical Thinking

Evaluation Period [Fall 2023 – Spring 2024]

I. Introduction

What follows is a summary of NAU's institutional report for the Critical Thinking Assessment that will review the methodology, results, interpretations, recommendations and future actions, as well as updates on the actions taken for the Quantitative Reasoning assessment.

II. Method of Assessment

Population and Sample

Artifacts were selected from Liberal Studies courses that have Critical Thinking (CT) embedded into them. Since CT courses can be taken at any point during a student's academic career, courses ranging from the 100- to 400- level were included in course selection. Therefore, the population of interest for this study includes all degree-seeking undergraduate students enrolled in at least one credit during the 2023-24 academic year from Flagstaff campus. Transfer (TRF) and Post-Baccalaureate (Post-Baccs) students were removed from the data set to ensure student's experience with NAU's Liberal Studies program was the focus of this assessment.

Artifacts

Individual, authentic student artifacts were collected from 21 courses across the Physical/Environmental Sciences, Social Sciences, and the Humanities that were taught during the Fall 23 and Spring 24 terms. Seven hundred and sixty-five (765) artifacts, deemed viable, were collected and further analyzed.

Raters and Ratings

Twelve raters were selected to assess student artifacts based on their teaching experience with CT designated courses across the disciplines. Inter-rater reliability was achieved through a series of trainings that included a calibration of the interpretation of rubric criteria and the establishment of inter-rater consistency in scoring. Raters were each randomly assigned approximately 127 artifacts to assess using the Tri University CT rubric. Raters were given an N/A option on the CT rubric if they determined certain criterion was not evident in the student work.

Data Collection and Analyses

Upon completion of all ratings, data was matched with student demographic information. Each artifact was rated twice, and the two scores were averaged for individual students

then grouped by rubric criterion. Ratings given an N/A were counted as missing data for each criterion and were not included in final analyses for this project. Criterion averages were categorized by the Likert Scale used in the rubric (e.g., 1=Developing, 2=Meets Expectations, or 3=Exceeds Expectations) and scores falling between two scale points were rolled up into the higher of the two scale points. For example, an average score of 1.5 was classified as Meets Expectations and an average score of 2.5 was counted as Exceeds Expectations. Data for each rubric criterion are presented as the proportion of students in each scale point.

Third Review of Artifacts

With the use of Watermark, a data software platform, researchers had the ability to assign third reads to artifacts that received a score difference of 2 for any given rubric criteria. One hundred and forty-two of the 765 artifacts received a third read. At the end of the scoring period, outliers from the third rating were eliminated so each artifact would have two scores on each rubric criterion.

III. Results

Results show that approximately three-quarters of the student population are *Meeting* or *Exceeding Expectations* in *Argumentation (78%), Evaluation of Evidence (78%), and Conclusion/Outcomes/Meaning-Making (74%)*. Data show that (62%) are *Meeting or Exceeding Expectations* in *Analysis/Interpretation/Reflection*. Table I displays the overall results for the 2023-2024 Critical Thinking assessment by rubric criterion.

Table I: AY23-24 Overall Critical Thinking Results

CT Rubric Criterion	Developing (1 to 1.49)	Meets Expectations (1.50 to 2.49)	Exceeds Expectations (2.50 to 3)	Meets or Exceeds Expectations (1.50 to 3)
Argumentation	22%	51%	27%	**78%**
Evaluation of Evidence	22%	56%	22%	**78%**
Analysis/ Interpretation/ Reflection	38%	45%	17%	**62%**
Conclusion/ Outcomes/ Meaning-Making	26%	55%	19%	**74%**

IV. Interpretations/Recommendations

A focus group was formed to interpret the results of this assessment and make recommendations for improvement in the teaching and learning of Critical Thinking (CT). Two separate focus group sessions were conducted where faculty and unit leaders from across the disciplines engaged in conversations hypothesizing explanations for the results and brainstorming action items.

Most samples collected came from lower division courses. 555 samples were drawn from 100-200 level courses with 210 samples drawn from 300-400 level courses. This was partially due to a limited number of upper division courses with individual summative assignments as well as challenges with the applicability of the rubric criteria. Thus, the data contributes to better understandings of early career (Freshman/Sophomore) CT competencies than the late career level (Junior/Senior).

This assessment on the Liberal Studies Program offers foundational data to be used in comparison when CT in the new General Studies Program is assessed in AY 27-28. Furthermore, the Tri University General Education Assessment continues to be exploratory in nature. With each assessment cycle, opportunities for improvement both as a Tri University group and within our individual institutions have been identified. In this third assessment cycle, the approach to the development of an assessment tool was systematized. Institutional planning teams and Tri University retreats promoted greater interdisciplinary representation that resulted in a rubric applicable across the disciplines as well as all three institutions.

Based on the focus group sessions, the following represents key themes from interpretations and recommendations for improvement in the teaching and learning of CT.

An analysis was conducted on subgroups from Early Career students (Freshman/Sophomore) and Late Career students (Junior/Senior). Results indicate a greater percentage of Late Career students in the Meets and Exceeds Expectations category for all 4 rubric criteria: Argumentation (Early: 68%; Late: 87%), Evaluation of Evidence (Early: 70%; Late: 85%), Analysis/Interpretation/Reflection (Early: 50%; Late: 72%), Conclusion/Outcomes/Meaning-making (Early: 67%; Late: 81%). This outcome underscores the effectiveness of the Liberal Studies Program in supporting student development of this transferrable skill.

The percentage of students in the developing category for the rubric criterion of Analysis/Interpretation/Reflection (38%) denotes an opportunity for improvement in the teaching and learning of CT. Providing more scaffolded instruction for this skill set throughout the General Education program will support this initiative. Additionally, students may benefit from more explicit instruction of CT across the disciplines where they engage with systems of logic to apply to course content.

Additional remediation techniques may apply to address the percentage of students that remain in the developing category for all four rubric criteria in late career: Argumentation (13%), Evaluation of Evidence (15%), Analysis/Interpretation/Reflection (28%), Conclusion/Outcomes/Meaning-making (19%). An analysis of degree program pathways may illuminate opportunities to strengthen CT practice within a students' major. Finally, faculty development opportunities would support the design of learning activities that foster practice and growth for the dispositions and skills of CT.

V. Future Actions

In the Liberal Studies program, CT is an attribute units can choose to embed in their courses. Under the new General Studies Program, CT will be infused throughout every Knowledge Area and Inclusive Perspective course as each designation maintains a CT content requirement. In this way, students will practice and sharpen their CT skills, in a disciplinary-specific context and will receive more scaffolded instruction and practice of CT across their general education experience.

While faculty raters represented content expertise across the disciplines, there is an opportunity to create stronger alignment between the discipline of the reviewers and the disciplines from which the artifacts are collected. For future CT assessments, curating raters that represent the disciplines where artifacts are collected will be considered. The challenge will be to avoid raters rating their own student work. A recommendation from the focus group sessions was to have reviewers rate the work from another institution in the Tri University group, and vice versa. This could present significant logistical challenges, yet merits further exploration.

The results of the CT Assessment will be shared in faculty discussion sessions as well as with Faculty Senate, Associate Deans and Chairs and Directors. During these deliberations, the feasibility of recommendations will be weighed. Finally, an implementation strategy for recommendations will be developed and employed to improve the teaching and learning of CT.

Assessment of Critical Thinking at the University of Arizona

Fall 2024

Overview

The assessment of Critical Thinking (CT) at the University of Arizona (U of A) is the third of four ABOR-requested assessments of our general education program. The objective of this rubric-based assessment was twofold: 1. to measure student achievement of CT, and 2. to identify areas for improvement in student learning to strengthen our general education program in the area of critical thinking.

The U of A faculty defined Critical Thinking in the following way:

Interdisciplinary Definition of Critical Thinking

Critical thinking includes the three skills of argumentation, evaluation of evidence, and meaning making along with the disposition of reflective thinking.

Critical thinking can be divided into two categories: skills and dispositions.

Skills: synthesize, evaluate, create, innovate, justify, interpret, integrate, demonstrate, argumentation, analysis of assumptions and biases, evaluation of evidence, question formulation, sound reasoning/evidence-based reasoning, problem-solving, comprehensive exploration of ideas/concepts, meaning-making, application, practice, adaptation

Dispositions: Open-mindedness, reflective (metacognitive) thinking - analysis of one's own assumptions and biases, perspective-taking, self-regulated judgment, agency/self-confidence, curiosity, prudence (careful consideration)

Achievement of this outcome is best measured through institutional coursework that incorporates CT into the curriculum. The U of A sample included 238 artifacts from 4 200-level General Education courses, and 263 CT-identified artifacts from the UNIV 301 student-created ePortfolios for a total of 501 artifacts.

Who Participated in Scoring Student Work?

- Over 40 faculty, staff, and doctoral students participated at different stages of the assessment which included focus groups and a year-long working group.
- 21 participants were trained as evaluators to score students' work. They represented many of the colleges and disciplinary areas across campus.

What Student Samples Were Assessed?

- Student work was collected from two sources: 4 different lower-division, general education courses whose signature assignments were identified by the instructor as meeting the criteria for Critical Thinking, and UNIV 301, our GE capstone course in which students identify artifacts from GE courses that align with the CT outcome.

- From a collection of over 800 artifacts, 501 were selected for evaluation to be sure that we had a representative sample across classes.

How Was the Rubric Created?

A collective of our faculty created the U of A's definition of Critical Thinking that was shared with the Tri-University working group. Representatives from our faculty worked with the Tri-University group to build a common rubric for the 3 institutions to use in this assessment. See Appendix A.

How was Student Work Assessed?

- To ensure reliability, all reviewers were calibrated on the rubric prior to the scoring process. Each artifact was evaluated twice, with a third reading taking place if the first two scores showed a difference greater than 1.
- When reviewing the artifacts, if evidence of a particular criterion was not present, the scorer could mark n/a. In these cases, the artifact was not included in the average score for that criterion, explaining why the *n* for each criterion is different.

What Did We Learn?

The table below shows the frequency of student scores for each of the rubric criteria. It is clear from these data that most of the students are meeting or exceeding expectations in all areas of Critical Thinking. Two areas, Evaluation of Evidence and Reflective Thinking, appear to be the weakest in performance. As Reflective Thinking is a new emphasis in our GE curriculum, we look forward to that area improving the next time we assess this outcome. These findings are aligned or slightly better than those at Oklahoma State University, 2017, Texas A & M, 2021, Eastern Illinois University 2023 and Hawaii-Pacific University, 2019.

	Exceeds	Meets Expectations	Developing
Argumentation (n=495)	89%		
	33%	*56%*	11%
Evaluation of Evidence (n=464)	77%		
	27%	*51%*	22%
Analysis/ Interpretation/ Reflection (n=495)	82%		
	32%	*50%*	18%
Conclusions/ Outcomes/ Meaning-Making (n=499)	88%		
	28%	*59%*	13%

When we disaggregated the data by course vs ePortfolio artifact, student artifacts from the classes scored a little higher in all areas than the ePortfolio artifacts. This difference was significant in the Meaning-Making criterion.

Because our general education curriculum is only in its second year, the ePortfolio process is new, and only a small percentage of students have yet to take it. It is meant for students to reflect back on their learning in their GE curriculum and highlight assignments that aligned with the various GE outcomes. Over time, we expect to see an increase in performance in this process mainly due to more experienced teaching practices throughout the entire GE program. Some initiatives that we should consider moving forward include:

- Offering workshops on writing effective signature assignments in critical thinking, including how to scaffold an assignment.
- Developing Faculty Learning Communities based on best practices in teaching critical thinking.
- Consider other workshops or forums that can help faculty with the teaching of critical thinking in a variety of areas.