Assessing Core Competencies: Results of Threshold Assessment for Information Literacy

Graduating Seniors
2021 Fanuchånan (Fall)

Module 2: Strategic Searching

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Assessing Core Competencies: Results of Threshold Achievement Test for Information Literacy (TATIL)

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Threshold Achievement Test for Information Literacy (TATIL) 2021 Fanuchånan

Module 2: Strategic Searching

TATIL Pilot in AY 2016-2017

Following a recommendation by UOG's Gen Ed consultant in 2015 to utilize Carrick Enterprises' Threshold Achievement Test for Information Literacy (TATIL), Assistant Professor Dr. Chris Garcia, English & Applied Linguistics, and Assistant Professor Mr. Roland San Nicolas, University Libraries, examined the instrument and volunteered to participate in Carrick's institutional pilot.

The pilot began in Fañomåkan (Spring) 2016 with several EN-111 faculty administering Modules 1 & 2 in their courses, which then continued into Fanuchånan (Fall) 2017 with Modules 3 & 4. After the pilot concluded and Carrick released TATIL for institutional use, preparations to administer TATIL to graduating seniors in Fañomåkan 2019 began. For information about TATIL see Appendices A & B or visit www.thresholdachievement.com.

About the Test

The TATIL instrument is comprised of four testing modules which the Office of Institutional Effectiveness administers to graduating seniors over the course of four semesters. The four modules include: 1) Evaluating Process & Authority, 2) Strategic Searching, 3) Research & Scholarship, and 4) The Value of Information. Module 2 was administered during the 2021 Fanuchånan semester*. More details of each module can be found in Appendix A.

Module 2 measures two outcomes and one disposition:

Outcome 2.1) Plan, conduct, evaluate, and revise searches to achieve results

Outcome 2.2) Compare and contrast a range of search tools

Disposition 2.1) Productive persistence

Scoring the Test

For this test, scores are presented on a 1,000-point scale with 1,000 being a perfect score. For uniformity with the Carrick generated report, Appendix B, this report used standard error as opposed to standard deviation. "The standard error indicates the likely range of scores if the test were given again to the same students" (Carrick 2020). For example, a mean score of 532±7 indicates a true score for a student will fall between 525 and 539.

To align with reporting practices used to assess Critical Thinking and Quantitative Literacy, test takers who spent less than 15 minutes to complete their assessment were removed from the aggregated results. 11 students were removed from analysis, but is included in Appendix B.

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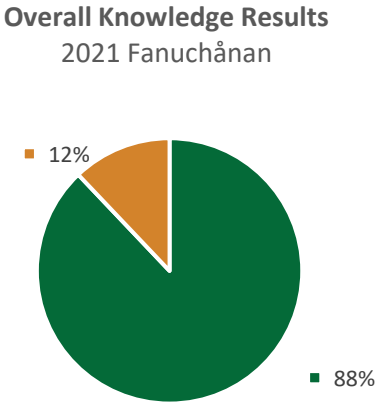
Overall Knowledge, Outcomes, Disposition Highlights



Overall Knowledge

Knowledge items are based on information literacy outcomes and performance indicators (found in Appendix A). Items assess an array of cognitive processes that college students develop as they transition from pre-college to college-ready to research-ready.

A student's overall score is the mean of their item scores, where the UOG Overall Knowledge score is the mean of all student scores.

1-337: Conditionally Ready	338-851: College Ready	852-1,000: Research Ready

Graduating seniors scored a **508** for Overall Knowledge, **484** for Outcome 2.1, and **556** for Outcome 2.2. For each of these average scores, students fall under the “College Ready” performance level, which is considered the moderate category.

Students in the College Ready category are able to do the following:

- Use the library’s tools independently to find information for typical college writing assignments
- Increase the precision of their results by adding keywords
- Organize their keywords using concepts such as Boolean operators
- Analyze item records to inform revisions to their searches
- Recognize when a search is not working and know of at least one other search tool to try
- Successfully conduct basic searches and adjust their keywords or choose a different search tool to improve their results

Disposition Score Summary

Seniors scored a **66** in Productive Persistence, which also falls in the moderate category. Students who fall in this category “are more easily guided to apply [this trait] but may not consistently demonstrate this strength when faced with new challenges" (Carrick 2020).

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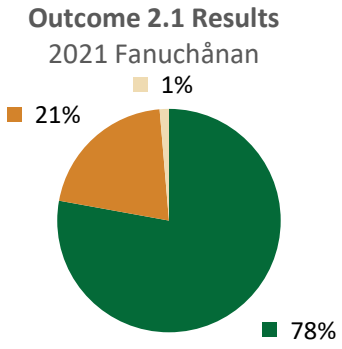
2021 Fanuchånan Graduating Seniors TATIL Scores: Outcomes and Disposition 2.1



Outcome 2.1
Plan, conduct, evaluate, and revise searches to achieve relevant results.

Performance Indicators 2.1.1 through 2.1.12 can be found on page 5 in Appendix A.

1-351: Conditionally Ready

352-832: College Ready

833-1,000: Research Ready

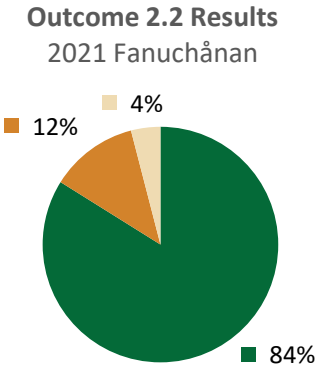
Outcome 2.2
Compare and contrast a range of search tools.

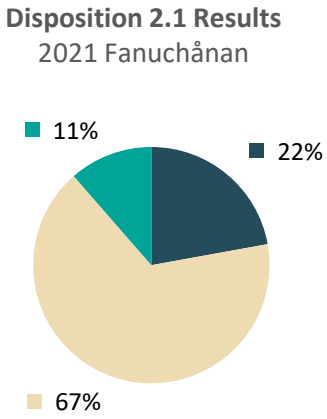
Performance Indicators 2.2.1 through 2.2.5 can be found on page 5 of Appendix A.

1-308: Conditionally Ready

309-889: College Ready

890-1,000: Research Ready





Disposition 2.1 - Productive persisence

Learners who are disposed to demonstrate productive persistence during their searches for information approach searching as iterative and not linear by employing alternative strategies and learning from mistakes.

Example behaviors for this disposition can be found on page 5 of Appendix A.

0-58: Weak

59-77: Moderate

78-100: Strong

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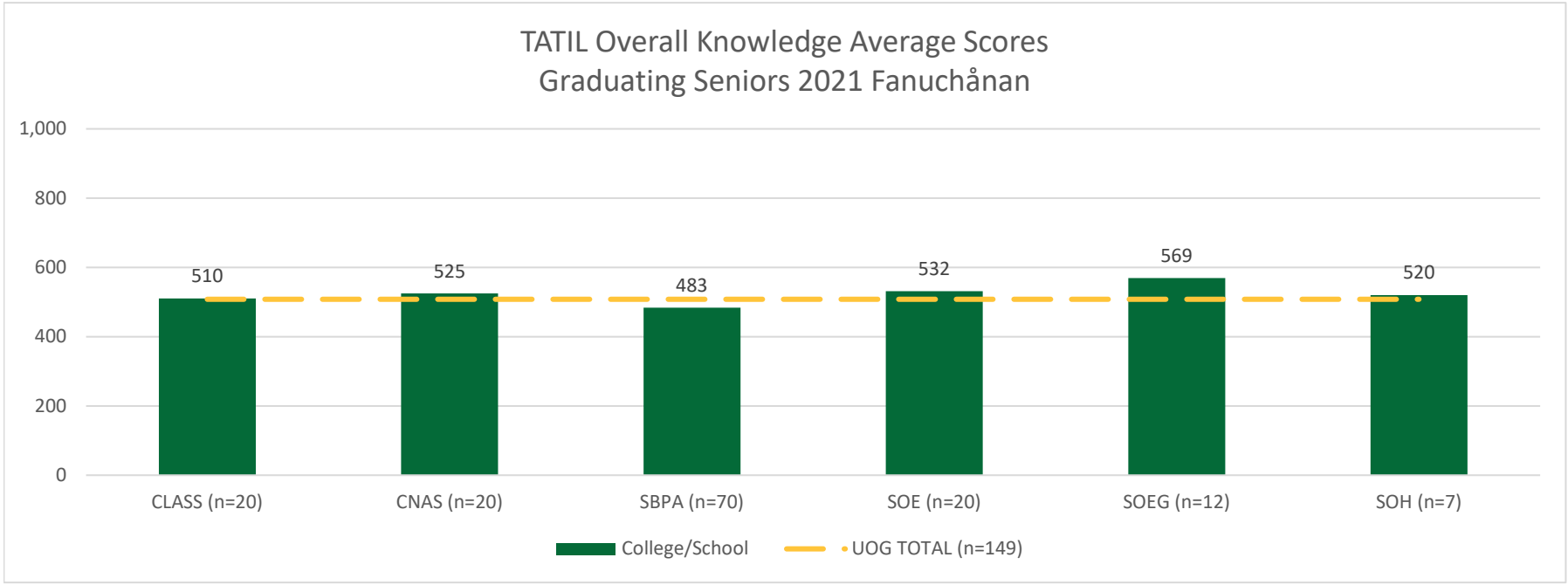
2021 Fanuchånan TATIL Average Scores by College

College/School	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
CLASS (n=20)	510	±13	502	±14	527	±17	69	±1
CNAS (n=20)	525	±14	510	±14	554	±18	66	±1
SBPA (n=70)	483	±11	444	±13	564	±16	66	±1
SOE (n=20)	532	±10	527	±11	540	±16	66	±1
SOEG (n=12)	569	±10	551	±11	607	±16	66	±1
SOH (n=7)	520	±12	521	±12	519	±14	64	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



Source: TATIL Results; Carrick Enterprises

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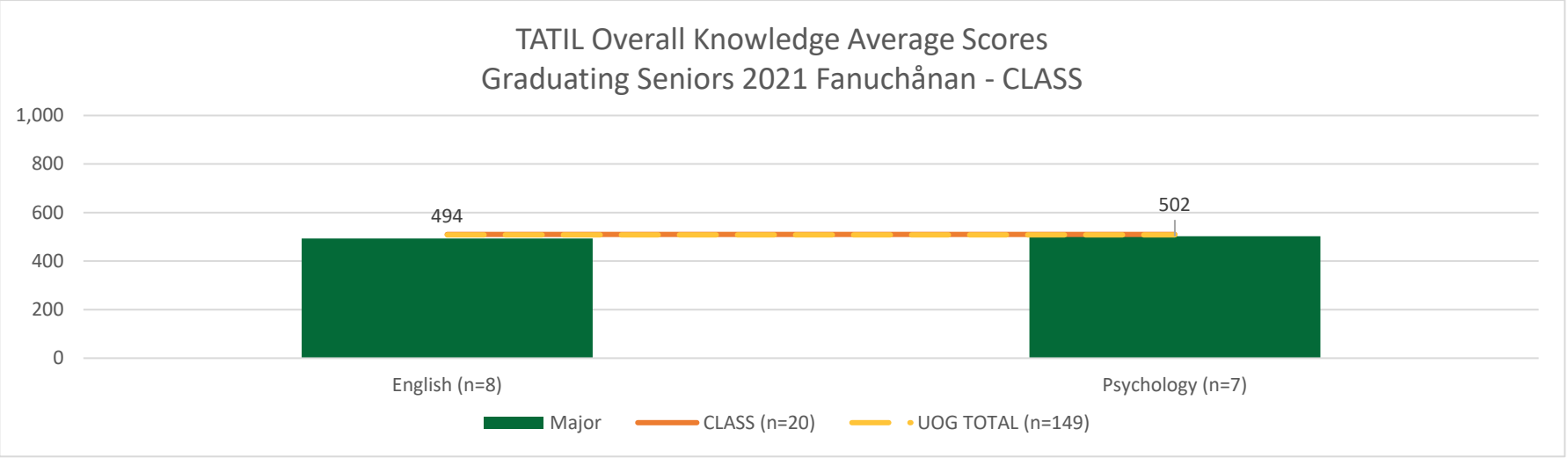
2021 Fanuchånan TATIL Average Scores - College of Liberal Arts & Social Sciences

	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
MAJOR by College	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
English (n=8)	494	±11	473	±12	535	±16	72	±1
Psychology (n=7)	502	±16	483	±19	542	±18	63	±0
CLASS (n=20)	510	±13	502	±14	527	±17	69	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



The following programs did not have enough students to report: Anthropology, Communication, Fine Arts/Art & Sociology.

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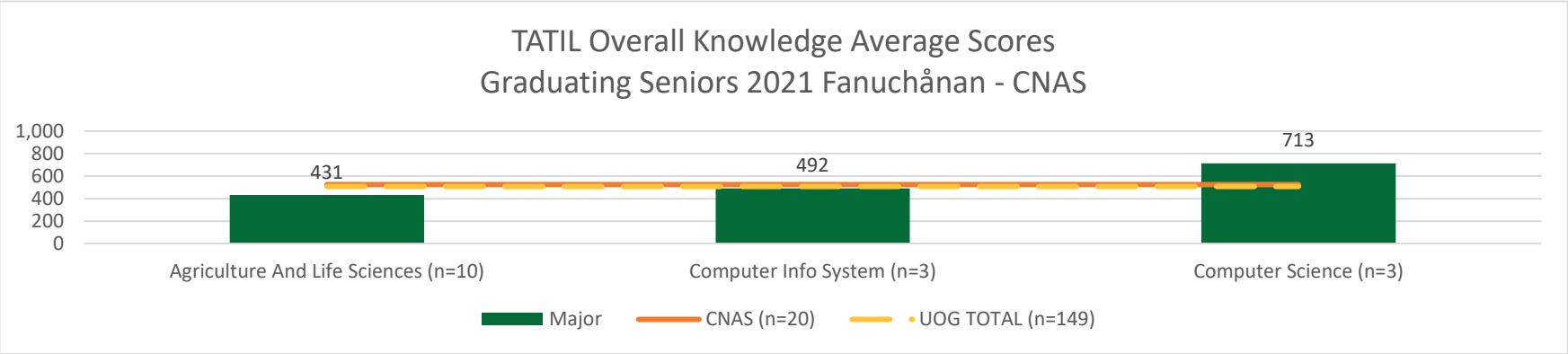
2021 Fanuchånan TATIL Average Scores - College of Natural & Applied Sciences

	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
MAJOR by College	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
Agriculture And Life Sciences (n=10)	431	±12	413	±9	470	±20	63	±1
Computer Info System (n=3)	492	±11	480	±12	518	±12	63	±1
Computer Science (n=3)	713	±12	758	±15	619	±7	67	±1
CNAS (n=20)	525	±14	510	±14	554	±18	66	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



Biology & Mathematics programs did not have enough students to report.

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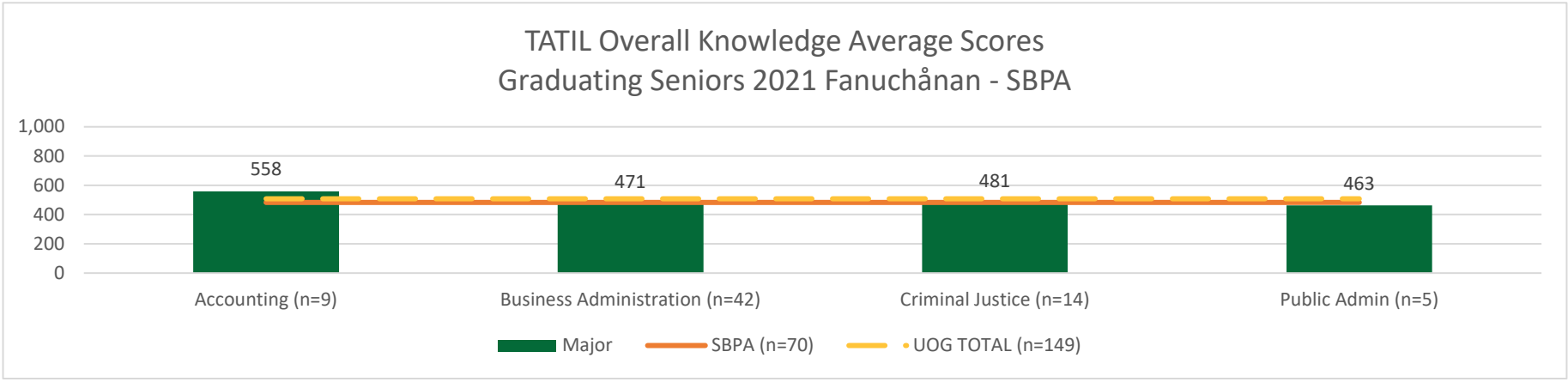
2021 Fanuchånan TATIL Average Scores - School of Business & Public Administration

	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
MAJOR by College	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
Accounting (n=9)	558	±15	550	±15	574	±21	67	±1
Business Administration (n=42)	471	±11	427	±12	560	±15	66	±1
Criminal Justice (n=14)	481	±10	429	±9	586	±13	67	±1
Public Admin (n=5)	463	±18	437	±20	516	±19	65	±1
SBPA (n=70)	483	±11	444	±13	564	±16	66	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



The Public Administration program did not have enough majors to report.

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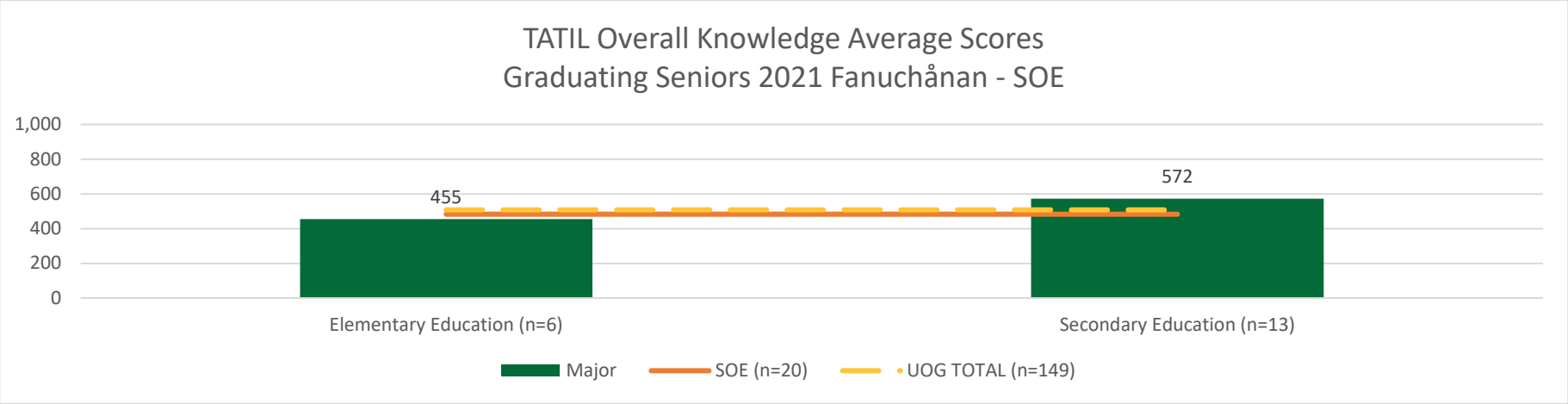
2021 Fanuchånan TATIL Average Scores - School of Education

MAJOR by College	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
Elementary Education (n=6)	455	±10	493	±11	375	±12	73	±1
Secondary Education (n=13)	572	±9	548	±12	620	±14	63	±0
SOE (n=20)	532	±10	527	±11	540	±16	66	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



The Physical Education/School Health program did not have enough results to report.

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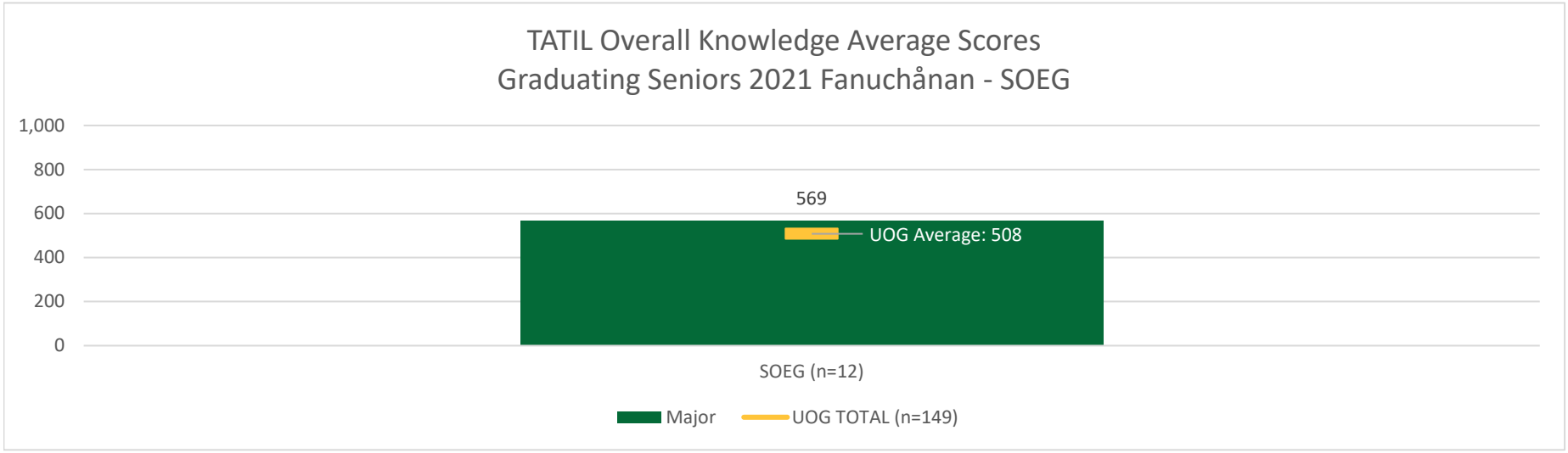
2021 Fanuchånan TATIL Average Scores - School of Engineering

	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
MAJOR by College	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
Civil Engineering (n=12)	569	±10	551	±11	607	±16	66	±1
SOEG (n=12)	569	±10	551	±11	607	±16	66	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



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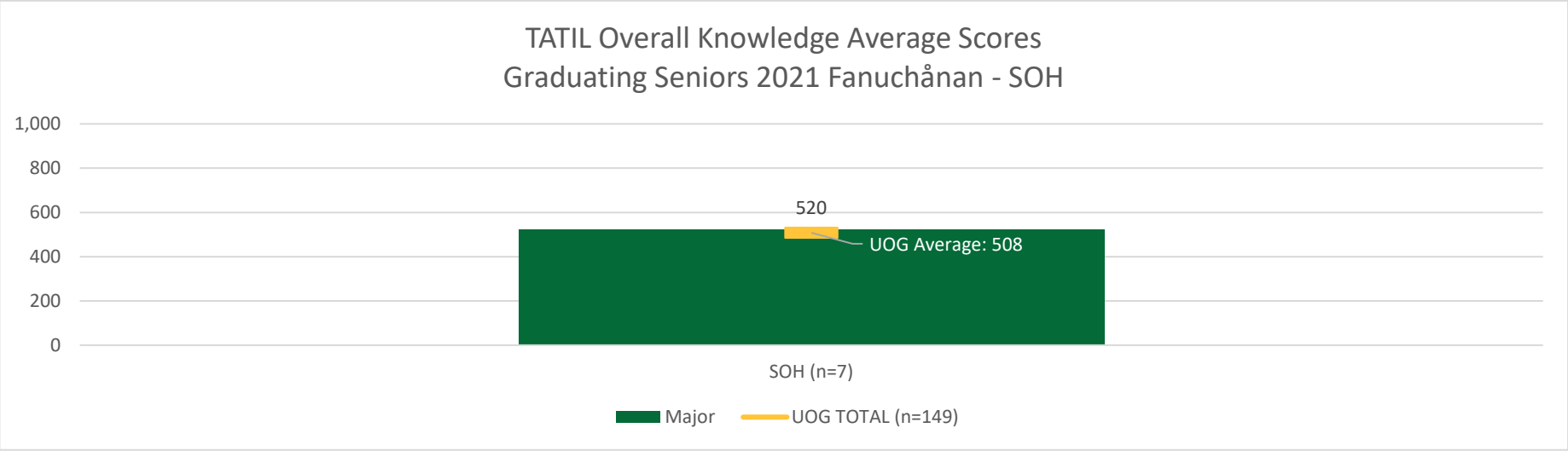
2021 Fanuchånan TATIL Average Scores - School of Health

	Overall Knowledge		Outcome 2.1		Outcome 2.2		Disposition 2.1	
MAJOR by College	Average	Standard Error	Average	Standard Error	Average	Standard Error	Average	Standard Error
Health Sciences (n=6)	549	±12	550	±12	548	±14	63	±1
SOH (n=7)	520	±12	521	±12	519	±14	64	±1
UOG TOTAL (n=149)	508	±12	484	±13	556	±16	66	±1

Scores are presented on a 1,000-point scale, where a perfect score is 1,000



The Social Work program did not have enough results to report.
Additionally, the Nursing program typically does not confer degrees during the Fanuchånan semester.

THRESHOLD ACHIEVEMENT TEST FOR INFORMATION LITERACY

Module Descriptions

CARRICK ENTERPRISES
Assessment made simple

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Module 1: Evaluating Process & Authority

This module focuses on the process of information creation and the constructed and contextual nature of source authority. There are two knowledge outcomes and three dispositions that make up this module.

Outcome 1.1: Apply knowledge of source creation processes and context to evaluate the authority of a source.

Performance Indicators:

1.1.1: Match a description of a creation process to the source type it describes.

1.1.2: Match the source type with the amount of time it usually takes to publish it.

1.1.3: Match the elements of a source record to what they reveal about the process used to create the source (e.g., publisher name, authors' names, date, subject terms, source type).

1.1.4: Match a description of a review process, such as editorial and peer review, to the source type it describes.

1.1.5: Arrange a sample set of sources into their appropriate positions on the information cycle.

1.1.6: Match an information need to the most authoritative source types (e.g., news agency, government website, scholarly article) for fulfilling that need.

1.1.7: Identify the audience for whom a source was created.

1.1.8: Identify types of scholarly products and communication modes that fall outside of the typical publication processes but are still worthy of use (e.g., conference presentations, contributed papers, discussions on association websites).

1.1.9: Identify relevant questions to ask about sources' origins and context when considering them as support for a claim.

1.1.10: Identify factors that would compromise the authority of the peer review process.

1.1.11: Match descriptions of popular, polemic, and primary documents to scenarios where it would be appropriate to use them.

1.1.12: Recognize that information is created to serve varying interests of information consumers.

Outcome 1.2: Apply knowledge of authority to analyze others' claims and to support one's own claims

Performance Indicators:

1.2.1: Identify the sponsor, organization, or institution that provides support for a site.

1.2.2: Identify relevant elements of an author's expertise.

1.2.3: Know the importance of determining the author when evaluating the authority of a source.

1.2.4: Recognize that polished, visually appealing presentation of web content does not equate to authoritative, high-quality content.

1.2.5: Recognize that expertise is contextual and positional (e.g., credentials alone are not a per se indicator of author's expertise).

1.2.6: Identify relevant questions to ask about the suitability of a source when considering it as support for a claim.

1.2.7: Identify information directly relevant to an argument.

1.2.8: Recognize the pitfalls of using the superficial indicator "peer review" when evaluating sources for authority.

1.2.9: Recognize when a quote from a well-known author or recognized expert is being used by an author to gain authority.

1.2.10: Evaluate the effectiveness of an author's use of different source types (e.g., news, research articles, blogs) to support arguments.

1.2.11: Determine the reason why a quote is used in a given passage (e.g., show significance, give authoritative support, provide context, emphasize, summarize).

1.2.12: Distinguish the key works cited in a passage from the peripheral works.

Disposition 1.1: Mindful self-reflection

Learners who are disposed to demonstrate self-reflection when they are evaluating sources of information consistently question their assumptions about what makes a source authoritative.

Example behaviors:

- Looking for features that challenge one's assumptions about the trustworthiness of one's preferred sources.
- Questioning one's own assumptions about the reliability of traditional forms of scholarly authority.
- Recognizing when there are good reasons to change one's position on an issue.

Disposition 1.2: Toleration of ambiguity

Learners who are disposed to demonstrate toleration for ambiguity when they are evaluating sources of information treat authority as subjective because it is based on the context of the information need.

Example behaviors:

- Deciding what to do when authorities disagree.
- Flexibly using traditional and non-traditional information sources at appropriate points in the research process.
- Treating authority as a flexible concept when information needs can only be met with less traditional sources.

Disposition 1.3: Responsibility to community

Learners who are disposed to demonstrate a sense of responsibility to their community when they are evaluating sources of information are conscientious about how they invoke authority in order to gain credibility with their audiences.

Example behaviors:

- Fulfilling one's responsibility to one's discourse community by using sources carefully.
- Recognizing that the sources one is permitted to use will depend on one's discourse community.
- Taking responsibility for critically evaluating and explaining sources' authority to one's audience when stating and standing by their claims.

Module 2: Strategic Searching

This module focuses on the process of planning, evaluating, and revising searches during strategic exploration. There are two knowledge outcomes and one disposition that make up this module.

Outcome 2.1: Plan, conduct, evaluate, and revise searches to achieve relevant results.

Performance Indicators:

2.1.1: Select appropriate basic and advanced search options to satisfy different needs.

2.1.2: Identify keyword searching as an appropriate basic search strategy when beginning research.

2.1.3: Apply basic search limiters or filters to increase the relevance of results (e.g., checking a "peer-reviewed" or "scholarly journals" box).

2.1.4: Given a topic, identify terms and concepts to use in a search for basic background information.

2.1.5: Given a description of a research topic, identify keywords.

2.1.6: Scan search results for synonyms to use for additional searches.

2.1.7: Decide when the number of results makes it worthwhile to read through the individual results.

2.1.8: Given a list of results, select titles relevant to the topic.

2.1.9: Given a set of results that is too large, select keywords that will effectively narrow search results.

2.1.10: Use advanced search syntax such as synonyms and truncation to increase the number of relevant results

2.1.11: Apply nested logic structures, Boolean operators, and truncation to successfully construct an advanced search.

2.1.12: Use sophisticated search limiters and modifiers to improve search results.

Outcome 2.2: Compare and contrast a range of search tools.

Performance Indicators:

2.2.1: Identify differences between search tools such as those on the open web, in a database, and in a library catalog.

2.2.2: Understand when it is appropriate to use a web search engine to find information.

2.2.3: Compare the types of sources found in different search tools.

2.2.4: Identify a range of possible sources, such as scholars, industries, and organizations, that would likely have created or collected useful information on a topic.

2.2.5: Match descriptions of scope, content, and limitations to the search tools they describe.

Disposition 2.1: Productive persistence

Learners who are disposed to demonstrate productive persistence during their searches for information approach searching as iterative and not linear by employing alternative strategies and learning from mistakes.

Example behaviors:

- Adapting and evolving new strategies rather than clinging to familiar search techniques.
- Handling feelings of frustration that commonly surface during the search process.
- Recovering from a failed search in order to continue searching until the information need is satisfied.
- Taking constructive assignment feedback from instructors as an impetus to continue searching for better sources.

Module 3: Research & Scholarship

This module focuses on the knowledge-building process and how scholars build knowledge. There are two knowledge outcomes and three dispositions that make up this module.

Outcome 3.1: Understand the processes of scholarly communication and knowledge building.

Performance Indicators:

3.1.1:	Given a literature review, identify the established knowledge that is summarized or synthesized.
3.1.2:	Given a literature review, identify the gap that the authors have identified in the existing research.
3.1.4:	Recognize that scholars bring their own perspectives to the study of a research topic.
3.1.5:	Categorize common types of sources by whether the authors are expected to list their cited sources.
3.1.6:	Identify social consequences of scientific falsification.
3.1.7:	Recognize how interpretations can change based on new research and findings.
3.1.8:	Identify reasons why scholars track down influential works.
3.1.9:	Identify venues for scholarly communication, such as books, journals, conventions, blogs.
3.1.10:	Recognize that research methods change over time.
3.1.11:	Recognize the value of emerging communication technology for strengthening scholarly communication.
3.1.12:	Evaluate an emerging scholar's likelihood of being accepted into the scholarly conversation.
3.1.13:	Given a description of scholarly disagreement, select the interpretation that acknowledges the value of disagreement for moving knowledge forward.
3.1.14:	Given a set of research needs, match them to appropriate research methods.

Outcome 3.2: Understand stages of the research process.

Performance Indicators:

3.2.1: Recognize various ways that high quality research questions can be generated.

3.2.2: Identify reasons to begin reading on a subject before solidifying an argument or thesis.

3.2.3: Distinguish between goal-oriented and exploratory searching during the research process.

3.2.4: Identify the appropriate relationship between a research question and a thesis statement.

3.2.5: Order the stages of the research process when writing a research paper.

3.2.6: Explain why research inquiry can be appropriate for personal information needs in addition to academic needs.

3.2.7: Given text with conflicting perspectives, formulate suitable research questions.

3.2.8: Analyze multifaceted research questions to identify component parts for systematic investigation.

3.2.9: Given a purpose statement from a research assignment, identify the research question that has an appropriate level of complexity for the information need.

3.2.10: Analyze the consequences of disregarding previous research in the early stages of the information creation process.

3.2.11: Match problems in specific stages of the research paper process with problems they are likely to cause in the research paper product.

3.2.12: Classify descriptions of specific actions taken during the research process by the stage in the research process when they are most likely to happen.

Disposition 3.1: Productive persistence

Learners who are disposed to demonstrate productive persistence throughout the research process approach inquiry as iterative, adjusting their research question as they learn more.

Example behaviors:

- Applying appropriate methods/practices of inquiry regardless of their complexity or negative emotional associations (e.g., frustration).
- Committing to building a knowledge base through background research when exploring an unfamiliar topic.

Disposition 3.2: Mindful self-reflection

Learners who are disposed to demonstrate self-reflection in the context of research and scholarship consistently question their own assumptions as they are challenged by new knowledge.

Example behaviors:

- Spending time exploring a topic with openness and curiosity before committing to a thesis or claim.
- Using critiques from professors, librarians, and peers to improve the quality of their inquiry.

Disposition 3.3: Responsibility to community

Learners who are disposed to demonstrate a sense of responsibility to the scholarly community recognize and conform to academic norms of knowledge building.

Example behaviors:

- Identifying and pursuing appropriate ways to enter the scholarly conversation while still an undergraduate.
- Seeking out and following established models of scholarship and inquiry.

Module 4: Value of Information

This module focuses on about information ethics and the value of information. There are two knowledge outcomes and two dispositions that make up this module.

Outcome 4.1: Recognize the rights and responsibilities of information creation.

Performance Indicators:

4.1.1: Identify reasons why plagiarism is prohibited.

4.1.2: Determine whether or not a passage is plagiarized.

4.1.3: Identify appropriate citation options when using material from a source that is cited within the source at hand.

4.1.4: Identify the type of plagiarism when presented with a plagiarized passage.

4.1.5: Recognize the benefits of copyright protections.

4.1.6: Given a list, select the purposes of citation.

4.1.7: Recognize the rights and interests of human subjects participating in research studies.

4.1.8: Recognize that where a source is found has no bearing on whether or not the source should be cited.

Outcome 4.2: Recognize social, legal, and economic factors affecting access to information.

Performance Indicators:

4.2.1: Recognize how reporting on the same event offers disparate levels of coverage when the sources are written to be disseminated in different venues.

4.2.2: Identify the relationship between individuals' organizational affiliations and their access to information.

4.2.3: Identify reasons that some people's views are not disseminated to the larger community.

4.2.5: Identify the meaning and scope of the concept of intellectual property.

4.2.6: Identify the circumstances in which one's personal information may be used by other individuals, groups, and organizations.

4.2.7: Identify reasons that access to information may be restricted, including copyright, licensing, and other practices.

4.2.8: Distinguish among the common reasons that information may be freely available, including open access, public domain, and other practices.

Disposition 4.1: Mindful self-reflection

Learners who are disposed to demonstrate self-reflection in the context of the information ecosystem recognize and challenge information privilege.

Example behaviors:

- Considering how to use existing intellectual property to spur creative work without violating the creators' rights.
- Participating in informal networks to reduce disparities caused by the commodification of information.
- Recognizing and suggesting ways to reduce the negative effects of the unequal distribution of information.

Disposition 4.2: Responsibility to community

Learners who are disposed to demonstrate a sense of responsibility to the scholarly community recognize and conform to academic norms of knowledge building.

Example behaviors:

- Accessing scholarly sources through formal channels.
- Avoiding plagiarism in their own work and discouraging plagiarism by others.
- Recognizing the value of their own original contributions to the scholarly conversation.

THRESHOLD ACHIEVEMENT TEST FOR INFORMATION LITERACY

Strategic Searching
2021 Fanuchanan - Prospective Graduating Seniors Module 2
University of Guam
February 15, 2022

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Section 1: About the Test

The Threshold Achievement Test for Information Literacy is a tool for measuring student knowledge and dispositions regarding information literacy. The test is inspired by the Association of College and Research Libraries' Framework for Information Literacy for Higher Education and by expectations set by the nation's accrediting agencies. The Strategic Searching module focuses on the process of planning, evaluating, and revising searches during strategic exploration. It tests students' ability to recall and apply their knowledge of searching and it tests their metacognition about a core information literacy disposition that underlies their behaviors.

Information Literacy Knowledge

The knowledge items are based on information literacy outcomes and performance indicators created by the test developers and advisory board of librarians and other educators. Items assess an array of cognitive processes that college students develop as they transition from pre-college to college ready to research ready. The items are presented in a variety of structured response formats to assess students' information literacy knowledge, skills, and abilities ranging from understanding to critical thinking to problem solving.

Figure 1.1 Knowledge Outcomes for Strategic Searching

Outcome 2.1	Plan, conduct, evaluate, and revise searches to achieve relevant results.
Outcome 2.2	Compare and contrast a range of search tools.

Information Literacy Dispositions

Dispositions play an important role in learning transfer, indicating students' willingness to consistently apply the skills they have learned in one setting to novel problems in new settings. The ACRL Framework highlights dispositions, which constitute affective facets of information literacy, because they are essential to students' information literacy outcomes. Dispositions interact with a student's process of defining ill-structured information problems within a new environment so that the student can transfer this learning to new problems. Dispositions are latent traits that function at an unconscious level and determine whether or not a student can transfer learning and move beyond a superficial understanding of material.

Dispositions are at the heart of a student's temperament. While some dispositions can be seen as natural tendencies, they may also be cultivated over time through intentionally-designed instruction and through exposure to tacit expectations for student behavior.

To address dispositions in the test, we use scenario-based problem solving items. Students are presented with a scenario describing an ill-defined information literacy challenge related to the content of the module. Following the scenario, students are presented with strategies for addressing the challenge. Students evaluate the usefulness of each strategy.

Information Literacy Dispositions for Strategic Searching

Students who are strategic searchers are more likely to develop a broad repertoire of search techniques because they learn from trial and error and pick up strategies from observing their professors, librarians, and peers. Since searching involves exploration and uncertainty, students must be persistent in order to sustain their searches despite difficulties and frustrations. A disposition toward productive persistence means that students are more likely to satisfy their information needs and keep searching until they find high-quality sources.

The test assesses how students understand and value exploration and how they define their role as a searcher.

Figure 1.2 Disposition for Strategic Searching

Disposition 2.1 Productive persistence

Section 2: About this Report

The report that follows is designed to help educators identify areas of strength and areas that need improvement in their students' ability to select and apply effective search strategies given varied information needs and searching environments. The report will support evidence-based decision-making and inform actions for strengthening student outcomes.

How the Report is Organized

The report presents overall and detailed results for your students. The high-level summary of results on both the knowledge and disposition dimensions for students at your institution is provided in Section 3, along with cross-institutional comparisons. Your local results are compared to other institutions in order to give an indication of how your students performed relative to other students who may have similar exposure to information literacy instruction.

Sections 4 and 5 offer details about knowledge performance. Section 4 shows the overall mean score for all students and subgroup breakouts for the standard questions you selected and your custom questions. Section 4 also gives cross-institutional comparisons.

Section 5 provides more detail on the knowledge results by presenting data on each knowledge outcome, along with breakouts and cross-institutional comparisons. Section 5 also explores the performance indicators that make up each knowledge outcome by listing performance indicator rankings that identify your students' relative strengths and weaknesses.

Section 6 presents details about dispositional performance. Your disposition results are presented with level descriptions that align with your students' mean score.

Section 7 offers suggestions for targeted readings that can assist you in following up on these results.

Knowledge Performance Levels

Three performance levels are used to describe student achievement on the knowledge section of the test. Students are assigned to one of the levels based on their mean score on the knowledge items. Levels are shown in Sections 4 and 5 and indicated by color.

Conditionally ready. Students who are conditionally ready can conduct basic searches in search tools that are familiar to them. They search using natural language but are able to identify common keywords for their topics if prompted to do so. They are able to follow instructions to locate information using their library's tools. The conditionally ready color in the charts is yellow.

College ready. Students who are college ready are able to use the library's tools independently to find information for typical college writing assignments. They are able to increase the precision of their results by adding keywords. They are able to organize their keywords using concepts such as Boolean operators. They are able to analyze item records to inform revisions to their searches, including identifying subject terms. They are able to recognize when a search is not working and are aware of at least one other search tool that they can try. College ready students can successfully conduct basic searches and make adjustments to their keywords or choose a different search tool to improve their results. The college ready color in the charts is green.

Research ready. Students who are research ready are aware of the wide range of search tools available to them and are able to select their search tool based on the type of information they are trying to find. Students are able to determine the types of sources they have discovered by deciphering the citations. They are able to increase the precision or recall of their results as needed by using keyword synonyms and search syntax. When they encounter problems, they are able to accurately evaluate their search results in order to make strategic revisions to their keywords, limiters, search tool selection, syntax, and so on. Research ready students can conduct advanced searches for information using multiple strategies that they select according to their information need and that they revise according to the results that are returned. The research ready color in the charts is blue.

Disposition Levels

Students who are weakly-disposed toward the disposition in this module are unlikely to spontaneously demonstrate these traits without guided instruction and scaffolding to support their development. They may demonstrate strong dispositions in other areas not associated with information literacy, but these are not covered by this test. The weakly-disposed color in the charts is orange.

Students who are moderately-disposed toward the trait assessed by this test are more easily guided to apply it but may not consistently demonstrate this strength when they are faced with new challenges. They may experience strain when there is a conflict between their information literacy dispositions and other strong dispositions. The moderately-disposed color in the charts is pink.

Students with strong dispositions toward the values and behaviors associated with information literacy are most likely to consistently react to new situations by drawing upon these underlying traits. The strongly-disposed color in the charts is blue.

Mean Scores and Standard Errors

Scoring on the knowledge portion is based on a partial credit model and on difficulty level. Students can achieve full, partial, or no credit on an item. Imagine a test item that has 4 possible answers, A, B, C, and D, with A and B being the correct responses. To achieve full credit, a student must select A and B and must not select C or D. A student who chooses A and B and C will receive less credit than someone who chooses just A and B.

The score a student achieves on an item is based on the difficulty of receiving a particular amount of credit for that item. Difficulties are calibrated based on a database of student scores from all participating institutions. Items have different levels of difficulty and therefore different maximum scores. Scores are presented on a 1,000-point scale, where a perfect score is 1,000.

A student's overall score is the mean of their item scores. The overall score for a group or institution is the mean of the students' scores.

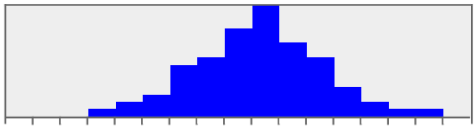
The standard error indicates the likely range of scores if the test were given again to the same students. For example, a mean score of 500 ±10 for freshmen indicates that the true score for freshmen falls between 490 and 510. To determine if mean scores of groups are meaningfully different, it is important to take the standard error into account. For example, if the mean score for sophomores is 505 ±10, then it is accurate to say that the freshmen and sophomores who were tested did not score differently. Sample size effects the standard error. An increase in sample size can result in a smaller standard error.

Note that a subgroup must consist of at least three students in order for a score to be generated. We do not recommend making results for subgroups public if they include fewer than 10 students because of concerns about identifiability and privacy.

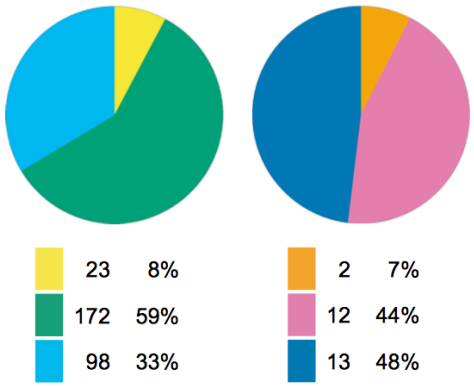
Scoring for disposition items is based on a student's judgments regarding strategies. Students earn high scores on these items if they judge behaviors associated with the disposition to be useful and behaviors not associated with the disposition to be not useful. A student's score for a disposition is the sum of the points they score on each of the strategies. Scores with their standard errors are presented on a 100-point scale.

Performance Bars, Histograms, and Pie Charts

Performance bars display where the mean score, shown in orange, for a group or subgroup falls within the three performance levels. The standard error associated with the mean is shown in black. Each performance level has a different background color: Conditionally ready is yellow, college ready is green, and research ready is blue.



Histograms are used to visually represent the relative distribution of scores in a group or subgroup. These graphs allow you to have an overall sense of how the scores fall around the mean.



Pie charts in the knowledge sections show the number and percentage of students who scored in each of the three performance levels for a group or subgroup. Each performance level has a different background color: Conditionally ready is yellow, college ready is green, and research ready is blue.

Pie charts in the disposition section show the number and percentage of students who scored in each of the three disposition levels for a group or subgroup. Each disposition level has a different background color: Weakly-disposed is orange, moderately-disposed is pink, and strongly-disposed is blue.

Associated Files

In addition to this report, the following files are included in your zip file:

1. Test Item document. A PDF document with a description of each test item.
2. Raw data file. Contains all of the scores presented in this report.
3. Student data file. Contains scores for each of your students.
4. Student data codebook. Describes the demographic options that you configured for your test.
5. Student Report zip file. Contains a directory of PDF documents with an analysis of each student's performance.

Section 3: Summary of Results

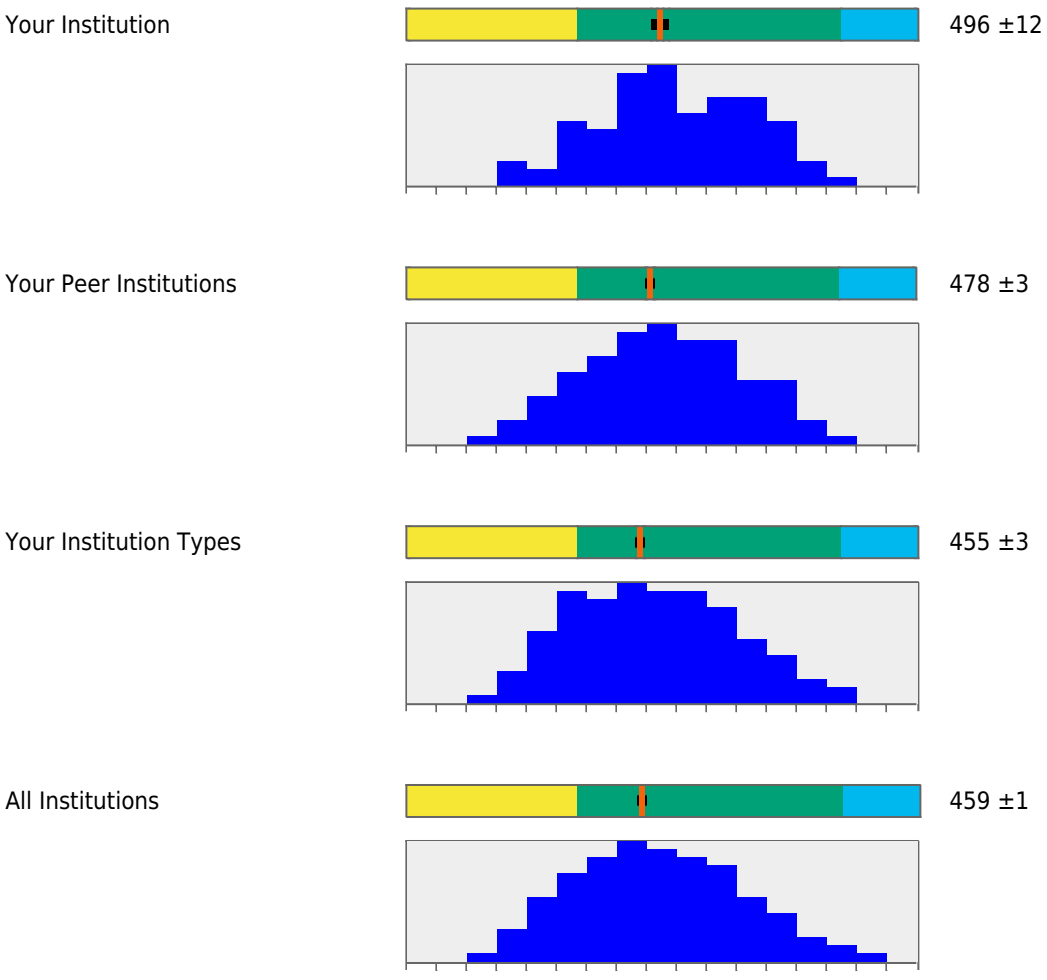
This section provides an overview of how your students performed on the Threshold Achievement Test for Information Literacy: Strategic Searching. For detailed knowledge results organized by subgroups, including standard and custom questions, refer to Section 4 and Section 5. For detailed disposition results, refer to Section 6. For additional analysis, you may wish to collaborate with your institution's research office. Consultants are also available through Carrick Enterprises.

Knowledge Results

Students who attain knowledge of information literacy concepts and practices are well-positioned to effectively address their information needs and contribute meaningfully to the information ecosystem. The knowledge dimension measured by this module specifically addresses students' ability to select and apply search strategies, use features of search tools to improve results, and identify when they need to change their search strategy in order to continue their search.

Figure 3.1 shows the average score for your students and the averages for institutional groups. The average score for your students, 496, falls within the performance level of college ready. The blue histograms show how scores were distributed.

Figure 3.1 Knowledge Results



Disposition Results

Dispositions are the qualities students cultivate that underlie and shape their actions. Strong dispositions in the information literacy areas covered by the Threshold Achievement Test for Information Literacy are associated with lifelong learning and critical thinking. Students' dispositions also contribute to the climate of the institution. They can be strengthened through high-impact pedagogical practices and social learning.

Your students earned the following mean score:

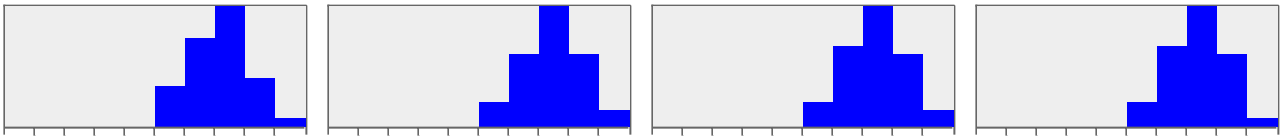
- 66 for Productive persistence

Figure 3.2 shows your institution's mean score plus the means for institutional groups. Mean scores reflect a weak, moderate, or strong inclination toward the corresponding disposition. For information about disposition levels as well as details about scoring and reading the figures, please see Section 2 of this report.

Figure 3.2 Disposition Results

Disposition 2.1 Productive persistence

Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
66	±1	68	±0	68	±0	67	±0



Disposition levels: 0 - 58 is weak; 59 - 77 is moderate; 78 - 100 is strong.

Section 4: Overall Knowledge Results

Your students answered 17 knowledge items in the Strategic Searching module. The knowledge items are based on the outcomes listed in Figure 1.1. Figure 4.1 shows the mean score and standard error for your students.

The number and percentage of students in the three performance levels is displayed in the corresponding pie chart, with the legend underneath. Also shown are your selected peer institutions, your selected institution types, and all institutions. See Section 2 for descriptions of performance levels. Students are assigned to performance levels based on their mean scores as follows:

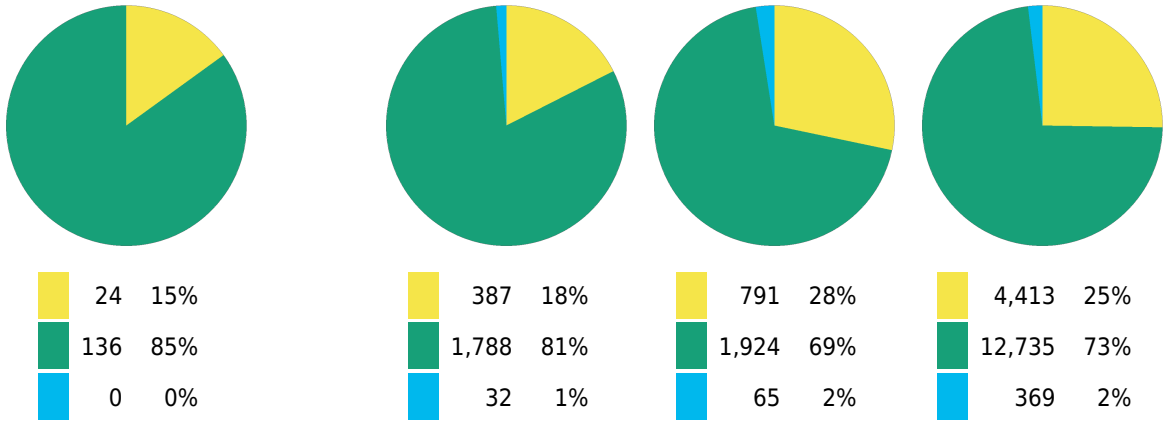
Score of 1-337: conditionally ready (in yellow)
Score of 338-851: college ready (in green)
Over 851: research ready (in blue)

Figure 4.2 presents mean scores and standard errors for breakouts based on the standard questions you selected and your custom questions.

'n/a' is used when there is no score for the group. A subgroup must consist of at least three students in order for a score to be generated.

Figure 4.1 Knowledge Results

Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
496	±12	478	±3	455	±3	459	±1



Section 5: Individual Knowledge Outcome Results

This section provides details for the individual knowledge outcomes in this module. Under each outcome, the first figure presents the mean score and standard error for your students. The number and percentage of students in the three performance levels is displayed in the corresponding pie chart, with the legend underneath. Also shown are your selected peer institutions, your selected institution types, and all institutions. See Section 2 for descriptions of performance levels. Students are assigned to performance levels based on their mean scores as follows:

Outcome 2.1	Outcome 2.2
Score of 1-351: conditionally ready (in yellow)	Score of 1-308: conditionally ready (in yellow)
Score of 352-832: college ready (in green)	Score of 309-889: college ready (in green)
Over 832: research ready (in blue)	Over 889: research ready (in blue)

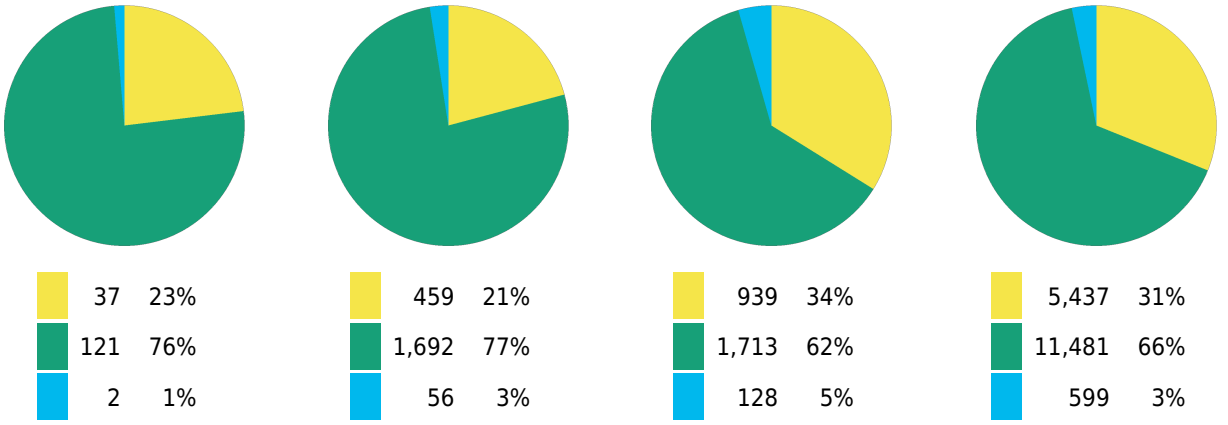
The second figure shows mean scores and standard errors for breakouts based on the standard questions you selected and your custom questions.

The third figure is a listing of the performance indicators for each outcome ranked by your students' overall performance from the strongest to the weakest. The ranking is a relative ordering and does not indicate how well your students performed on a particular performance indicator. Through the use of color bars, these figures also compare your students' performance with your peer institutions on each performance indicator. A blue bar indicates that your students' mean score is higher than or equal to the mean score of your peer institutions. A red bar indicates that your students' mean score is lower than the mean score of your peer institutions.

Outcome 2.1: Plan, conduct, evaluate, and revise searches to achieve relevant results.

Figure 5.1 Overall Results

Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
476	±13	471	±4	456	±3	448	±1



37	23%	459	21%	939	34%	5,437	31%
121	76%	1,692	77%	1,713	62%	11,481	66%
2	1%	56	3%	128	5%	599	3%

Figure 5.2 Performance Indicators Ranked

Performance indicators are ranked by your students' overall performance from strongest to weakest. The ranking is a relative ordering and does not indicate how well your students performed on a particular performance indicator. A blue bar indicates that your students' mean score is higher than or equal to the mean score of your peer institutions. A red bar indicates that your students' mean score is lower than the mean score of your peer institutions.

Scan search results for synonyms to use for additional searches. (2.1.6)

Given a set of results that is too large, select keywords that will effectively narrow search results. (2.1.9)

Decide when the number of results makes it worthwhile to read through the individual results. (2.1.7)

Given a list of results, select titles relevant to the topic. (2.1.8)

Given a description of a research topic, identify keywords. (2.1.5)

Use sophisticated search limiters and modifiers to improve search results. (2.1.12)

Select appropriate basic and advanced search options to satisfy different needs. (2.1.1)

Apply nested logic structures, Boolean operators, and truncation to successfully construct an advanced search. (2.1.11)

Apply basic search limiters or filters to increase the relevance of results (e.g., checking a "peer-reviewed" or "scholarly journals" box). (2.1.3)

Given a topic, identify terms and concepts to use in a search for basic background information. (2.1.4)

Use advanced search syntax such as synonyms and truncation to increase the number of relevant results (2.1.10)

Identify keyword searching as an appropriate basic search strategy when beginning research. (2.1.2)

Outcome 2.2: Compare and contrast a range of search tools.

Figure 5.3 Overall Results

Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
539	±16	491	±5	454	±4	480	±2

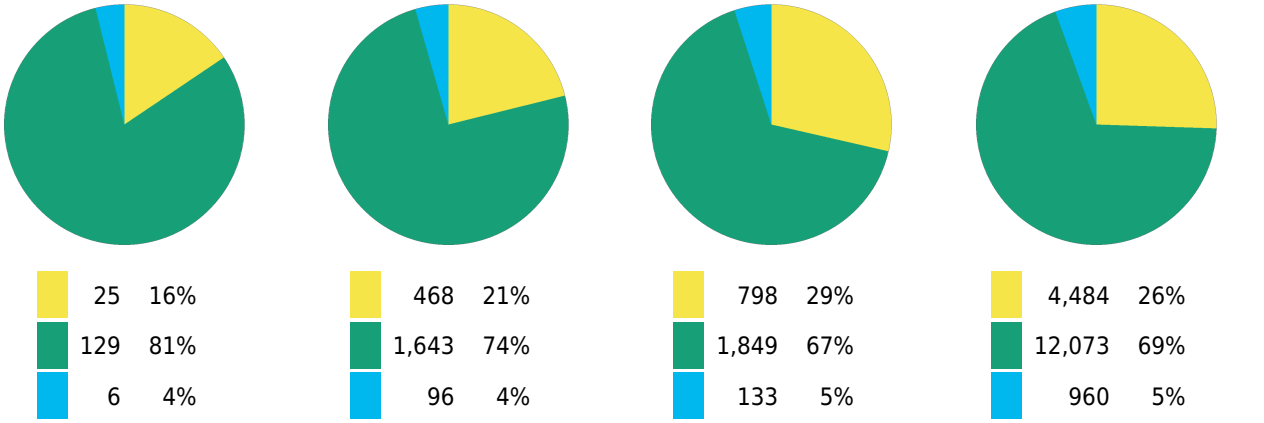


Figure 5.4 Performance Indicators Ranked

Performance indicators are ranked by your students' overall performance from strongest to weakest. The ranking is a relative ordering and does not indicate how well your students performed on a particular performance indicator. A blue bar indicates that your students' mean score is higher than or equal to the mean score of your peer institutions. A red bar indicates that your students' mean score is lower than the mean score of your peer institutions.

- Compare the types of sources found in different search tools. (2.2.3)
- Identify a range of possible sources, such as scholars, industries, and organizations, that would likely have created or collected useful information on a topic. (2.2.4)
- Match descriptions of scope, content, and limitations to the search tools they describe. (2.2.5)
- Understand when it is appropriate to use a web search engine to find information. (2.2.2)
- Identify differences between search tools such as those on the open web, in a database, and in a library catalog. (2.2.1)

Section 6: Individual Disposition Results

This test measures the strength of students' information literacy dispositions. See Section 1, About the Test, for more information about dispositions and Section 2 for details about disposition performance levels. In the pie charts below, each disposition level has a different background color: Weakly-disposed is orange, moderately-disposed is pink, and strongly-disposed is blue.

Although dispositions related to personality are generally thought to be relatively stable over time, the situational disposition assessed in this module should be expected to strengthen as students have sustained exposure to an academic community that cultivates these approaches to problem solving.

The results section below is introduced with an explanation of your students' mean score on the items associated with that disposition, followed by students' overall and subgroup results.

Disposition 2.1: Productive persistence

Learners who are disposed to demonstrate productive persistence during their searches for information approach searching as iterative and not linear by employing alternative strategies and learning from mistakes.

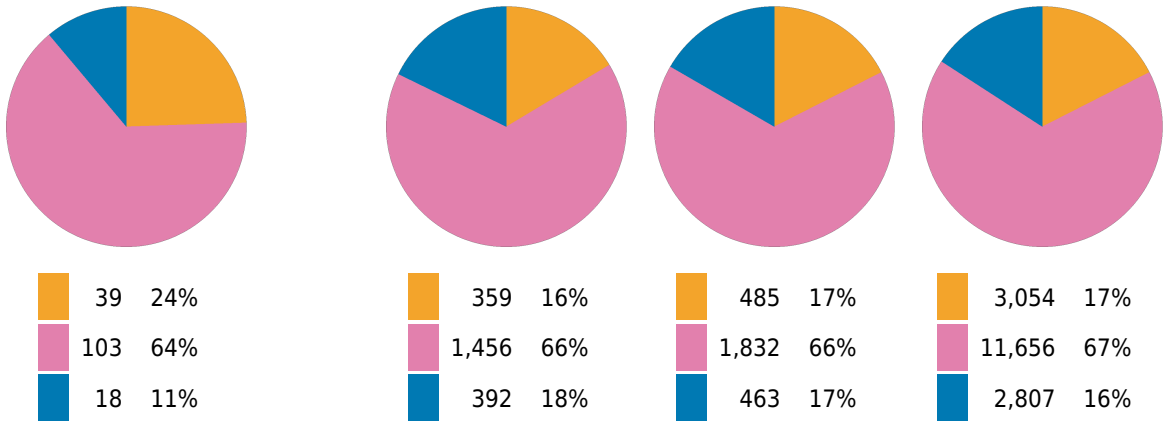
Example behaviors:

- Adapting and evolving new strategies rather than clinging to familiar search techniques.
- Handling feelings of frustration that commonly surface during the search process.
- Recovering from a failed search in order to continue searching until the information need is satisfied.
- Taking constructive assignment feedback from instructors as an impetus to continue searching for better sources.

Your students' mean score for the set of problem-solving items about productive persistence fell in the moderately-disposed range. Scores in this range suggest that students have begun to recognize that searching is an iterative process which they should not expect will proceed without setbacks. Despite having this recognition that searching requires a willingness to explore, students who are moderately disposed to productive persistence are not likely to try unfamiliar tools and advanced strategies if they do not receive direct guidance. Instead, when they encounter difficulties they will remix the limited set of tools and strategies they know in an effort to satisfy their information need.

Figure 6.1 Overall Results

Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Mean	Std Err	Mean	Std Err	Mean	Std Err	Mean	Std Err
66	±1	68	±0	68	±0	67	±0



Section 7: Targeted Reading Recommendations

Following up on assessment results is the most important step in the assessment cycle. Below are some articles and reports that may help you to formulate a plan for next steps based on the results of your Threshold Achievement assessment.

Corrall, S. (2017). Crossing the threshold: Reflective practice in information literacy development. *Journal of Information Literacy, 11*(1), 23-53. http://dx.doi.org/10.11645/11.1.2241

Graf, A. J., & Harris, B. R. (2016). Reflective assessment: Opportunities and challenges. *Reference Services Review, 44*(1), 38-47. https://doi.org/10.1108/RSR-06-2015-0027

Hinchliffe, L. J. (2015). Professional development for assessment: Lessons from reflective practice. *Journal of Academic Librarianship, 41*(6), 850-852. doi:10.1016/j.acalib.2015.10.004

Markless, S., & Streatfield, D. (2017). How can you tell if itâ€™s working? Recent developments in impact evaluation and their implications for information literacy practice. *Journal of Information Literacy, 11*(1), 106-119. http://dx.doi.org/10.11645/11.1.2201

Tewell, E. (2016). Putting critical information literacy into context: How and why librarians adopt critical practices in their teaching. *In the Library with the Lead Pipe*. http://www.inthelibrarywiththeleadpipe.org/2016/10/

You assessed students as part of an effort to measure information literacy at the institution-level. Your TATIL results may provide evidence for your accreditation self-study report. The following resources may help you to draft an ongoing assessment plan as you think about how to contribute to a culture of assessment on your campus:

Baker, G. R., Jankowski, N., Provezis, S. & Kinzie, J. (2012).Â *Using assessment results: Promising practices of institutions that do it well*.Â Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).

Blank, J. M., McGaughey, K. J., Keeling, E. L., Thorp, K. L., Shannon, C. C., & Scaramozzino, J. M. (2016). A novel assessment tool for quantitative evaluation of science literature search performance: Application to first-year and senior undergraduate biology majors. *College & Research Libraries, 77*(6), 682-702. https://doi.org/10.5860/crl.77.6.16551

Gross, M., Latham, D., & Armstrong, B. (2012). Improving below-proficient information literacy skills: Designing an evidence-based educational intervention. *College Teaching, 60*(3), 104-111. doi:10.1080/87567555.2011.645257

Squibb, S. D., & Mikkelsen, S. (2016). Assessing the value of course-embedded information literacy on student learning and achievement. *College & Research Libraries, 77*(2), 164â€“183. https://doi.org/10/5860/crl.77.2.164

Suskie, L. A. (2018). *Assessing student learning: A common sense guide*. 3d ed. San Francisco, CA: Jossey-Bass.

Wakimoto, D. K., Alexander, S., Bussman, J. D., Winkelman, P. & Jiansheng, G. (2016). Campus-wide information literacy assessment: An opportunity for library leadership through understanding faculty perspectives. *Library Leadership & Management, 31*(1), 1-19.

Whitlock, B. & Ebrahimi, N. (2016). Beyond the library: Using multiple, mixed measures simultaneously in a college-wide assessment of information literacy. *College & Research Libraries, 77,* 236-262. doi:10.5860/crl.77.2.236

If you have not already completed a curriculum map at University of Guam, curriculum analysis may be an important next step for identifying courses or milestones where information literacy instruction could significantly affect student outcomes. Your TATIL results could provide you with the foundational findings you need to get faculty interested in helping you map their curriculum. The following resources explain the process and provide case studies:

Buchanan, H., Webb, K. K., Houk, A. H., & Tingelstad, C. (2015). Curriculum mapping in academic libraries. *New Review of Academic Librarianship, 21*(1), 94-111. doi:10.1080/13614533.2014.1001413

Franzen, S., & Bannon, C. M. (2016). Merging information literacy and evidence-based practice in an undergraduate health sciences curriculum map. *Communications in Information Literacy, 10*(2), 245-263.

Moselen, C., & Wang, L. (2014). Integrating information literacy into academic curricula: A professional development programme for librarians at the University of Auckland. *Journal of Academic Librarianship, 40,* 116-123. doi:10.1016/j.acalib.2014.02.002

If your results suggest a need to develop new curriculum or create a college-wide dialogue about students' information literacy among faculty, the following resources suggest possible models:

Bowles-Terry, M., & Donovan, C. (2016). Serving notice on the one-shot: Changing roles for instruction librarians. *International Information & Library Review, 48*(2), 137-142.

Cowan, S. & Eva, N. (2016). Changing our aim: Infiltrating faculty with information literacy. *Communications in Information Literacy, 10*(2), 163-177.

Hoffmann, D., & Wallace, A. (2013). Intentional informationists: Re-envisioning information literacy and re-designing instructional programs around faculty librarians' strengths as campus connectors, information professionals, and course designers. *Journal of Academic Librarianship, 39,* 546-551. doi:10.1016/j.acalib.2013.06.004

Johnson-Grau, G., Archambault, S. G., Acosta, E. S., & McLean, L. (2016). Patience, persistence, and process: Embedding a campus-wide information literacy program across the curriculum. *Journal of Academic Librarianship, 42*(6), 750-756. https://doi.org/10.1016/j.acalib.2016.10.013

Jumonville, A. (2014). The role of faculty autonomy in a course-integrated information literacy program. *Reference Services Review, 42,* 536-551. http://dx.doi.org/10.1108/RSR-07-2014-0020

Junisbai, B., Lowe, M. S., & Tagge, N. (2016). A pragmatic and flexible approach to information literacy: Findings from a three-year study of faculty-librarian collaboration. *Journal of Academic Librarianship, 42*(5), 604-611. https://doi.org/10.1016/j.acalib.2016.07.001

Smith, P. A. (2016). Integrate and assess: Information literacy as quality enhancement of undergraduate curriculum. *Communications in Information Literacy, 10*(2), 214-244.

If you are interested in the disposition portion of the test, you may want to learn more about the connection between dispositions and learning. Consider how understanding of dispositions can be used to promote training transfer, as described in the following sources:

Bereiter, C. (1995). A dispositional view of transfer. In A. McKeough, J. Lupart, & A. Marini (Eds.), *Teaching for transfer: Fostering generalization in learning* (pp. 21â€“34). Mahwah, NJ: Lawrence Erlbaum.

Bonnet, J. L., Cordell, S. A., Cordell, J., Duque, G. J., MacKintosh, P. J., & Peters, A. J. (2013). The apprentice researcher: Using undergraduate researchers' personal essays to shape instruction and services. *portal: Libraries and the Academy, 13,* 37-59. https://doi.org/10.1353/pla.2013.0007

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Appendix A. Student Profile

The figure below reports the available demographic data; not all elements of demographic data were reported for all students.

Figure A.1 Student Profile

	Your Institution		Your Peer Institutions		Your Institution Types		All Institutions	
Subgroups	N	%	N	%	N	%	N	%
TOTAL	160	100	2,207	100	2,780	100	17,517	100

Appendix B. Institutions

Your Peer Institutions

Auburn University
James Madison University
The University of Arizona Global Campus

Members of Your Institution Types

California State University, Fresno
Emporia State University
Franklin Pierce University
Purdue Fort Wayne
University of Guam
University of Montevallo

All Institutions

American University of Kuwait
Arkansas Tech
Auburn University
Brigham Young University
Bryant & Stratton College
Bryn Athyn College
Bucknell University
California State University, Fresno
Central Connecticut State University
Cerritos College
Chapman University
Emporia State University
Franklin Pierce University
James Madison University
Longwood University
Ottawa University
Palomar College
Purdue Fort Wayne
Texas A&M University
Texas A&M University - Corpus Christi
The Harker School
The University of Arizona Global Campus
University of Guam
University of Lethbridge
University of Montevallo
Valencia College