One of the essential learning outcomes for students at Southern Utah University is information literacy. Consequently, librarians at the Gerald R. Sherratt Library teach a one-credit, required general education class on information literacy to incoming freshmen. The class offers a general introduction to library research where students learn to generate a research question and use search strategies to find and evaluate relevant information in the library catalog, the library databases, and online (Google Scholar). Students also create an MLA works cited page for a book, magazine article, and scholarly article pertaining to their research question. The class begins with a competency exam to get a baseline of each student’s information literacy ability. Following the general trend, but alarming nonetheless, information literacy preparedness of our incoming students tends to lag behind expectations (e.g., Allen, 2007; Fabbi, 2015; Nix & Hageman, 2011). Upon a more careful examination of the competency scores, we noticed a difference in student performance between the different regional high schools. What are some schools doing that results in more information literate students? We designed this case study to determine what factors might have contributed to the difference in information literacy skills between schools.

Because students’ information literacy preparedness is likely affected by a student’s high school education and school library programs, we collected data from high school principals, school librarians, teachers, and students. Our study’s findings inform possible interventions, both in our academic library and in the school library programs, to improve student success and retention.

**Methodology**

A multiple case study methodology using a mixed-methods approach was employed to find the cause of the differences in student performance between the three high schools (referred to as HS1, HS2, and HS3 respectively). Several types of data were collected (see Table 1) ranging from statistical data to interview data. Data collection took place from the fall of 2014 through spring of 2016. Statistical data about each high school and student grade information were obtained from existing datasets. Surveys were sent to seniors at two high schools (a link was provided to the survey on the school’s homepage for seniors from the third high school) to gather opinions about the library, librarian, and readiness for college-level research. Surveys were sent to the school librarians to gather statistical information about their library programs, then each librarian was interviewed about their library and the role they fulfill in their respective school’s learning communities. Surveys were also sent to all the teachers at each high school, and a self-selected subset of those teachers was interviewed as a follow-up. All three high school principals were also interviewed.
Table 1: Data collection and analysis for the study (numbers are listed for HS1, HS2, and HS3 when applicable)

<table>
<thead>
<tr>
<th>Data type</th>
<th>Data sources</th>
<th>Data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistical information</td>
<td>Utah State Office of Education (October 2015)</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>Competency exam grades</td>
<td>LM1010: Information Literacy (collected Fall 2014 - 18 sections, Spring 2015 - 13 sections)</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>Surveys</td>
<td>Students (95, 48, 13), teachers (25, 36, 8), librarians (1, 1, 1) (collected Spring 2016)</td>
<td>Descriptive statistics</td>
</tr>
<tr>
<td>Interviews</td>
<td>Principals (1, 1, 1), teachers (5, 4, 5), librarians (1, 1, 1) (collected Spring 2016)</td>
<td>Coding for themes</td>
</tr>
</tbody>
</table>

RESULTS

The genesis for this study was the difference in competency exam scores between the three high schools. The mean score for all high schools in the study was 67.1%, which translates to a D+ grade. High School 1 (HS1) had a mean score of 67.8%, High School 2 (HS2) had a mean score of 62.9%, and High School 3 (HS3) had a mean score of 70.3%. There was no statistical difference between students from HS1 and HS3 and both performed statistically significantly better than their peers from HS2. We set out to determine what factors could explain the difference in student performance on their information literacy competency exam.

We first checked statistical data concerning the three high schools. We compared demographic data, as well as GPA and ACT scores across schools, and the only significant difference between the schools was size: 1,086, 1,103, and 202 students respectively. Another difference between schools was the State’s grade for each school: a C for HS1, and a B for HS2 and HS3. State school grades are based on student achievement and academic growth, the percentage of students who meet the ACT college- and career-readiness benchmarks, and graduation rates. These school grades also fail to explain the difference we found in competency exam scores. Interestingly, the percentage of minority student and low-income households are approximately the same for each high school.

Students and Teachers

As is commonly reported in the literature (e.g., Gross & Latham, 2007), students in our study overestimated their research ability, rating various skills at a C or better between 92% and 100% of the time. The only skill students rated themselves low on was using Boolean operators where they rated themselves a C or better about 53% of the time. Results from the student survey showed only a few differences between high schools. At HS2 and HS3, 94% and 92% of students respectively planned to attend college with no students saying “no” to college. HS1 students planned to attend college at a rate of 82%, with 5% of them not planning to attend and the largest percentage of undecided at 13%.

Teachers at HS1 and HS2 overestimated their students’ college-level research abilities at a C or better at 91.7% and 84.8% of the time respectively, while teachers at HS3 more accurately estimated their preparedness at below C 50% of the time. However, teacher interviews revealed that if a teacher had an active role in providing research skill instruction directly to students, they more accurately estimated their students’ information literacy preparedness. Teacher background and level of education did not appear to have an impact on student performance (see Table 2).

Table 2: Teacher start date & highest degree completed

<table>
<thead>
<tr>
<th>Began Teaching</th>
<th>% Associates’ Degrees</th>
<th>% Bachelor’s Degrees</th>
<th>% Masters’ Degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS1</td>
<td>1999</td>
<td>0.0%</td>
<td>44.0%</td>
</tr>
<tr>
<td>HS2</td>
<td>2001</td>
<td>2.8%</td>
<td>58.3%</td>
</tr>
<tr>
<td>HS3</td>
<td>1998</td>
<td>0.0%</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

The High School Librarians

Each of the three librarians interviewed reported a very different approach to administering their library programs. The librarian at HS1 reported actively collaborating with teachers, often offering services and teaching information literacy skills in their classes. The librarian at HS2 reported collaborating with teachers only occasionally when requested by the teachers. The librarian at HS3 reported no collaboration occurring. The librarian at HS1 was the only librarian to report collaboration with the local public library as well. In a similar pattern, the librarian at HS1 described an active role in the school community, serving on multiple committees, whereas the librarians at HS2 and HS3 had no committee involvement. Regarding school integration, the librarians at HS1 and HS3...
reported frequent involvement in activities outside of their regular job duties, ranging from scholarship management to secretarial duties. The librarian at HS2 reported no activities outside the library. While an active, integrated librarian might explain the success of students from HS1, it is unclear how students from HS3 manage to do well on their information literacy competency exam aside from the advantage of being a much smaller learning community (200+ students compared to 1000+).

**High School Principal Perception of their School Libraries**

Principals spoke frankly about the role of the library in their school’s learning community and their students’ readiness for college-level research. All three principals demonstrated a thorough understanding of the ideal role of a librarian and the potential impact a librarian could have on their school learning community, stating “getting accurate information because of the overabundance of misinformation is essential” (HS1), “the information is there more than it’s ever been and these students are lost in it more than they’ve ever been” (HS2), and “teaching students how to access information is key” (HS3). Overall, the principal from HS1 described the school’s librarian as the most involved, stating, “the library itself is the hub [of the learning community], everything stems out from there, from technology to working with teachers on the curriculum. So, [the librarian] and [the library] are the hub of the learning” (HS1). The principal from HS2 would like to see the librarian more involved as a proactive school leader, saying, “while I think we have a strong [librarian]...to go to that next level it takes that dynamic individual who's going to insist on things happening because [the librarian] sees the gaps and recognizes them and brings those things to the attention of administrators and leaders, collaborates with teachers and creates...meetings to have teachers come in” (HS2). Lastly, the principal from HS3 stated that the library is “an underused resource” in his school. He acknowledged the importance of librarians being certified and staying abreast of the latest technology trends, describing the ideal situation would be a librarian who has “the knowledge to work with technology, instruct with technology, troubleshoot and help kids. The role of a librarian is just so much more than checking out books” (HS3).

**Library Perception and Use by Students and Faculty**

Students at HS1 and HS3 were more likely to use their library “sometimes” or more frequently with 80% and 92.3% respectively, while students at HS2 reported using the library “sometimes” or more frequently only 68.8% of the time. The students at HS1 were twice as likely to ask their librarian for help “sometimes” or more frequently than students from HS2 and HS3 at 16.8%, and 8.3% respectively. 15% of students at HS1 and HS2 reported coming to the library with their whole class while only 4% of students from HS3 reported doing so. In short, students from the schools whose students have better information literacy skills (HS1 and HS3) spent more time in the library, and HS1 students were more likely to ask their librarian for help. That said, HS3 students hardly ever came to the library with their entire class. Finally, when asked how much they agreed with the statement, “My school librarian has prepared me for college,” students agreed or strongly agreed with that statement 38% of the time, with HS1 students at 41%, HS3 students at 39% with no one strongly agreeing, and HS2 at only 31%.

The teacher survey showed large disparities between the culture, perception, and use of librarians at each of these three high schools. For example, teachers at HS2 and HS3 were less likely to see the positive impact librarians can have on student learning, with only 26.5% and 25% respectively “strongly agreeing.” At HS1, 75% of teachers “strongly agreed” that librarians have a positive impact on student learning. When asked whether school library curriculum standards are important to student learning, 20.8% of teachers at HS1 “strongly agreed” with only 5.9% at HS2 and 12.5% at HS3 strongly agreeing. It appears that HS1 has strong support among students and faculty, which, in combination with an active integrated librarian, might explain why HS1 students do better on the information literacy competency exam. However, the situation in HS3 obviously doesn’t fit the same trend and yet their students perform about the same.

Based on teacher interviews at HS1, teachers generally reported feeling supported by their library and librarian in regards to professional development and collaborative co-teaching opportunities. They attributed a lack of student information literacy preparedness to new, shorter class scheduling, curriculum shifts, and state testing demands. It was frequently mentioned that research skills are simply being eliminated from the curriculum in an effort to increase the focus on writing. Teachers at HS2 reported far fewer instructional partnerships with their school librarian, remarking that the library is primarily used as a computer lab, study space, and resource for leisure reading. One teacher reported feeling more confident in teaching information literacy skills in the classroom rather than relying on the librarian for co-teaching opportunities. Teachers at HS2 revealed that most of the research activities happen in the junior English courses, if at all, with no collaborative inclusion of the librarian. Similarly to HS2, teachers at HS3 also reported all research activities being teacher-led rather than relying on the library for any professional development or collaborative co-teaching. However, the teacher-led research instruction is happening at HS3 in a scaffolded, multi-year approach. Freshmen teachers at HS3 reported starting students out with foundational research skills such as keyword searching skills and copyright knowledge. By junior year, the students are involved in a quarter-long research project. This junior year research immersion includes instruction on topic selection, citation styles, source variety, databases, and evaluating resources. A few teachers even elect to include a cross-disciplinary approach where students’ topics come out of their history class. Given that this teaching framework most closely mirrors the topics covered in our Information Literacy Competency Exam, it could explain why HS3 students perform well despite a less active librarian role.
CONCLUSION AND FUTURE RESEARCH

We set out to explain the difference between high school graduates’ performance on the information literacy competency exam they take as incoming college freshmen. HS1 and HS3 perform about the same, but both statistically outperform HS2. This study used statistical data about the school as collected by the state board of education, as well as student, teacher, and librarian surveys, and principal, teacher, and librarian interviews. Our research shows that having an active, integrated librarian can prepare students adequately for college-level research and, in other cases, teachers can step up to fill the gap with research assignments. It appears that a key component to student preparedness to perform college-level research are the high school research assignments that are integrated throughout the students’ high school careers, starting with foundational freshmen-level research assignments and culminating in extensive junior and senior research projects. However, one of our findings suggests that teacher-led research may become unsustainable as the curriculum continues to shift. This is why it is so important to have school librarians drive the integration of information literacy projects. This requires concerted advocacy on the part of the librarian to make inroads with teachers and demonstrate the value of collaboration. However, administration can facilitate this process in many ways, especially when a librarian is working to change a culture where collaboration was not formerly embraced in a school. One suggestion resulting from our study is for administrators to encourage collaboration by including it in their annual teacher evaluation process. Additionally, administrators can give librarians more visibility in the school community by including them on committees. Partnerships between academic and high school librarian (recommended by professional organizations as early as 2000) can ensure that key research skills are incorporated into the research assignments. In a future study, we will explore how the partnership between high schools and academic librarians impacts college readiness.

REFERENCES


