Characteristics of Excellence:

Through this chapter Trinity will demonstrate compliance with these Middle States standards:

Standard 1:   Mission and Goals
Standard 6:   Integrity
Standard 7:   Institutional Assessment
Standard 11:   Educational Offerings
Standard 12:   General Education
Standard 14:   Assessment of Student Learning

I. INTRODUCTION

As the first chapter of this self-study makes clear, Trinity's paradigm shift has resulted in a rich and diverse student body. The changing student profile presents complex challenges as well as wonderful opportunities to educate traditionally-underserved constituencies. The paradigm shift requires ongoing adaptations in curricular design and delivery; in pedagogy and teaching styles; and in academic advising and support services. Serving the citizens of the Washington, D.C. metropolitan area with mission and passion, Trinity is committed to redesigning its curricula, teaching, and advising to help its students succeed academically. To pursue its mission effectively, Trinity's assessment of student learning must reflect and respond to the paradigm shift.

Throughout this chapter and subsequent chapters in this self-study, the creative work of Trinity's faculty and staff is noteworthy. Success in this endeavor has required significant change in the construction of courses and syllabi, pedagogy and academic advising, student support services and information systems. The hard work, ingenuity and dedication of Trinity's faculty and staff have made Trinity's successful adaptation to the paradigm shift possible.

Learning assessment at Trinity measures student progress from matriculation to graduation. Entrance assessments, conducted as students begin at Trinity, provide baseline data for evaluating their initial knowledge and skills. As students progress through their programs of study, Trinity collects additional data. For example, surveys are used to assess the impact of the first year experience on students' academic foundations and level of engagement. Trinity also measures achievement of student learning goals through course embedded assessments, academic program reviews, and transcript analysis. As students complete their education, Trinity employs a variety of measures to assess summative learning. For instance, major programs evaluate student learning outcomes through their capstone courses, senior seminars, comprehensive examinations, and student portfolios.

A shared vision and common set of characteristics link all these assessment activities. First, in keeping with Middle States Standard 1, learning assessment at Trinity is mission-driven. In every context where assessment takes place, the assessment questions posed, and the learning goals

articulated, reflect Trinity's mission and educational philosophy. Second, in keeping with Middle States Standard 14, learning assessment at Trinity is student-centered. It is built upon understanding and respect for the specific educational needs, challenges, and aspirations of Trinity's distinctive student populations. Third, in keeping with Middle States Standard 11, learning assessment at Trinity is broadly-defined. It seeks to measure the totality of students' learning experiences—their development of foundational skills, their mastery of advanced knowledge, their cultivation of civic and professional experience, and their integration of skills, knowledge, and experience into a coherent whole. Fourth, in keeping with Middle States Standard 7, learning assessment at Trinity is collaborative. Faculty and administrative staff work together to design and carry out assessment activities. Finally, in keeping with Middle States Standard 14, learning assessment at Trinity is results-oriented. Its purpose is to illuminate both achievements and problems in ways that help Trinity improve teaching and learning.

Within the context of the shared assessment vision and the university-wide paradigm shift, Trinity's collegiate units each have distinct goals, programs, and student populations. The College of Arts and Sciences (CAS) helps women develop the knowledge, skills, and confidence to become leaders through undergraduate programs that combine a strong foundation in the liberal arts with experiential learning.   The School of Professional Studies (SPS) supports the professional advancement of working men and women through liberal arts-grounded, career-focused programs at the undergraduate and graduate levels. The School of Education (EDU) serves educators in all stages of their careers through co-educational teacher certification programs as well as graduate programs in counseling, teacher preparation, curriculum design, and administration.

Learning assessment in the three collegiate units is tailored to each school's goals, programs, and students. Assessment in CAS and in SPS undergraduate programs measures students' acquisition of college-level academic proficiencies and subject-area knowledge. Meanwhile, assessment in SPS and EDU graduate programs evaluates students' mastery of advanced knowledge and skills appropriate to the program. SPS graduate assessment is conducted through course-level evaluations and the program review process, while EDU graduate assessment is structured to meet the accrediting requirements of NCATE.[1]

This chapter will focus on the assessment of undergraduate student learning. Though the undergraduate programs in CAS and SPS serve distinct student populations and are delivered through separate formats, they offer the same degrees (B.A. and B.S.) and share fundamental learning goals. Therefore, it is appropriate to assess educational outcomes across the undergraduate student body.

Assessment of undergraduate student learning is a complex and multi-faceted task. As Middle States recognizes in Standard 14, institutions need not assess every student learning goal every year. Each institution is guided by its own mission and priorities to choose which assessment tasks to perform, within what time frame, and for what purpose. In fact, institutional-level assessment must be strategically selective, focusing on the student learning outcomes deemed most critical to the

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[1] The School of Education also offers undergraduate majors in CAS and SPS. Assessment of undergraduate education majors' general education coursework takes place through CAS or SPS, while their upper-level work is assessed according to NCATE standards.

current phase in the institution's evolution. Accordingly, Trinity has developed a student learning assessment plan that reflects its commitment to the success of the particular student populations it serves. The plan presently focuses on a carefully-chosen sub-set of the institution's learning goals: those dealing with writing ability, quantitative ability, and information literacy.

These particular learning goals have been selected in order to track Trinity students' developmental trajectory for key academic skills. A focus on these key academic skills provides a platform for assessing student progress across the curriculum. Bright and capable students come to Trinity to realize their hopes and dreams. Many are coming from high schools that have ill prepared them for collegiate work. Others are arriving after an interruption of years in their educational progress. Assessing and developing these key academic skills provides the basis for leveling the educational playing field. Academic confidence is as important to a student's success as her motivation to achieve her degree. Writing, quantitative, and information literacy skills are confidence builders as well as building blocks for advanced academic work. First generation college students do not necessarily have the resources for developing these academic skills in their community or family contexts. Trinity's early and continuing emphasis on key academic skills provides academic "insurance" for degree progress and life-long learning.

This chapter outlines a plan for assessing undergraduate student learning outcomes in writing, quantitative skills, and information literacy. The first section presents a more detailed statement of the plan's learning goals. The second section provides a rationale for the selection of these foundational goals. This is followed by a review of ongoing data collection and a set of proposals for filling gaps in the data. The final section summarizes findings from the outcomes data and discusses how these findings have been used to improve undergraduate teaching and learning in the areas of writing, information literacy, and quantitative literacy.

The following chapters address other dimensions of student learning assessment at Trinity. Chapter 3 focuses on Trinity's general education curricula. It analyzes whether the current design and delivery of general education curricula provide the most effective means to achieve their learning goals. Chapter 4 covers the assessment of other educational programs and offerings, including graduate programs in the School of Professional Studies as well as experiential and service learning programs. Information on the School of Education's student learning assessment is found in the NCATE accreditation materials, which are available online and in the Document Room.

II. TRINITY'S STUDENT LEARNING ASSESSMENT PLAN: GOALS AND RATIONALE

A. Student Learning Goals

Trinity has articulated the following goals for the focus of its institution-wide undergraduate student learning assessment:

Writing Goals:

1. The student is able to organize, draft and revise written documents effectively.
2. The student is able to write for a variety of audiences and purposes.
3. The student makes a logical written presentation.

4. The student writes clearly, concisely and precisely in a variety of formats.

Information Literacy Goals (adapted from the Association of College and Research Libraries [ACRL] Standards):

1. The student "is able to determine the nature and extent of information needed"
2. The student "accesses needed information effectively and efficiently"
3. The student "evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system"
4. The student "uses information effectively to accomplish a specific purpose"[2]

Quantitative Literacy Goals (adapted from the Mathematical Association of America [MAA] Standards):

1. The student is able to "interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them"
2. The student is able to "represent mathematical information symbolically, visually, numerically and verbally"
3. The student is able to "use arithmetical, algebraic, geometric and statistical methods to solve problems"[3]

B. Rationale

Trinity's mission and student profile make it imperative to focus upon learning goals whose assessment can document student success in transitioning from pre-collegiate to college-level proficiencies. As previously discussed, many students arrive at Trinity with insufficient academic preparation and/or significant time lapses in their educational careers. The bimodal age distribution of Trinity undergraduates warrants a focus on student learning goals that address both the under-preparedness of recent high school graduates, and the need to refresh the prior classroom learning of older students who have been out of school for a period of time.

A substantial proportion of Trinity students attended high school in the District of Columbia, where residents have some of the lowest average SAT scores in the nation in both math and verbal skills. It is clear from many sources (including admissions essays, English and math placement tests, first semester grade reports, advising sessions, and tutorial needs) that many entering students show academic weakness in these areas. As retention and completion issues have become more challenging for Trinity, assessment reveals that writing, analytical, and quantitative skills are critical for success in both first year courses and in upper level curricula. While Trinity students have the ability and motivation to learn, Trinity must help them realize their aspirations by providing effective instruction in the skills that are crucial building blocks for persistence and success in college.

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[2]Association of College and Research Libraries, "Information Literacy Competency Standards for Higher Education," http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm.
[3] MAA standards referenced in: Marcia Davidson and Gary McKinney, "Quantitative Reasoning: an Overview." *Dialogue* (Western Washington University), http://www.ac.wwu.edu/~dialogue/issue8.html.

The growing proportion of Trinity students for whom English is a second language intensifies the importance of assessing, and addressing, students' reading, writing and information literacy skills. For students who are striving to master the English language, the processes of accessing and evaluating information, and composing written work, present double challenges. As an institution whose pedagogy and assessment instruments were designed for native English speakers, Trinity needs to develop new models for instruction and evaluation.

Between 2002 and 2005, more than two-thirds of the students admitted into the College of Arts and Sciences needed developmental coursework to improve their writing skills before enrolling in college-level composition. Depending upon their initial placement, these students required either two semesters of developmental coursework (Grammar and Writing Workshop, followed by Introduction to College Writing) or one semester (Introduction to College Writing) before taking College Composition.

CHART 2.1: Composition Placement Results by Academic Year

	N	*Grammar and Writing Workshop*	*Introduction to College Writing*	*College Composition*	*Honors English Seminar*
2002-2003	190	**31%**	**44%**	20%	5%
2003-2004	191	**24%**	**49%**	19%	8%
2004-2005	200	**15%**	**49%**	32%	5%
Grand Total	583	**23%**	**47%**	24%	6%

During that same period, entrance assessments identified more than half of incoming students as needing instruction in basic algebraic principles and operations before enrolling in collegiate mathematics.

CHART 2.2: Mathematics Placement Results by Academic Year

	N	*Intermediate/ Basic Algebra*	*Elementary Mathematical Modeling/ Foundations of Mathematics*	*Pre-Calculus/ Calculus*
2002-2003	199	**59%**	19%	22%
2003-2004	210	**63%**	18%	19%
2004-2005	200	**57%**	21%	23%
Grand Total	609	**60%**	19%	21%

A cross-tabulation of mathematics and English placement test results reveals the scope of the challenges facing many incoming Trinity students. More than three-quarters of incoming students place into at least one developmental course in math or English. Approximately half of incoming students in the College of Arts and Sciences require additional academic support and instruction in both of these foundational areas.

CHART 2.3: Skill Needs by Academic Year, Percentage Table

	N	*None*	*English Only*	*Mathematics Only*	*English and Mathematics*
2002-2003	184	16%	9%	25%	50%
2003-2004	181	13%	13%	23%	51%
2004-2005	183	22%	12%	21%	44%
Grand Total	548	17%	11%	23%	49%

Trinity is dedicated to bridging the gap between students' initial level of academic preparedness and college level work in writing and critical and quantitative reasoning. Increased understanding of these key student learning outcomes through systematic measurement is essential to Trinity's efforts to promote student success.

C. Assessment Questions

Several questions drive Trinity's work to assess and improve student learning outcomes in the areas of writing proficiency and quantitative and information literacy:

  1. Are students' initial writing, quantitative and information literacy proficiencies accurately assessed so that their needs can be appropriately met?

  2. How effective are developmental courses and other first-year offerings in aiding students' academic transition into college, and how are they contributing to students' foundations in the areas of writing, quantitative, and information literacy proficiencies?

  3. Do upper-level course and program offerings enable students to build upon these foundational skills?

  4. Upon graduation from Trinity are students proficient in the areas of writing, quantitative literacy and information literacy?

Assessment is a dynamic process, not a static one. Therefore, the above goals and questions may change as Trinity continues to assess its curricular offerings. Trinity's aim is to develop an assessment process that is focused on institutional improvement while flexible enough to respond to increased understanding and new questions.

III. CURRENT AND PROJECTED DATA COLLECTION

A. Current Data Collection

Trinity's undergraduate learning assessment plan is a work in progress, with some components fully operational, some in their pilot stages, and others in the planning phase for future implementation. In keeping with Middle States Standard 7, which calls for use of multiple data sources, the institution currently collects a wide range of qualitative and quantitative data that provide both direct and indirect measures of students' learning throughout their academic careers. At the course and program levels, measurement of student achievement is ongoing through course-embedded assessment and regularly-scheduled program reviews. In addition, locally developed and nationally benchmarked surveys, such as the Trinity Career Services Graduation Survey and the Noel-Levitz College Student Inventory, are routinely administered institution-wide.

Trinity's assessment plan is designed to link these ongoing assessment efforts with other available but as-yet untapped data in ways that will permit richer, more complete assessment of student learning outcomes. Where possible, Trinity has worked to ground the plan in existing practice, in

accordance with Middle States' observation that "in developing their assessment plans, institutions should begin…with those assessment measures already in place" (Standard 14). Writing, quantitative literacy, and information literacy are educational outcomes that are already formally articulated at several levels within the institution, and are the foci of ongoing assessment efforts at the course, program, and institutional level.

1. General Education

The structure of Trinity's general education curricula supports an institutional focus on writing, quantitative literacy, and information literacy. Writing, quantitative literacy, and information literacy are a subset of the learning objectives articulated by the Foundation for Leadership Curriculum (FLC), the general education program in the College of Arts and Sciences. These skills are learning objectives in specific courses required by both the FLC and the Core Curriculum (Core), which is the general education program in the School of Professional Studies.

Upon completion of their FLC requirements, students are expected to be able to "Write clearly, coherently, persuasively and logically" and "use quantitative analysis and reasoning." Information literacy is not articulated as a separate goal of the curriculum, but several of the FLC goals speak to the importance of information literacy, including reading with critical analysis, and applying the methods and techniques of scientific inquiry.

Unlike the FLC, the Core curriculum does not state its goals in terms of specific student learning expectations. However, there is considerable overlap between courses satisfying the FLC and the Core: both curricula require students to complete College Composition (ENGL 107) and either Elementary Mathematical Modeling (MATH 108) or Foundations of Mathematics (MATH 109), courses designed to provide students with foundational writing, information literacy, and quantitative skills.

- **College Composition** is designed to further students' ability to compose persuasive thesis-driven essays. Upon completion of the course, students will be able to produce fully-developed research papers, critically analyze college-level texts, and identify and cite sources.

- **Elementary Mathematical Modeling** builds on students' understanding of algebraic principles and emphasizes the application of mathematical functions to explore real-world data and phenomena; **Foundations of Mathematics** also expands on students' understanding of algebra to explore logic, probability and statistics.

2. Course and Program-Level Assessment

Trinity's faculty are committed to writing, quantitative literacy and information literacy in ways that go well beyond the general education requirements.   A review of ongoing assessment practices revealed that writing, quantitative literacy, and information literacy are central to ongoing assessment efforts across programs in the College of Arts and Sciences and the School of Professional Studies.

Middle States Standard 14 states that institutions must articulate student learning expectations at the institutional, program, and course levels; institutions must also ensure that expectations are consonant and mutually reinforcing across those levels. At Trinity, all academic programs are expected to translate university priorities into locally specific goals. For example, Trinity has directed the faculty to articulate student learning objectives that are reflective of the institution's mission and goals within each course syllabus. In response, many faculty members have revised their syllabi to specify more concrete and measurable expectations for student learning. An analysis of the ways in which course syllabi articulate student learning goals is available in the Document Room.

Additionally, the program review process (discussed in detail in chapter four) is designed to ensure that expectations of student learning are clearly articulated at the program level and that those expectations are consistent with the mission of the university, while allowing programs the freedom to develop assessment strategies that are locally meaningful. For its review, each program selects and measures learning objectives that are both important to the program and reflective of Trinity's mission and goals.

As part of Trinity's Self-Study, the Office of Academic Affairs reviewed program assessment reports submitted between 2000 and 2005, during which twenty-one undergraduate programs participated in the review process. Goals addressing writing skills, information literacy, and quantitative literacy were strongly represented in these reports, attesting to the university-wide focus on addressing and assessing these goals. Several programs identified writing, quantitative, and information literacy competencies as being among the most important to their continued efforts to improve student learning. 38% of programs elected to focus their assessment efforts on goals related to writing proficiency, including several science and social science programs. 38% of programs also stated student learning goals involving quantitative literacy. Finally, 71% of programs assessed student specific information literacy goals, reflecting the crucial role that information literacy skills play in virtually all disciplines. A breakdown of these goals by program is available in the Document Room.

Many programs evaluate students' writing skills, information literacy, and quantitative literacy not only through program reviews but also through the Senior Assessment process. Although each program's Senior Assessment primarily measures its majors' discipline-specific knowledge, many programs also evaluate writing, quantitative, and research skills as part of their Senior Assessment. All programs require written work for the Senior Assessment, whether in the form of a thesis, written comprehensive exam, research paper, and/or student portfolio. At least five programs require quantitative analysis as part of their Senior Assessment, and at least eight require research projects or papers that incorporate information literacy skills.

3. Institution-Wide Surveys

Trinity conducts a range of nationally benchmarked and locally developed surveys that collect information relevant to students' academic achievement in the areas of writing proficiency and information and quantitative literacy. These surveys include:

- Trinity Entrance Assessments: Composition, Mathematics

- CIRP (Cooperative Institutional Research Program) – First Year CAS
- CSS (College Student Survey) – Seniors
- CSI (College Student Inventory) – Future Focus First Year
- First Year Initiative
- CoRAL Community-Based Learning Survey – First Year
- NSSE (National Survey of Student Engagement) – First Year, Seniors
- Graduation Survey – Seniors

The first institutional assessments, conducted as students begin at Trinity, generate baseline data on writing and quantitative ability. In addition, Trinity conducts surveys in which entering students self-report their ability levels with respect to writing, quantitative literary and aspects of information literacy. As students progress through their foundational coursework, Trinity collects additional data. For example, transcript analysis is utilized to study completion time and grade distribution for general education requirements, including student writing and quantitative literacy skills. Finally, when students complete their undergraduate education, Trinity employs a variety of measures to assess summative learning, including graduating student surveys and Senior Assessments.

B. Areas for Improvement in Data Collection and Assessment

Historically, data collection and assessment efforts have focused on students in the College of Arts and Sciences. The national benchmarking surveys used by Trinity were better suited to collect information on "traditional" students --- recent high school graduates pursuing their degree at a residential college. These surveys were not as appropriate for the working adults who attend SPS, and were not administered to SPS students. To rectify this disparity, Trinity has begun modifying assessment practices to facilitate assessment of all undergraduates. For example, Trinity has begun to develop instruments for SPS that parallel the national instruments administered to students in the College of Arts and Sciences, such as the entering student survey and a graduating student survey. The graduating student survey was first administered in May 2005; the entering student survey will be administered to incoming students at the start of the 2006-07 academic year. These efforts are crucial to ensure that Trinity understands the learning needs of its two undergraduate student populations equally well. They also help ensure Trinity's fulfillment of Middle States Standard 11, which calls for "practices that are appropriate to and supportive of adult learners."

In addition, beginning in Fall 2005, students in the School of Professional Studies have been required to take a mathematics and English placement exams, unless they are transferring credit to fulfill requirements in these areas. The data collected from these exams will enable Trinity to gain a fuller, more complete picture of incoming student needs and abilities, and will facilitate the more effective placement of SPS students in writing and quantitative courses.

In both the College of Arts and Sciences and the School of Professional Studies, indirect measures of student learning such as surveys must be supplemented through more effective institutional-level collection and analysis of data that directly demonstrate student learning outcomes. Trinity extensively surveys its students' perceptions of what they are learning. For example, items addressing general education learning outcomes were recently added to the Trinity-wide course evaluation instrument. However, such self-reported data are not sufficient to demonstrate student learning. They only become meaningful when analyzed in conjunction with data from other sources.

Trinity is therefore beginning to aggregate and analyze direct measures of student learning. For instance, math and English placement data had not been evaluated over time or across the institution before 2005. In Fall 2005 Trinity updated its student records system, making possible more comprehensive assessment of student skill development in writing and quantitative reasoning. The Office of Academic Affairs conducted a preliminary assessment of incoming student ability in mathematics and English, connecting placement results to student transcript data. A summary of the analysis is presented in the following section.

IV. RESULTS OF STUDENT LEARNING ASSESSMENT

A. Establishing a Baseline: Entrance Assessments

Assessment Questions	1. Are students' initial writing and quantitative proficiencies accurately assessed so that their needs can be appropriately met? 2. How effective are developmental courses in aiding students' academic transition into college, and how are they contributing to students' foundations in the areas of writing, quantitative, and information literacy proficiencies?

Data Sources	1. Placement Data
	  i. Mathematics
	  ii. English
	 2. Course evaluations
	 3. Transcript Data
	  i. Enrollment and completion, Composition and Mathematics courses
	  ii. Earned GPA, Composition and Mathematics courses
	  iii. Midterm and cumulative GPA, Fall and Spring
	 4. Enrollment and Registration Data
	  i. Current enrollment status
	  ii. Full-time versus part-time

Proposed Timeline	Annual

Trinity evaluates incoming undergraduates in terms of writing and mathematical ability. Student performance on math assessment tests results either in their placement in a collegiate preparatory math course (Math 101 or Math 103) or in a math course fulfilling the general education requirement. Students must place out of, or successfully complete, Math 101 or 103 before enrolling in Math courses that fulfill the general education requirement. Similarly, students' performance on writing assessments results in their placement in one of several courses in Trinity's writing sequence. Students with the greatest writing development needs are initially placed in ENGL 103 (Grammar and Writing Workshop) which they must complete with at least a grade of "C" before taking ENGL 105 (Introduction to College Writing).   Students who are initially placed in ENGL 105 must earn at least a "C" before enrolling in ENGL 107 (College Composition), which fulfills the general education writing requirement. Students with a higher level of proficiency place directly into College Composition or the Honors first-year writing seminar.

Entrance assessments can play a crucial role in Trinity's student learning assessment plan. They provide invaluable information on the learning needs and knowledge gaps of entering students; they help place students in courses most appropriate to their knowledge levels; they direct academic support resources to their most critical uses; and they allow Trinity to track students' progress in achieving learning goals over time. By analyzing student success in the classes they initially place into, and by relating students' initial placements to their eventual completion of higher-level courses, Trinity can assess how well its entry-level courses are serving student needs and preparing students for further academic progress.

Trinity has only recently begun to analyze student placement and academic success data in a systematic way. Preliminary analysis indicates that entrance assessments accurately place students into the courses most appropriate to their incoming skill levels. For example, 82% of students who placed into ENGL 105 in Fall 2004 received passing grades (A's, B's, or C's), while in Fall 2005, 89% of those completing the course received a grade of C- or above. Preliminary analysis also reveals that students who initially place into developmental writing and math courses are almost as likely to go on to earn academic credit in the general education composition and mathematics courses as are students who place directly into the college-level courses. These results indicate that Trinity's developmental writing and math courses provide effective skill building opportunities for many Trinity students, allowing them to complete their general education requirements and move forward successfully into the next phase of their education. (For a more detailed analysis of student placement data, see the report in the Document Room).

However, substantially more analysis is needed to determine whether Trinity's current developmental courses best meet the needs of its changing student population, particularly the needs of students who do not speak English as their primary language. The English and Mathematics faculty are involved in ongoing efforts to strengthen the developmental course sequences in mathematics and composition. For example, the English program has chosen to focus on the composition sequence for this cycle of their program review, with the goal of strengthening student success in completing college composition requirements. Similarly, the Mathematics program is assessing student success in acquiring basic quantitative skills as part of its program review.   For students enrolled in its developmental courses, the math program has set student learning goals for computational skills and application of quantitative reasoning to real-world applications. Both the English and Mathematics programs are in the second year of their program review cycles, so they are currently collecting data on student outcomes. During the 2006-7 academic year, the programs will analyze the data and develop recommendations for improved student success.

B. Student Learning Outcomes: Writing Skills

The preceding section focused on student knowledge and skills at the time of matriculation. The following sections address students' skill development and learning outcomes as they progress through their first year and into their upper-level and capstone academic work.

| Assessment Questions | 1. How effectively are first-year offerings contributing to students' foundational skill-building in the area of writing proficiency? |

	2. Do upper-level course and program offerings enable students to build upon these foundational skills?
Data Sources	1. Course evaluations 2. Course-embedded assessments 3. Faculty interviews 4. Transcript data
Proposed Timeline	Annual

Of the goals in Trinity's student learning assessment plan, writing proficiency is one of the most widely embedded in course designs across disciplines. As noted above, ENGL 107 (College Composition) is a required course for both CAS and SPS students. But ENGL 107 is only one of many Trinity courses in which writing skills are stressed, and in which student writing abilities are assessed. In fact, the general education writing requirement should be viewed as one component of a multi-faceted approach to enhancing students' writing proficiency.

1. Student Self-Assessment: Course Evaluation Data

An indication of the wide-ranging emphasis on writing at Trinity is revealed in student course evaluations. On Spring 2005 evaluations, students were asked: *To what extent has **this** course increased your ability to present ideas and information clearly and effectively in writing?* The response scale had five options: "Very much", "Somewhat", "A Little", "Not at All", and "Not Applicable."

Students perceived gains in their writing in courses across the curriculum. Interestingly, CAS students were not more likely to report substantial improvements in writing ability in College Composition than in other 100-level courses.

CHART 2.4: Student Perceptions of Improvements in Writing:
Percentage Responding "Very Much" in 100-Level Courses

	CAS	SPS
College Composition (ENGL 107)	49.1%	75.0%
Other 100-level Courses	51.8%	55.8%

These results indicate that writing is a skill emphasized in all disciplines. The courses in which students reported the greatest gains in writing ability are widely distributed across disciplines. They include courses in Chemistry, English, Environmental Science, History, Mathematics, Sociology, Fine Arts, Philosophy, Psychology, Theology, Women's Studies, and Political Science.

As illustrated in the chart below, students perceived gains in their writing at all course levels. In fact, a greater percentage of students reported significant gains in upper level courses than at the introductory or intermediate levels. This perception reflects students' growing sense of mastery as they progress through the general education curriculum and into major-specific courses, with their more rigorous writing assignments.

**CHART 2.5: Student Perceptions of Improvements in Writing:
Percentage Responding "Very Much" in All Courses**

	CAS	SPS
100-Level courses	49%	58%
200-Level courses	47%	60%
300-Level courses	62%	63%
400-Level courses	62%	67%

2. Faculty Assessment of Student Writing: Interview and Course-Embedded Data

Faculty who taught courses identified by students as strengthening their writing ability were asked to participate in interviews to explain their techniques for teaching writing. The results of those interviews highlight the creativity of individual faculty members and provide further evidence that writing is a skill integral in all programs at Trinity.

Several conclusions emerge from faculty interviews. Faculty find that students make the greatest gains in writing skills when they: (1) receive clear and extensive guidance on structure; (2) internalize the guidance through hands-on, in-class writing exercises; (3) receive directed feedback that clearly indicates how to improve their writing; (4) work on cumulative and connected writing assignments; and (5) can base their writing upon actual experiences rather than just analyses of texts. Linking these conclusions is an overarching theme: Trinity faculty members consciously work to actively engage the students in the material and the writing process. When teachers emphasize students' ownership of their writing, students are more likely to take responsibility for it. Every faculty member interviewed provides students with clear guidelines for structuring their written work (quotations from faculty interviews):

> *"[When teaching writing] I focus specifically on structure – introduction, body, conclusion, the structure of a well-written paragraph with a topic sentence and transition sentence, logical language [and] logical connectives…I am very explicit about structure. I see students improve their ability to write a paper that has the right structure [and] to provide supporting examples… I see the 'click.' I see the student using the structure to make it work." (Liberal Studies)*

In addition, successful faculty members reinforce the structure guidelines by practicing revising with the class. One professor cited in-class revision as one of the most beneficial exercises for improving students' writing; students' comments on the course evaluation sheets support this:

> *"Most helpful are the draft workshops. [Students] bring in a draft [for peer review]. They… put their thesis statement up on the SmartBoard, and we go through and talk about whether or not that is a thesis statement, is it clearly articulated, is it correctly articulated? The classes really get something out of that. Everybody gets a working, feasible thesis by the time they walk out." (English)*

Specific feedback which provides a roadmap for improvement is also crucial. Some faculty members provide this roadmap by giving students rubric-based evaluations, while others provide extensive written notes:

> *"I tell them right off the bat that they will have the opportunity to revise....It's interesting to me to see how many students take the opportunity to revise. I see writing improvement in that class all the time." (Fine Arts)*

Faculty members have found that student writing ability improves most dramatically when writing exercises and class experiences build upon each other, rather than being treated as stand-alone, unconnected assignments:

> *"The conventional approach to undergraduate labs is to give the students pre-lab and post-lab questions and have them hand in calculations... I assigned my students the task of writing real reports of their lab work. I intentionally keep the hands-on work in the lab at a minimum [and] each week we take the data analysis, interpretation and presentation a little farther. In the end, the data, analyses, conclusions etc. must be brought together in a scientific paper." (Chemistry)*

Finally, faculty emphasized the importance of accessibility of academic material, and the subsequent impact on students' feelings of ownership of their own work. Rather than write about or analyze text, students write best when they write about personal experiences; about laboratory or independent research in science and mathematics; or about service within the community.

> *"For some students, reading is a problem. When they read the text they don't get the idea. That is one of the reasons that I use service learning: it makes the reading accessible to students. Students always say [the service learning project] was one of the best parts of the course. It has really helped my classes [as] I have noticed as our student population changing." (Sociology)*

While faculty interviews and student evaluations provide useful evidence that writing skills are emphasized at every level and in every discipline at Trinity, they generate only partial insight into student learning outcomes. Increasingly, these data are being supplemented by course-level assessments of writing abilities. Often as part of the program review process, faculty members are creating rubrics to evaluate writing proficiency, collecting data in their courses, and analyzing the results.

For example, the History program is assessing students' mastery of writing skills (as well as content knowledge) in its lower-level courses. It has designed rubrics to evaluate student learning outcomes. These rubrics are used to assess multiple written assignments throughout the semester, enabling professors to track improvements in writing over time. Assessment results vary across classes. The proportion of students demonstrating improvement in writing skills during the semester ranges from a third to 90%, depending upon the class.

Similarly, the Philosophy program's ongoing review includes assessment of students' capacity to "write argumentative essays of increasing complexity" and "develop skills in critical writing." The

program has developed detailed rubrics for all categories of writing assignments, including critical analyses, summaries, essay exams, and comparison and contrast essays.   Samples of the rubrics are available in the Document Room and on the website. Philosophy has collected data from student assignments in all levels of Philosophy courses. The Philosophy program's rubrics are useful not only for faculty to evaluate student performance, but also for students to improve their own performance. Rubrics are shared with students at the start of the semester; students are encouraged to use them as guides. Some students use the rubrics throughout their academic careers to help them structure and compose their essays.

Meanwhile, the Biology program has collected and analyzed data on student learning outcomes in its General Biology (BIOL 111) course. Its analysis finds that biology students who place into English 107 perform better in biology than those who place in the developmental English courses. This outcome reflects the emphasis which the Biology program puts on writing skills; written assignments are evaluated not only on the basis of content, but also on the basis of organization, coherence, style, and clarity. It also reinforces the conclusion that writing is a skill which is being assessed in many disciplines, including ones not traditionally associated with writing.

Because of their partial and disaggregated nature, program and course-level assessments do not yield conclusive findings about the accomplishment of Trinity's student learning goal for writing proficiency. Therefore, Trinity must focus on implementing an institution-wide plan for collecting and analyzing data on student writing skills.

C. Student Learning Outcomes: Quantitative Skills

Assessment Questions	1. How effectively are first-year offerings contributing to students' foundational skill-building in the area of quantitative reasoning? 2. Do upper-level course and program offerings enable students to build upon these foundational skills?
Data Sources	1. Course evaluations 2. Course-embedded assessments 3. Faculty interviews 4. Transcript data
Proposed Timeline	Annual

Improvements in quantitative analysis skills are central to the objectives of general education courses in Mathematics and the sciences. But like written communication skills, quantitative skills are emphasized across the curriculum. Faculty members incorporate numerical data into a broad range of general education and upper-level courses beyond the areas of math and science. Furthermore, evaluation of quantitative skills plays an important role in program assessment efforts not only in Mathematics and the sciences, but also in several social science disciplines.

1. Student Self-Assessments

Students report gains in their quantitative reasoning and analysis abilities in a wide variety of disciplines. For example, students identify non-math and non-science courses as frequently as math and science courses as sources of improvement in their ability to understand quantitative information as it is presented in textbooks and popular media. The reported improvement is particularly striking in upper-level CAS seminars in non-math, non-science disciplines (All data is from Spring 2005 course evaluations).

CHART 2.6: Improved Understanding Of Quantitative Information From Graphs And Charts In Textbooks, Popular Media: Percentage Responding "Very Much"

	Non-Math, Non-Science	*Natural Sciences*	*Math, Computer Science*
100-Level	38.2%	47.7%	47.1%
200-Level	44.7%	20.3%	37.8%
300-Level	41.7%	40.0%	20.0%
400-Level	47.6%	41.7%	40.0%

Courses in which students reported the greatest gains included not only classes in Environmental Science, Mathematics, Physics, Chemistry, and Biology, but also in Psychology, Fine Arts, Sociology, English, Women's Studies, Political Science, Communication, Spanish, History, Economics, Information Systems, International Affairs, Human Relations, Business Administration, Liberal Studies, and Philosophy. It is not surprising that Social Science courses emphasize the interpretation of graphs and charts. The reported results in the Humanities are a bit more unexpected.

Students were also asked on course evaluations, "*To what extent has **this** course increased your ability to evaluate the credibility and accuracy of numerical or scientific information?*" Again, students were often as likely—if not more likely—to report improved ability in non-math, non-science courses as in math and science courses.

CHART 2.7: Improved ability to evaluate credibility and accuracy of numerical or scientific information: percentage Responding "Very Much" (CAS)

	Non-Math, Non-Science	*Natural Sciences*	*Math, Computer Science*
100-Level	31.7%	61.0%	44.4%
200-Level	33.8%	24.3%	54.4%
300-Level	44.4%	40.0%	0.0%
400-Level	76.7%	45.8%	34.4%

Courses in which students reported the greatest gains included not only classes in Environmental Science, Mathematics, Physics, Chemistry, and Biology, but also in Psychology, Fine Arts, Sociology, English, Women's Studies, Political Science, Spanish, History, Liberal Studies, Business Administration, Psychology, Communication, Women's Studies, and Philosophy.

2. Faculty Assessment of Student Quantitative Skills Development

Interviews with faculty have been particularly important in clarifying the results collected from student course evaluations regarding quantitative skills. In some cases, student perceptions do not match actual course content or pedagogical strategies. Students apparently define "numerical" and "quantitative" more loosely than do faculty, because some of the courses in which students reported great gains did not involve quantitative analysis. This disparity between student perceptions and course content calls into question the validity of self-report data on quantitative skills.

In many cases, interview data illuminated faculty members' creative incorporation of numerical data and graphical techniques into courses whose primary focus was not quantitative:

> *"I purposefully use arguments that use quantitative data as premises or that imply a conclusion that is expressed as a quantitative relation. We also work through Venn Diagrams as a form of identifying the validity of arguments." (Philosophy)*

Further insight into the development of students' quantitative abilities will emerge from ongoing program assessments. For instance, the Biology program has analyzed data on student performance in its introductory course in light of students' concurrent mathematics coursework. It found that students who took a developmental math course while enrolled in biology performed less well in biology than students who took a general education-level math course alongside biology. Only 22% of students who took developmental math earned above a "D" in biology, while 72% of students who took the general education math course earned a "C" or better in the biology course. This result highlights the importance of students mastering foundational quantitative skills before enrolling in science courses which utilize those skills.

D. Student Learning Outcomes: Information Literacy Skills

Assessment Questions	1. How effectively are first-year offerings contributing to students' foundational skill-building in the area of information literacy? 2. Do upper-level course and program offerings enable students to build upon these foundational skills?
Data Sources	Course evaluations Course-embedded assessments
Proposed Timeline	Annual

The assessment of information literacy presents a unique set of challenges. Student ability is not currently assessed at entry. Furthermore, compared to writing and quantitative literacy, there is greater variation in how information literacy is defined in programs and courses throughout the undergraduate curriculum. Therefore, it is difficult to extrapolate robust institution-wide conclusions from course-embedded and program-level assessments of information literacy. Finally, while Trinity offers courses focusing exclusively on the development of writing and quantitative

skills, there are no stand-alone courses in information literacy. Therefore, course grades cannot be used as a measure of proficiency in this area.

In 2004, Trinity launched an initiative to teach and assess information literacy skills across the curriculum. Trinity's initiative was consistent with the requirements of Middle States Standard 11, which calls for collaboration between professional library staff and faculty in teaching information literacy skills. In keeping with this standard, Trinity's Library staff, working with faculty members, developed an Information Literacy Pilot Program (ILPP) designed to provide incoming students with foundational skills instruction at the beginning of their academic careers. More specifically, the ILPP aimed to build student competencies in: 1) defining information needs; 2) accessing information efficiently; 3) critically evaluating information; 4) using information effectively; 5) understanding the legal and ethical issues surrounding the use of information; and 6) observing institutional policies related to information use.

In Fall 2004, the ILPP was introduced into the curriculum via INT 115, the first year seminar required of all CAS entering students. INT 115 instructors administered a Pre-Test of Information Literacy Skills to their students at the start of the semester. Subsequently, Library staff provided two information literacy instructional sessions for INT 115 students, which included hands-on experience in using research databases and Internet sites; a homework assignment to reinforce classroom activities; and discussion of search techniques and academic honesty issues. A Post-Test was administered toward the end of the semester. In Spring 2005, the process was repeated, with INT 115 sections participating in the ILPP assessments and instruction.

The results of the pre- and post-tests of information literacy skills were mixed, with improvements in student confidence outstripping improvements in demonstrated knowledge. Students expressed low confidence in their information literacy on the pre-test; on the post-test, they were much more confident. Meanwhile, students' test scores improved somewhat: on average, students scored 2 points (7 percentage points) higher on the post-test than on the pre-test. Higher self-confidence was positively correlated with higher scores. However, results of pre- and post-tests also indicate a gap between students' self-confidence and their ability to answer information literacy questions correctly. While students reported dramatic gains in their research abilities, their post-tests revealed continued weaknesses in their understanding of the varied electronic information resources available to them, and the skills to use these resources to their advantage.

Assessment of the ILPP's effectiveness have led to rethinking of how information literacy should be taught at Trinity. Library staff and faculty have concluded that INT 115 is not the best venue for conducting information literacy instruction. Although it has the advantage of being a required course for all first year CAS students, the course does not typically involve significant research assignments. As a result, students are not always able to apply their newly-acquired information literacy skills to a research-intensive project. Furthermore, INT 115 is an inadequately inclusive forum for information literacy instruction, since no SPS students take the course.

In September 2005, Trinity's academic leadership asked the Education and Technology Committee to develop a proposal for a new approach to information literacy across the curriculum. The proposal is due for completion in Spring 2006, and faculty will have the opportunity to review it in the summer and fall of 2006. The new approach to information literacy will build upon lessons

learned from prior efforts. For example, the focus of information literacy will broaden, going beyond basic skills in an introductory course to encompass upper-level, discipline-specific competencies. Additionally, the locus of information literacy skill development will expand with the increasing use of online delivery formats. Library staff members will redesign information literacy approaches to take advantage of technology-based delivery and thus encourage self-directed student information literacy learning.

Meanwhile, almost three quarters of Trinity's undergraduate programs have specified one or more aspects of information literacy as student learning goals, and are assessing learning outcomes through their program review processes. For example, the History program identifies the ability to evaluate and use sources effectively in developing an argument as one of its student learning expectations. History faculty members have developed and implemented rubrics to analyze how effectively students use evidence to support their theses in research papers for courses fulfilling the general education requirement. As noted above, programs have tended to define information literacy in distinctive ways. In the future, an institution-wide embrace of a single set of information literacy learning goals would facilitate assessment efforts.

E. Writing, Quantitative and Information Literacy Skills: the Need for Summative Assessment

Assessment Question	Upon graduation from Trinity are students proficient in the areas of writing and quantitative and information literacy?
Data Sources	1. Graduating student surveys 2. Transcript analysis: capstone and senior seminar courses 3. Course embedded assessment: capstone and senior seminar courses 4. Student performance on standardized national exams
Proposed Timeline	Annual

Many students come to Trinity, as this self-study documents, with gaps in academic preparation and limited confidence in their ability to excel in college. Trinity's mission is to prepare these students for life-long accomplishment in their work, civic, and personal lives. Therefore, it is crucial for Trinity to demonstrate that its students graduate with the confidence and skills to succeed. Student surveys provide extensive data about graduates' perceptions of their skills. Furthermore, individual programs evaluate their majors' cumulative knowledge and abilities through a variety of summative assessments. Meanwhile, some students take graduate and professional entrance exams that assess writing, quantitative, and critical reasoning skills. These data sources are all important. But their findings have not been aggregated at the institutional level. To demonstrate success at more than the individual student level, Trinity needs to integrate and analyze existing data more effectively.

1. Graduates' Perceptions of Proficiency

Results from the College Student Survey (CSS) of graduating seniors administered in May 2004 suggest that upon graduation Trinity students are very confident in their writing ability: over 80% rate themselves as being above average writers relative to their peers. Meanwhile, the great

majority of Trinity graduates sense they are at least on par with their peers in mathematical ability; and 44% rate themselves as having above average math skills.

CHART 2.8: Graduating Students' Self-Rating of Skill Levels[4]

	Mathematical Ability	*Writing Ability*
Lowest 10%	5%	2%
Below average	11%	2%
Average	40%	16%
Above average	33%	49%
Top 10%	11%	32%
Total	132	130
	100%	100%

Most students leave Trinity with the conviction that they have become stronger writers with greater ability to think critically. The majority of graduates also perceive gains in their mathematical skills.

CHART 2.9: Graduating Students' (Enrolled Since First Year) Rating of Current Skill Level as Compared to Entering Ability

	Critical Thinking Ability	*Mathematical Skills*	*Writing Skills*
Much weaker	0%	0%	0%
No change	6%	48%	12%
Stronger	44%	32%	43%
Much stronger	50%	21%	45%
Total	109	107	107
	100%	100%	100%

These self-report data reflect positively on Trinity's impact on students' confidence in their writing, quantitative, and critical thinking abilities. But they are indirect rather than direct measures of student learning, and they leave open the question of whether students' confidence levels are commensurate with their abilities.

2. Senior Assessment Data

Each undergraduate program at Trinity designs and implements a senior assessment as a summative learning evaluation for its majors. The assessment is a requirement for graduation, and students must pass the Senior Assessment to be eligible for the B.A. or B.S. Programs use a variety of means to measure student learning outcomes through the senior assessment. Comprehensive exams (both oral and written), senior capstone seminars, comprehensive portfolios, and research projects are the most common methods of assessment; several programs use more than one of these methods. A detailed account of each program's senior assessment process can be found in the Document Room.

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[4] On the CSS students are asked to rate themselves relative to their peers on a 5-point scale in response to the prompt "Rate yourself on each of the following traits as compared with the average person your age. We want the most accurate estimate of how you see yourself." The original response scale assigns values 1-5 as follows: *1=Lowest 10%; 2=Below Average*; *3=Average*; *4=Above Average; 5=Top 10%.*

A primary goal of any senior assessment is to measure students' mastery of discipline-specific knowledge and skills. Yet most programs also use the senior assessment to evaluate their majors' proficiencies in areas that transcend disciplinary boundaries, such as writing, research, and critical analysis. Therefore, analysis of student performance in senior assessments can provide valuable insights into the development of students' writing, information literacy, and quantitative skills during their college careers.

For example, the Biology program found that between 2000 and 2005, 40% of its majors did not pass their comprehensive exams on their first effort. Through careful analysis of students' exams, the program determined that writing skills and capacity for in-depth analysis were key areas for improvement in student outcomes. Accordingly, the program adjusted its pedagogy to better prepare students for the comprehensive exam. It increased the number of writing requirements in all Biology courses and placed more emphasis on synthesizing course material on final exams. The program also worked intensively with students who did not initially pass the comprehensive exam, strengthening their skills so that they could successfully re-take it later in their senior year. This intensive, one-on-one work is typical for programs that assess senior outcomes through comprehensive exams.

Programs' dedication to the success of individual students must be matched by institution-level efforts to analyze data on seniors' student learning outcomes. In the past, Trinity has not collected much information on its graduates' summative learning. Grade distribution analysis from senior assessments can provide a general sense of whether students are mastering the skills and knowledge programs consider essential. But more detailed, rubric-based data is needed to pinpoint student learning outcomes in the critical areas of writing and information and quantitative literacy.

The majority of programs at Trinity require a senior seminar or capstone course. Typically, these courses involve research projects that require majors to synthesize and reflect upon what they have learned in past years. Most also involve presentations, testing students' ability to convey their knowledge and ideas orally. The data on student performance below indicate that most Trinity seniors have gained the knowledge, as well as the analytical and communication skills, to be considered proficient in their fields of study.

CHART 2.10: Senior Seminars and Capstones: Student Performance 2000-2005						
Program	Final grade: % A's	Final grade: % B's	Final grade: % C's	Final grade: % D's	Final grade: % F's	Total # of students receiving grades
Business Administration & Business Economics	29%	56%	14%	0%	0%	176
Communication	23%	42%	25%	2%	10%	102
Economics	56%	31%	6%	0%	6%	16
English	53%	28%	15%	2%	2%	53
Human Relations	49%	40%	10%	0%	1%	217
International Affairs	53%	41%	0%	6%	0%	17
Information Systems	29%	29%	43%	0%	0%	7
Liberal Studies	71%	14%	0%	0%	14%	7
Mathematics	23%	38%	15%	15%	8%	13
Natural Sciences	26%	58%	0%	16%	0%	19
Psychology	47%	36%	14%	3%	0%	72
Sociology	37%	43%	20%	0%	0%	30
Spanish	100%	0%	0%	0%	0%	1
Women's Studies	67%	27%	7%	0%	0%	15

CONCLUSION AND RECOMMENDATIONS

As Middle States points out in Standard 14, a commitment to assessment of student learning must be accompanied by a commitment to using assessment information to improve teaching and learning. This commitment is honored every day in Trinity's classrooms, where faculty members use assessment to make their teaching more relevant, more targeted to student learning needs, and more effective. In individual courses and within programs, continuous and vibrant processes of student learning evaluation, curricular redesign, and follow-up reassessment are underway. Trinity faculty members have worked progressively to adapt individual course content and program design to address the changing needs of their students, and to facilitate students' achievement of expected learning outcomes.

To supplement the work that is taking place within courses and programs, Trinity needs a broader, more integrated effort to assess what students are learning through their cumulative college experiences; what gaps remain in their proficiencies; and what methods appear most effective in reducing those gaps. For example, more work is needed to determine the pedagogies and curricular designs that are most appropriate to and supportive of adult learners. Most of Trinity's current assessment and instructional practice is based on models developed in the College of Arts and Sciences rather than the School of Professional Studies. Trinity is working toward greater balance and inclusiveness—witness its expansion of writing and quantitative entrance assessment to SPS and its plans to expand on-line delivery of information literacy training. But meaningful response to diverse student needs will require more rigorous analysis of what all student populations are learning and how they will become most successful through the Trinity experience.

Another strength of student learning assessment at Trinity is faculty involvement. Trinity's governance structures are consistent with Middle States Standard 7, which stipulates that institutional assessment plans and processes must involve the support and collaboration of faculty. This faculty involvement will be crucial as Trinity moves to re-examine its approach to building competency in writing, quantitative analysis, and information literacy. The rich insights faculty members have gained through years—and in many cases decades—of work with students, along with the findings of ongoing and planned institution-level analysis, should help Trinity develop innovations informed by a strategic vision of student needs.

The key recommendations that follow from this chapter include:

- Given the importance of baseline assessment for students, Trinity will review and evaluate the current student placement program to determine its effectiveness in properly assessing and placing CAS and SPS undergraduates. For example, CAS placement needs to address the language and cultural diversity of students to assure that the instruments are effective diagnostics. The same astuteness in review should address the adult learners in SPS. Serious consideration should be given to utilizing the personal statements in the student's application for the writing assessment.

- A faculty development program in the new Center for Teaching Excellence will be created to address the ongoing needs of the faculty as they extend the applications of student learning

outcomes assessment. Such a program will address the following points but not be limited to them:

- o Faculty findings regarding what helps students make the greatest gains in writing skills should be reviewed for possible guidance in general education and overall curricular revision. The faculty found that students made the greatest gains when they: (1) received clear and extensive guidance on structure; (2) internalized the guidance through hands-on, in-class [writing] exercises; (3) received directed feedback that clearly indicated how to improve [their writing]; (4) worked on cumulative and connected [writing] assignments; and (5) based their [writing] on actual experiences and exercises.

- o The classroom challenges of balancing efforts to reach out to students who need to improve their writing with attention to course content and disciplinary knowledge should be addressed in a faculty development program.

- Trinity will develop a writing-across-the-curriculum program and implement an institution-wide plan for collecting and analyzing data on student writing skills.

- Trinity will develop an approach to information literacy across the curriculum. Many aspects of information literary are learned over time and over a variety of applications and assignments.

- Trinity will develop a more systematic and institutionally integrated student learning outcomes data collection and analysis approach that will address the following points:

  - o Institution-level analysis of data on senior student learning outcomes needs to be enhanced, including the development of rubric-based data on senior student learning outcomes in the critical areas of writing, quantitative and information literacy.

  - o Additional direct measures of student learning need to be developed and utilized to complement student self-reported measures.

  - o An aspect of quantitative literacy for student education should be the definition and understanding of quantitative literary as well as the "operational" aspects of it. Self reported information indicates that students hold a loose definition.

  - o Trinity needs to integrate and analyze summative data on writing, quantitative and information literacy more effectively.

- In concert with the completion of this self-study, Trinity will commence a major revision of its first year program of study and general education programs in both CAS and SPS based upon the building block skills discussed in this chapter. The revisions will be different for each collegiate unit given the significant differences in their student populations. Both revisions will take into account course design, course sequences and course scheduling, all of which should be designed to maximize student learning and success.