



# Report

of the Working Group to Review the Results of the
**Standardized Assessment of Information Literacy Skills (SAILS)**
for Grand Valley State University in
2006-07 and 2009-10

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## EXECUTIVE SUMMARY

In the current higher educational climate, particular emphasis is placed on assessing student learning outcomes. To demonstrate value and to encourage a culture of continuous improvement, the University Libraries at Grand Valley State University are called upon to define our programs, to ask ourselves questions about whether our students are successful in achieving learning objectives we set for them, and to use the results of our inquiries and observations to inspire changes for improved delivery of instruction and services.

At present our most substantive assessment effort has been to administer a standardized test, SAILS: Standardized Assessment of Information Literacy Skills, in 2006-07 (for a baseline and benchmark assessment) and 2009-10 (as a comparison). In 2006-07 GVSU's eight skill area and combined scores fell between approximately 550 and 650 (on a scale from 1-1000), and were not appreciably different from those of other participating Master's institutions. Seniors did measurably better than Freshmen by a small though significant margin. As a first benchmarking administration, to the extent that SAILS is a valid and reliable standardized instrument for measuring information literacy skills, it was possible to say that GVSU students were performing roughly similarly to students at other Master's-type institutions participating in SAILS that year. No "red flags" were raised, nor could we claim significant superiority.

Participant samples were very differently drawn in the first and second iterations of SAILS, making it inappropriate to assume that results from 2006-07 and 2009-10 could be considered comparable. With the assistance of the GVSU Statistical Consulting Center the results for 2009-10 were recalculated from the data delivered by the SAILS Project, to produce scores that can be considered comparable to the those from 2006-07.

The design of the SAILS instrument is based on evaluating proficiency in each of eight skill areas, and calculating scores for the eight areas and a single overall score, each based on a scale from 1-1000. Key observations we have drawn from our review of the two reports include the following:

- In the first test iteration, in 2006-07, GVSU students performed as well as, or slightly better than, students at other participating Master's institutions.

- Comparing the GVSU 2006-07 and recalculated 2009-10 scores, according to the data GVSU students have become measurably weaker in one skill set, "Using Finding Tool Features"; but differences in scores for the other seven skill sets are not significant.
- The groups of 2006-07 GVSU Freshmen (data collected in January/February 2007) and 2009-10 GVSU Seniors (data collected in November/December 2009) roughly represent a cohort passing through GVSU, the Class of 2010. Comparing the scores for these groups, only one skill set shows statistically significant change: over the course of three years, Seniors of 2009-10 scored higher in "Documenting Sources" than Freshmen of 2006-07.
- Freshmen and Seniors (combined) at Grand Valley scored higher than Freshmen and Seniors (combined) at other Master's Institutions in the year 2006-07 by at least 7, and possibly as much as 31, points in the "Searching" skill set; for the other seven skill sets, Grand Valley performed equally as well as (or no worse than) other Master's Institutions in 2006-07.
- Based on the data, GVSU Freshman and Senior students (combined) scored statistically significantly higher than students at all participating Master's Institutions in 2009-10 in every skill set; in fact, over the course of three years, Grand Valley has maintained very similar scores in all the skill sets, while at the same time Master's Institutions in the aggregate have declined in all eight skill sets over the same period. We have queried the SAILS Project concerning this apparent anomaly in the test results; we have yet to learn whether they have drawn any conclusions about the current reliability and validity of the test.

We elected to gather information providing some context for understanding information literacy instruction at Grand Valley spanning the period from 2006-07 to 2009-10. Our study is not exhaustive, but rather indicative of the complexity of attempting to measure our impact on students in the area of information literacy. The last decade at Grand Valley has been one of tremendous growth and change in the Libraries, in the university, and in the wider world of finding and using information. Enrollment has been trending steadily upward, at a rate of several percentage points each year; at the same time the university has become more selective, and average ACT scores and high school GPAs of incoming students have increased incrementally. But given that during the period bracketed by the two SAILS iterations ACTs and GPAs have been relatively stable, we can assume similar preparedness of incoming students across that period.

Over the last ten years the university's administrative leadership and academic organization have changed, bringing new vision and emphasis to the shape and focus of the institution. In parallel, the University Libraries' admistrative leadership and organizational structure have changed as well, bringing revisions to the Libraries' mission and vision, and to the roles of the Library Faculty. GVSU's librarians have served for at least twenty years as liaisons

to the academic departments, and have worked to deliver appropriate and effective library skills instruction whenever invited into a classroom; but in the current environment, liaison assignments and strategically targeted information literacy instruction have been made more central to positions now explicitly defined as "Liaison Librarians." During the SAILS period, a certain emphasis existed on entering as many classrooms as possible to provide some kind of library instruction. Over the same period the numbers of Liaison Librarians increased by 5, from 16 to 21, and the numbers of students contacted in information literacy teaching sessions increased dramatically, possibly doubling from contact with approximately 40% to as much as 80% of all students[1]; and yet SAILS scores stayed stable.

Beyond the walls of the Libraries and of GVSU, the digital environment continues to evolve at a breathtaking pace. Grand Valley undergraduate students coming to college at the traditional age, approaching twenty years old, have grown up in a climate of quickly developing digital technologies and information of all kinds in digital form. We do not know with confidence whether SAILS is evolving to ask the right questions and accurately measure the right skills compared to when it was developed and piloted earlier in the recent decade.

We conclude that, pending word from the SAILS Project confirming reliability and validity of the test, there would be value in repeating SAILS among Freshmen and Seniors a third time, ideally in 2012-13. The interval between 2009-10 and 2012-13 would encompass the intentional introduction of the Libraries' "Information Literacy Core Competencies" into information literacy skills instruction and the initiation of strategically placed IL skills instruction within curricula. Having identified some of the factors in a changing, maturing, growing institution that may have additional impacts on measuring student learning outcomes in the area of information literacy skills, we can monitor those along the way. Additionally, we recommend that repeating SAILS in 2-4 years should be only one facet of a wider assessment net. We suggest that information culled from the Collegiate Learning Assessment (CLA) administered periodically by Grand Valley's Acadedmic Affairs office would be another logical facet; and that developing local measures of impact on learning outcomes should be a third facet of an overall program to enhance and guide our understanding of how effectively we are assisting Grand Valley students in learning information literacy skills.

[1] We equivocate as to the numbers of classrooms entered and students encountered by Liaison Librarians due to changing record-keeping systems and uncertain compliance in posting statistics. But we can assert that more students have been in contact with librarians coming into their classrooms in recent years, at a rate greater than increase in annual enrollment.

# Working Group Report

## INTRODUCTION

In the current higher educational climate, particular emphasis is placed on assessing student learning outcomes. To demonstrate value and to encourage a culture of continuous improvement, the University Libraries at Grand Valley State University are called upon to define our programs, to ask ourselves questions about whether our students are successful in achieving learning objectives we set for them, and to use the results of our inquiries and observations to inspire changes for improved delivery of instruction and services. In the area of student learning outcomes, the primary focus of the University Libraries ('Libraries' or 'GVSU Libraries') is on teaching information literacy skills. Defining a program with clear goals, objectives, and targets for student learning outcomes in relation to information literacy skills is a great challenge and a work in progress.

At present our most substantive assessment effort has been to administer a standardized test, SAILS: Standardized Assessment of Information Literacy Skills, in 2006-07 for a baseline and benchmark assessment, and again in 2009-10 as a comparison. In 2006-07 GVSU's eight skill area and combined scores all fell between approximately 550 and 650 (on a scale of 1-1000), and were not appreciably different from those of other participating Master's institutions. Seniors did measurably better than Freshmen by a small, though significant, margin. As a first benchmarking administration it was possible to say that GVSU students were performing roughly similarly to students at other Master's-type institutions participating in SAILS that year. No "red flags" were raised, nor could we claim significant superiority.

In this report we compare the 2009-10 SAILS results with the previous 2006-07 results; make some observations about how GVSU and the Libraries have changed between the first and second SAILS administrations; and offer some conclusions and recommendations.

## METHODOLOGY

The design of the SAILS instrument is based on evaluating proficiency in each of eight skill areas, and calculating scores for the eight areas along with a single overall score, each based on a scale from 1-1000. As reported in two summary documents prepared in 2007 by the Curricular Support Committee of the University Libraries Faculty Assembly to accompany the 2006-07 results report delivered by the SAILS Project, in that first test iteration GVSU students tested performed as well as, or slightly better than, students at other participating Master's institutions (Kohrman, et al., 2007a; Kohrman, et al., 2007b).

### GVSU SAILS Data: A Note

Participant samples for the 2006-07 and 2009-10 iterations of SAILS at GVSU were very differently selected, and the test-taking conditions were very different each time (see Table 1). In analysing the data and making some kind of comparison between the first and second iterations,

Table 1. Summary of 2006-07 and 2009-10 samples and sampling methods

| | **2006-07** | | **2009-10** | |
|---|---|---|---|---|
| | **Target population and (n)** | **Sample selection method & test conditions** | **Target population and (n)** | **Sample selection method & test conditions** |
| | Freshmen, Seniors | Convenience sample (Freshmen); Random sample (Seniors) | All Undergraduate Students | Random sample |
| **Freshmen**<br>**Sophomores**<br>**Juniors**<br>**Other** | 304<br>24<br>6<br>4 | Students in several LIB 100 sections, Winter'07 -- heavily but not exclusively Freshmen, in a course that is recommended but not required<br><br>Test proctored at specified times in Library instruction room | 204<br>153<br>168<br>113 | Broadcast e-mail with participation incentive<br><br>Test taken by students at time and place of their own choosing, unproctored |
| **Seniors** | 102 | Broadcast e-mail with participation incentive<br><br>Test proctored at specified times in Library instruction room | 283 | |
| **Total** | 440 | | 921 | |

*Source: SAILS report (2009); SAILS report (2007); GVSU Libraries Administrative Services*

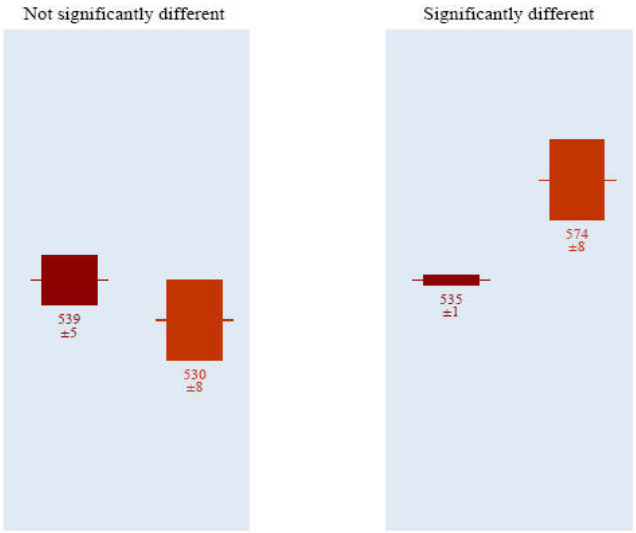
it is not possible to account for the varying effects of different test-taking conditions: participants in 2006-07 were gathered in classrooms and proctored, while in 2009-10 participants voluntarily responded to an e-mail broadcast to all students and completed the test on their own. But we hoped that it might be possible to better understand in what ways valid comparisons could be made between a 2006-07 sample comprising a convenience sample of 304 Freshmen (plus 34 Sophomore, Junior, or Other) in several sections of LIB 100 and 102 Seniors invited by e-mail, and a 2009-10 random sample generated by means of an invitation to all GVSU students and eliciting responses from 921 self-selected participants.

The difference in sampling method and composition makes comparisons between iterations of SAILS at Grand Valley less reliable than would be ideal; but statistical tools and analysis can at least help to make some conceptual-level interpretations possible. Toward this end we employed the services of GVSU's Statistical Consulting Center (SCC) to determine what could be done to extract the most valid comparisons between the earlier and later results.

The SCC staff were able to use elements of the data delivered to us by the SAILS Project to select only the Freshmen and Senior responses from both the 2006-07 and 2009-10 results, and re-calculate results for the new GVSU aggregates for each iteration. Similar recalculations were done on the totals for all participating Masters institutions for the two report years. Thus we are able to report on comparisons between 2006-07 and 2009-10 results at GVSU, and between Freshmen and Seniors at GVSU and at other participating Masters institutions in 2006-07 and 2009-10, with an acceptable degree of confidence. The tables and much of the text that follows in the Findings section are incorporated from the SCC's report to us with some editing, with their permission.

Data extrapolated from the SAILS report are presented in this report in the form of tables, where raw score averages (means) for our samples are presented as integers between 1-1000. The scores are each accompanied by a standard error, an amount plus or minus (±) the raw score, defining a score range into which each actual population score would likely fall. A visual example in the form of a "box plot chart" is included (see Figure 1). To determine whether two groups are significantly different from each other, observe whether the ranges of scores, represented by the boxes, overlap. Ranges of scores (boxes) that do overlap are not significantly different from each other; those that do *not*

Figure 1. Example of a Box Plot Chart




*Source: SAILS report (2009)*

overlap are significantly different. Due to limited proficiency with the chart generating function in Microsoft Excel, we have not provided similar graphic representations for the actual scores reported as part of this report. We hope that readers will find the visual example provided in Figure 1 to be of help in interpreting the tabular date presented in the Findings that follow.

## FINDINGS

### Comparison: GVSU SAILS Results – 2006-07 and 2009-10

When comparing the mean scores between Grand Valley State University's aggregated Freshmen and Seniors for the reports of 2006-07 and 2009-10, the only significant difference is for the skill set "Using Finding Tool Features." The mean score reported for 2006-07 is higher than the mean for 2009-10, and is separated by a margin that exceeds standard error (see Table 2). According to the data GVSU students have become measurably weaker in that skill set.

Table 2. GVSU 2006-07 and GVSU 2009-10 Scores for All Skill Sets*

| SAILS Skill Sets | GVSU 2006-07 Score (n = 406) | GVSU 2009-10 Score (n = 487) |
|---|---|---|
| Developing a Research Strategy | 595 ±8 | 574 ±9 |
| Selecting Finding Tools | 570 ±11 | 574 ±12 |
| Searching | 566 ±9 | 562 ±11 |
| **Using Finding Tool Features** | **644 ±17** | **585 ±15** |
| Retrieving Sources | 599 ±17 | 594 ±15 |
| Evaluating Sources | 611 ±9 | 590 ±10 |
| Documenting Sources | 605 ±14 | 606 ±12 |
| Understanding Economic, Legal, and Social Issues | 565 ±8 | 562 ±11 |

* The difference between the mean scores for GVSU in 2007 and 2010 is significant at the .05 significance level

*Source: SAILS report (2009); SAILS report (2007); GVSU Statistical Consulting Center*

Differences in scores for the other seven skill sets are not significant because the intervals overlap, and there is a statistical possibility that the mean scores for each year could be equal to each other. Over the course of the last three years we infer that GVSU students have neither improved nor gotten weaker in seven of the eight skill sets.

Data collection for the two administrations of SAILS at GVSU took place in Winter semester 2007 and Fall semester 2009. Given the two-and-a-half year interval between iterations, we asked the SCC to calculate and compare the scores for Freshmen in the earlier sample and Seniors in the later sample. This comparison could provide some insight into progress among a

cohort of students who were actually at GVSU for both the first and second administrations of the test, though there is no way to know if any individuals actually took it both times.

After comparing the groups of GVSU Freshmen in 2007 and GVSU Seniors in 2009, only one skill set shows statistically significant change. Over the course of three years, the Seniors of 2009-10 scored higher in "Documenting Sources" than Freshmen of 2006-07 on average (see Table 3). The other seven skill sets show no improvement nor decline over the period between test administrations.

Table 3. GVSU 2006-07 Freshmen and GVSU 2009-10 Seniors Scores for All Skill Sets*

| SAILS Skill Sets | GVSU 2006-07 Freshmen Scores (n = 304) | GVSU 2009-10 Senior Scores (n = 283) |
|---|---|---|
| Developing a Research Strategy | 584<br>±9 | 588<br>±13 |
| Selecting Finding Tools | 556<br>±13 | 593<br>±16 |
| Searching | 553<br>±10 | 583<br>±14 |
| Using Finding Tool Features | 639<br>±19 | 606<br>±20 |
| Retrieving Sources | 580<br>±18 | 619<br>±20 |
| Evaluating Sources | 600<br>±11 | 605<br>±13 |
| **Documenting Sources** | **579<br>±15** | **632<br>±16** |
| Understanding Economic, Legal, and Social Issues | 555<br>±9 | 581<br>±14 |

* The difference between the mean scores for GVSU Freshmen in 2006-07 and GVSU Seniors in 200-910 is significant at the .05 significance level

*Source: SAILS report (2009); SAILS report (2007); GVSU Statistical Consulting Center*

Comparison: GVSU and Other Masters Institutions – 2006-07 and 2009-10

Comparisons and benchmarking against other similar institutions are facilitated by making use of brief profile data provided as part of the report delivered after each administration of the test. Grand Valley's SAILS profile identifies GVSU as a Masters Institution; other institution type categories include Associates, Baccalaureate-General, Baccalaureate-Liberal Arts, and Doctorate. We asked the SCC staff to use the profile data provided in the reports for all participating institutions to recalculate an aggregate score for the participating Masters institutions overall in each test period, including only the Freshmen and Seniors from each

institution. With the recalculated Master's Institution score, we can make a reasonably valid comparison between the GVSU scores in 2006-07 and in 2009-10 and participating Masters institutions for those years generally.

Comparing the 2006-07 scores for GVSU and for all participating Master's Institutions, only one skill set shows a significant difference, the "Searching" skill set (see Table 4). On

Table 4. GVSU 2006-07 and Master's Institution 2006-07 Scores for All Skill Sets*

| SAILS Skill Sets | GVSU 2006-07 Score (n = 406) | Master's Institutions 2006-07 Score (n = 3038) |
|---|---|---|
| Developing a Research Strategy | 595 ±8 | 593 ±3 |
| Selecting Finding Tools | 570 ±11 | 560 ±4 |
| **Searching** | **566 ±9** | **547 ±3** |
| Using Finding Tool Features | 644 ±17 | 644 ±6 |
| Retrieving Sources | 599 ±17 | 578 ±7 |
| Evaluating Sources | 611 ±9 | 606 ±3 |
| Documenting Sources | 605 ±14 | 589 ±5 |
| Understanding Economic, Legal, and Social Issues | 565 ±8 | 552 ±3 |

* The difference between the mean scores for GVSU in 2007 and all other Master's Level Institutions in 2007 is significant at the .05 significance level

*Source: SAILS report (2009); SAILS report (2007); GVSU Statistical Consulting Center*

average, Freshmen and Seniors (combined) at Grand Valley scored higher than Freshmen and Seniors (combined) at other Master's Institutions in the year 2006-07 by between 7 and 31 points in the "Searching" skill set. For the other seven skill sets, Grand Valley performed equally as well as (or no worse than) other Master's Institutions in 2006-07. It will be noted that the standard errors are smaller for the Master's Institution scores; this is due to the larger sample size compared to the GVSU sample for 2006-07.

The story appears to change after three years. As seen with the comparison made between 2006-07 Grand Valley and Master's Institutions scores, there was only one skill set where Grand Valley performed at a higher level than Master's Institutions on average. Remarkably, based on the data, GVSU Freshman and Senior students scored statistically significantly higher than students at all participating Master's Institutions in 2009-10 in every skill set (see Table 5).

Table 5. GVSU 2009-10 and Master's Institution 2009-10 Scores for All Skill Sets*

| SAILS Skill Sets | GVSU 2009-10 Score (n = 487) | Master's Institutions 2009-10 Score (n = 9284) |
|---|---|---|
| **Developing a Research Strategy** | **574 ±9** | **552 ±2** |
| **Selecting Finding Tools** | **574 ±12** | **542 ±3** |
| **Searching** | **562 ±11** | **532 ±2** |
| **Using Finding Tool Features** | **585 ±15** | **554 ±3** |
| **Retrieving Sources** | **594 ±15** | **554 ±4** |
| **Evaluating Sources** | **590 ±10** | **567 ±2** |
| **Documenting Sources** | **606 ±12** | **557 ±3** |
| **Understanding Economic, Legal, and Social Issues** | **562 ±11** | **530 ±2** |

* The difference between the mean scores for GVSU in 2010 and all other Master's Level Institutions in 2010 is significant at the .05 significance level

*Source: SAILS report (2009); SAILS report (2007); GVSU Statistical Consulting Center*

Finally, it is interesting to note the comparisons between the aggregated Master's Institutions scores for the years 2006-07 and 2009-10. Score changes across all eight skill sets appear to be statistically significant, and the data suggest that on average, students generally at participating Master's Institutions have been performing more poorly over the three year span. The mean scores for Master's Institutions in 2006-07 were all higher than the mean scores in 2009-10 (see Table 6, following page). Over the course of three years, Grand Valley has maintained very similar scores in all the skill sets. At the same time Master's Institutions in the aggregate have declined in all eight skill sets over the same period.

Table 6. Master's Institution 2006-07 and Master's Institution 2009-10 Scores for All Skill Sets*

| SAILS Skill Sets | Master's Institutions 2006-07 Score (n = 3038) | Master's Institutions 2009-10 Score (n = 9284) |
|---|---|---|
| **Developing a Research Strategy** | **593 ±3** | **552 ±2** |
| **Selecting Finding Tools** | **560 ±4** | **542 ±3** |
| **Searching** | **547 ±3** | **532 ±2** |
| **Using Finding Tool Features** | **644 ±6** | **554 ±3** |
| **Retrieving Sources** | **578 ±7** | **554 ±4** |
| **Evaluating Sources** | **605 ±3** | **567 ±2** |
| **Documenting Sources** | **589 ±5** | **557 ±3** |
| **Understanding Economic, Legal, and Social Issues** | **552 ±3** | **530 ±2** |

* The difference between the mean scores for Master's Level Institutions in 2007 and 2010 is significant at the .05 significance level

*Source: SAILS report (2009); SAILS report (2007); GVSU Statistical Consulting Center*

## DISCUSSION

### SAILS Results at GVSU, 2006-07 and 2009-10

Results from a second administration of SAILS at Grand Valley in 2009-10 yield little more information or insight than did the first set of results in 2006-07. The data indicate that Grand Valley students are performing at essentially the same levels they were three years previously; the score decrease in "Using Finding Tool Features" is the only area where significant difference appears.

Compared with all Master's institutions, GVSU students appear in 2009-10 to be significantly outperforming the aggregate; but there is an unexplained anomaly: the aggregated Master's Institution scores in all skill areas have dropped compared to 2006-07, a curious characteristic under investigation by the SAILS Project Team. We queried SAILS regarding our observation about the downward trend of the aggregated scores overall; in their reply they said, "we have noticed a difference and are examining the scores in light of changes to the benchmark and [test question] item bank over this time span" (J. Gedeon, personal communication, 6/18/2010).

The outstanding question for us becomes, have students in Master's Institutions across the country become generally less proficient, leading to lower scores in all skill areas, while GVSU students as a sub-set have simply held steady? Or has some characteristic of the instrument and/or its administration caused scores to decrease, which could mean that the relatively higher scores of GVSU students in comparison to the aggregated Master's Institutions show that our students have improved even though our raw scores are about the same as in 2006-07? More broadly, does this anomaly or discrepancy bring into question SAILS as a useful assessment tool? In short, the appearance of improved performance at Grand Valley with respect to other participating Master's Institutions as a benchmark may only be due to an unexplained decline of aggregated Master's Institutions scores.

Considering SAILS results in isolation, outside of the context of any other assessment data, only these limited observations and interpretations can be made.

### Changes in the GVSU Environment, 2006-07 to 2009-10

To round out a picture of students' information literacy skills proficiency at Grand Valley over the period 2006 to 2010, we offer some additional observations about the broader context. We looked for areas in which there might have been change that could have positively or negatively impacted on students and/or on information literacy instruction offered by the Libraries.

*Students – enrollments, GPAs and ACTs.* Student enrollments have increased steadily at Grand Valley over several decades. During the period covered by the two iterations of SAILS that trend has held true (see Table 7, following page).

Table 7. Recent GVSU Fall Enrollments

| | Head Count | FTE |
|---|---|---|
| **Fall 2006** | 23,295 | 17,963 |
| **Fall 2007** | 23,464 | 18,182 |
| **Fall 2008** | 23,892 | 18,849 |
| **Fall 2009** | 24,408 | 19,391 |

*Source: GVSU Institutional Analysis*

In the last decade GVSU has also continued a trend of becoming more selective. On the one hand, the mean ACT composite score for incoming new Freshmen has increased by nearly a full point between Fall 2000 and Fall 2009 (23.1 to 24.04), and mean high school GPA has risen from 3.34 to 3.53. On the other hand, comparing the period between the first administration of SAILS in 2006-07 and the second in 2009-10, those measures have actually leveled out since 2000 and show little change in the shorter run (see Table 8). Based on these data points, we cannot assert that our students are more or less able or prepared in 2009-10 as compared to 2006-07.

Table 8. Mean ACT Composite score and High School GPA of new degree-seeking FTIACs

| | Mean ACT Composite Score | Mean High School GPA |
|---|---|---|
| **2000** | 23.1 | 3.34 |
| **2001** | 22.9 | 3.34 |
| **2002** | 23.4 | 3.43 |
| **2003** | 23.5 | 3.44 |
| **2004** | 23.8 | 3.52 |
| **2005** | 23.9 | 3.53 |
| **2006** | 23.9 | 3.53 |
| **2007** | 24.2 | 3.57 |
| **2008** | 23.8 | 3.53 |
| **2009** | 24.04 | 3.53 |

*Source: P. Batty, personal communication, June 2010*

*University Libraries mission and programming strategy.* Responding to requests to deliver information literacy instruction in classrooms was a component of many Library Faculty members' assignments from at least the early 1990s. GVSU's first Dean of University Libraries took the reins in July 2005 (the position was formerly a Director), and brought a vision of more intensive and intentional interaction between Library Faculty and disciplinary Faculty. Under her

early direction librarians with liaison assignments were newly encouraged to be assertive about contacting faculty in their liaison departments, and getting invited to as many classrooms as possible. This approach prevailed while restructuring of the entire library was underway in 2005-2006. Restructuring led to the creation of a "Research & Instruction" unit headed by a Director of Research & Instruction (later re-designated as Associate Dean for R&I). The first Director of R&I arrived in Winter 2007, and began working with the R&I Librarians to form a coherent unit with an identifiable mission and strategy. During 2009-10 a task force was charged with developing a recommendation for strategic introduction of information literacy into curricula at GVSU; upon completion of the Task Force's work, on their recommendation a new body was formed – IPIAC, the Instruction Program Implementation and Advisory Committee. As we prepare for the 2010-11 academic year, IPIAC will be guiding the R&I Liaison Librarians in approaching each academic unit to consider how information literacy may most effectively be integrated into each particular disciplinary curriculum. The net result of such a strategic approach should be to maximize the impact of the instruction facilitated by each Liaison Librarian, without actually attempting to place a Librarian in every classroom throughout each year, an impossible task with a comparatively small number of people to accomplish it.

*Student exposure to library instruction*. The total numbers of library faculty in the Fall of 2006 and the Fall of 2009 differ by only two, though in Fall'06 four Liaison Librarians were Visiting Assistant Librarian positions that have since become permanent tenure line positions. Restructuring of the organization and work assignments has led to an increase from 16 Liaison Librarians in Fall'06 to 21 in Fall'09, and resulting in five additional library faculty with work assignments that include library instruction. Posting for and hiring of new library faculty as Liaison Librarians has been more rigorously focused on specific experience with instruction than prior to 2005-06.

As we have worked to develop instruction to a programmatic level, we have made some attempts at recording statistics related to numbers of sessions taught by librarians, and numbers of students in those sessions. While we are aware that our statistics recording systems have varied, and that compliance by all librarians performing instruction is almost certainly incomplete, it is still the case that more librarians have taught more sessions and had contact with more students in 2009-10 than in 2006-07. The 2009-10 instruction statistics show 2.58 times more reported information literacy sessions being taught to GVSU students by librarians over 2006-07, a 158% increase in sessions. While we do not know how many individual students may have been counted in multiple sessions, we can say that the highest possible percentage of GVSU students receiving information literacy instruction has more than doubled in this interval, from approximately 40% to approximately 84% (see Table 9, following page).

Table 9. Librarians, Library Instruction, and Students Contacted, 2006-07 and 2009-10

| | 2006-07 | 2009-10 |
|---|---|---|
| **Library Faculty (beginning of Fall Semester)** | 17 Tenure track<br>+5 Visiting | 24 Tenure track |
| **Liaison (i.e. teaching) Librarians (beginning of Fall Semester)** | 16 | 21 |
| **Reported Information Literacy Sessions** | 323 | 832 |
| **Estimated total headcount of students in Information Literacy Session (not de-duped)** | 9300 | 20,452 |
| **Student enrollment (head count, beginning of Fall Semester)** | 23,295 | 24,408 |
| **Headcount of all sessions as a percentage of FTE enrollment** | .40 | .84 |

*Source: GVSU University Libraries; GVSU Institutional Analysis*

During the period reflected in the 2006-07 and 2009-10 SAILS data collection, our program approach had a significant quantitative thrust: make ourselves known to the faculty in our liaison departments, and make as many opportunities as possible to inject information literacy into courses through direct or indirect contact with students. The essentially stable SAILS results would tend to suggest that simply intensifying our efforts to be in as many classrooms and contact as many students as possible is not the route by which we will successfully contribute to improved information literacy skills as measured by SAILS. Formally adopted as of 2010-11, a new goal of the Libraries' information literacy instruction program is to place our instruction more strategically within the curricula of each department and discipline, and grounded in established information literacy core competencies, or ILCCs. Increasingly we are tailoring our involvement in classes to targeting specific assignments and courses, and teaching skills matched to students in their chosen majors and their anticipated lifelong learning needs. Over the next several years we will be seeking to measure the impact of this new approach; repeating SAILS another time in 3-4 years may be on appropriate measure that will allow us to compare trends over time.

*Physical environments of the libraries.* The University Libraries comprise three facilities: Zumberge Library on the Allendale campus, with the largest amount of seating; Steelcase Library in the DeVos Center on the Grand Rapids Pew campus; and the Frey Learning

Center in the Cook Center for Health Sciences in Grand Rapids. The SAILS demographic data do not include the library primarily used by each test-taker. The three facilities tend to have particular clienteles, and the are very different in size, configuration, and ambience. Nonetheless, during the period since 2006-07 all have experienced space shortages for both user seating and ready access to appropriately tailored collections. Continuous efforts have been made to monitor users' expressed needs and wishes, and to make adjustments to address them. In the Fall of 2013 GVSU expects to open the planned Mary Idema Pew Library & Information Commons, a new facility on the Allendale campus that will replace Zumberge Library with significantly increased user seating, increased open shelving, additional closed collection space on site, and an array of user support services integrated with conventional library services. We can anticipate that transitioning into the Pew Library will lead to new teaching and learning opportunities which could impact on students' information literacy skills. Repeating SAILS in 2012-13, prior to the opening of the Pew Library, would provide data most comparable to that generated so far.

*Student behavior and resource needs*. We made no attempt as part of this study to gather and examine a comprehensive array of resource usage data to form a picture of the range of resources students might be actively using and the value they place on each.

## The Changing Information Environment

In addition to any other factors, it must be considered that the information environment is extremely dynamic. We don't know to what extent the SAILS question bank has kept pace with rapid evolutions in the experience of students. For example, we noted that the only significant difference SAILS identified among Grand Valley students between 2006-07 and 2009-10 was a statistically significant decline in the "Using Finding Tools" skill area. For some years leading up to 2006-07 teaching of finding tools involved user selection of appropriate databases, emphasis on AND/OR logic, and using pre-coordinated subject headings and thesauri. During the interval spanning the two SAILS administrations, the University Libraries offered Encompass and then Nautilus, federated search engines that broadcast searches based on user-selected keywords against multiple databases. More recently (August 2009) we've introduced Summon, a "web discovery" tool specifically designed to accept keyword and simple natural language queries in a single search box, acting as a federated search by delivering results from a wide range of source files; search narrowing or refinement is done as a second step using facets presented by the system based on the initial result set. And all the while, Google has existed as a ubiquitous part of the Internet environment, shaping young users' expectations for searching the digital environment long before they arrive at college. We cannot say whether SAILS is asking the right questions when it attempts to measure skill with finding tools today, or if there are other factors influencing the outcome of the test scores.

## CONCLUSIONS AND RECOMMENDATIONS

Observed as a big picture, the University Libraries is actively re-designing its programmatic approaches to effectively delivering information literacy instruction throughout the curriculum. As of this writing, the University Libraries is beginning to roll out a new instruction program that differs in approach from that of 2006-2010, as has been mentioned previously. Whether changes implemented between 2006 and 2010 can be claimed to have succeeded or failed in producing observable change in the information literacy skills of Grand Valley students as measured by SAILS is not really an argument we feel we can make, because the SAILS instrument is limited, and there are too many other factors to be considered.

One initiative that could have a significant effect on future SAILS scores and student information literacy levels is introduction of the Information Literacy Core Competencies (ILCCs) developed by the University Libraries. The ILCCs were just being finalized and adopted for use in Fall 2009, shortly before the most recent SAILS results were generated. As an intentional component of our instruction philosophy and program, application of the ILCCs to information literacy instruction planning has the potential to impact the results observed when using an external measurement tool such as SAILS. As the library faculty, along with our colleagues in the classroom, modify our approaches to information literacy instruction, and attempt to strategically introduce particular skills at appropriate moments in the course of a curriculum, it is possible that GVSU students' scores as measured by SAILS or (an)other instrument(s) could reflect changes. That change could be either increased or decreased scores as measured by an independent agency, and could be an impetus to create our own local assessment tool designed to measure the skills we value in GVSU programs.

The results of our review of GVSU SAILS data from 2006-07 and 2009-10 suggest a few possible focused research projects that could be undertaken. As reported, the data indicate that Grand Valley students are performing at nearly the same levels they were three years previously, except in one area; a score decrease in "Using Finding Tool Features" is the only area where significant difference appears. Further inquiry in this area might delve into the question of whether and how the information-finding environment is changing, and whether our teaching approaches in regard to this skill area should be updated. In the area of changes in user behavior, we have cursory indication that use of the Libraries' physical collections might be plateauing while student enrollment increases and student profile indicators are trending upward. We have no basis for assigning any relationship between changes in annual circulation of physical resources and changes in information literacy proficiency, but the bigger question could nonetheless suggest an area for additional study. Such a study would perhaps involve looking broadly at resources provided by the library, in all formats, and trends in the usage of each. Tying the behavioral question to information literacy proficiency would be an additional area of investigation.

In conclusion, the overriding question that we as a committee are left with is whether or not the University Libraries should plan for a third administration of SAILS. While our review of

the two existing reports has identified a possible issue of validity and reliability of SAILS data, we do feel that there could be value in administering SAILS a third time in the 2012-13 fiscal year/academic year. This recommendation hinges on a satisfactory response from the SAILS Project regarding our questions concerning the across the board decline in scores among participating Mater's Institutions. An explanation for the change in overall scores could be attributed to the changing profile of students at participating institutions, as SAILS becomes used more widely, and schools with a wider range of information literacy focus in their instruction programs become part of the mix. Alternatively, perhaps the test is no longer valid and reliable; the information environment is evolving rapidly, and information resources and discovery tools have undergone significant change since inception of the development of SAILS. It would be important to know from the SAILS Project what processes are in place to ensure that the test continues to measure important and applicable skills versus ones which have diminished in relevance between inital development, testing in 2002, and piloting at other institutions during 2003-2005.

Ideally, SAILS will continue to be one component of the University Library's near-term assessment planning. In addition to SAILS and data from the Collegiate Learning Assessment (CLA) as measures of student achievement, we should consider developing our own assessment tools to measure local programs and issues that are of particular importance in the context of Grand Valley. SAILS was developed as a standardized instrument to allow comparisons of overall information literacy competence against peer institutions or institution-types, a measure that will continue to remain valuable. But to deepen our insight into the outcomes we want GVSU students in particular to achieve, and to more narrowly measure and seek to improve our efficacy in facilitating successful student learning outcomes in regard to information literacy skills, we will very likely wish to develop an array of local measures to complement our use of broader nationally standardized measures.

## REFERENCES

Kohrman, R., De Wind, L., & Frigo, E. (2007a). Summary of results: Standardized Assessment of Information Literacy Skills. Accessed July 22, 2010 from http://main.gvsu.edu/cms3/assets/741ECAAE-BD54-A816-71DAF591D1D7955C/assessment/SAILS%20summary.pdf

Kohrman, R., De Wind, L., & Frigo, E. (2007b). Summary of results: Standardized Assessment of Information Literacy Skills. Unpublished Word document.

Project SAILS. (2009). *Results of the Standardized Assessment of Information Literacy Skills (SAILS) for Grand Valley State University: Administration: 2009 2010 SAILS*. Kent, OH: www.ProjectSAILS.org . May be accessed at http://main.gvsu.edu/cms3/assets/741ECAAE-BD54-A816-71DAF591D1D7955C/assessment/sails_results2010.pdf

Project SAILS. (2007). *Results of the Standardized Assessment of Information Literacy Skills (SAILS) for Grand Valley State University: Administration: GVSU 2006/07*. Kent, OH: www.ProjectSAILS.org . May be accessed at http://main.gvsu.edu/cms3/assets/741ECAAE-BD54-A816-71DAF591D1D7955C/assessment/Results2007.pdf

### Additional Resources

Preparatory to our review and analysis of the reports of the two administrations of SAILS at GVSU to date, we gathered and read the following articles. The majority of these are specifically related to SAILS, and served to inform our understanding of the origins and development of the instrument. They also represent all the published information we could locate about SAILS, a rather small body of literature.

Considering assessment of library and information literacy skills more generally, Burkhardt (2007) describes a project at the University of Rhode Island in 1998-2006 to offer a credit course in library skills, and use pre- and post-tests to measure improvement in mastery. The author concludes that it is desirable to follow up their project with administration of a test used on a regional or national level, in order to compare and validate results of their local instrument; as an additional benefit, application of a more widely used test would permit comparisons against other institutions. Oakleaf and Kaske (2009) offer a practical conceptual approach to assessment of information literacy, and to developing an assessment program. Outlining six key questions, the authors suggest that there is no one "right" approach to assessment (e.g. local developed assessments vs. standardized instruments), but rather they recommend a series of considerations which will help librarians in given circumstances determine what will suit their particular local need. The Working Group were very impressed by the thoughtful and detailed decision framework offered by Oakleaf and Kaske, and recommend

that their work be considered as a tool we might adopt as we go forward with information literacy assessment efforts.

Blixrud, J. (2003). Project SAILS: Standardized Assessment of Information Literacy Skills. *ARL*, (230/231), 18-19. Accessed April 19, 2010 at http://www.arl.org/bm~doc/sails.pdf

Burkhardt, J. M. (2007). Assessing library skills: A First step to information literacy. *portal: Libraries and the Academy*, 7(1), 25-49. Accessed April 19, 2010 at http://muse.jhu.edu/journals/portal_libraries_and_the_academy/v007/7.1burkhardt.html

Oakleaf, M. & Kaske, N. (2009). Guiding questions for assessing information literacy in higher education. *portal: Libraries and the Academy*, 9(2), 273-286. Accessed April 19, 2010 at http://muse.jhu.edu/journals/portal_libraries_and_the_academy/v009/9.2.oakleaf.html

O'Connor, L. G., Radcliff, C. J., & Gedeon, J. A. (2002). Applying systems design and item response theory to the problem of measuring information literacy skills. *College & Research Libraries,* 63(6), 528. Accessed April 19, 2010 at http://www.ala.org/ala/mgrps/divs/acrl/publications/crljournal/2002/nov/oconnor.pdf

O'Connor, L., Radcliff, C., & Gedeon, J. (2001). Assessing information literacy skills: developing a standardized instrument for institutional and longitudinal measurement. In *Crossing the Divide* (pp. 163-174). Presented at the Tenth National Conference of the Association of College and Research Libraries, Denver, Colorado: ACRL. Retrieved April 19, 2010 from http://www.pla.org/ala/mgrps/divs/acrl/events/pdf/oconnor.pdf

Rumble, J., & Noe, N. (2009). Project SAILS: Launching information literacy assessment across university waters. *Technical Services Quarterly*, 26(4), 287-298. Accessed April 19, 2010 at http://www.informaworld.com/10.1080/07317130802678936

Salem, J., & Radcliff, C. (2006). Using the SAILS Test to assess information literacy. In *Building Effective, Sustainable, Practical Assessment* (Vol. 1, pp. 131-137). Presented at the Library Assessment Conference, Charlottesville, Virginia: Association of Research Libraries. Retrieved April 19, 2010 from https://www.projectsails.org/pubs/Using_SAILS_ARL_Charlottesville.pdf

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