From Ohio to Uppsala: Assessing Student Learning and Transforming Practice

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Abstract
The experience of Uppsala, Sweden school libraries demonstrates the process of moving from research to evidence-based practice as a transformational process. Seven schools in Uppsala conducted research based on Todd and Kuhlthau's (2003) Student Learning through Ohio School Libraries study. External researchers analyzed the research data and presented a formal report to the Uppsala study stakeholders. The results of the study informed plans to transform practice. Details of the experience include the findings from the study, implications for practice and the resulting collaboration between the principal and librarian at one school toward impacting student learning.

Introduction
The International Federation of Library Associations (IFLA) second revised edition of the *IFLA School Library Guidelines* (2015) was inspired by a vision of the school library as "a force for the enhancement and improvement of teaching and learning throughout the school community—for educators as well as for students" (IFLA, 2015, p. 7). Among the recommendations in the guidelines are the monitoring and evaluation of school library programs and services (Recommendation 4, p. 10) and that evidence-based practice should guide programs and services to ensure a positive impact on school-based teaching and learning (Recommendation 15, p. 11). These recommendations are a direct call for efforts to measure the positive impact of school libraries on student learning and school improvement. The current study provides evidence of the positive impact of school libraries in Uppsala, Sweden and acts as a foundation for the transformation of programs and services.

Statement of the Research Problem

Assessing practice can be difficult without a baseline to measure against. In an effort to establish that baseline of current practice, Uppsala school librarians sought to identify the extent to which Uppsala students benefit from the school library. The Uppsala Study was formulated from an appreciation of the evidence presented in the research study *Student Learning through Ohio School Libraries* (Todd, 2003b; Todd & Kuhlthau, 2005a, 2005b). The Ohio Study focused on student perceptions of benefit in terms of "conceptions of help", described by Todd as "the nature and extent of 'help' provided by the school library in relation to student learning" (Todd, 2003b, p. 1). The Uppsala study follows the Ohio study in purpose and design, seeking to determine how students benefit from the school library and how practice may be improved.

Literature Review

The Swedish Education Act of 2011 mandated that students have access to a school library (Barrett, Eriksson, & Contassot, 2011). While that mandate provided a positive shift towards recognition of the value of school libraries, it did not provide a template or direction for how to achieve "access" or a clear definition of a school library. The National Library of Sweden survey of school libraries in May, 2012 showed that "few students in Swedish schools had access to a 'school library', as defined by having a catalogue, manual or computerized; being located on the school premises; being staffed at least 20 hours a week; and having at least 1000 physical media" (Ahlstedt et al., 2015, p. 112). At this point, many felt that "even if a school said it had access to a school library, it lacked the functions, resources, and availability for a school library to act as an educational learning resource" (p. 112).

With the new Library Act of 2013, a more comprehensive library policy was established and the national strategy is a further effort to bring about a more concerted effort and extension of the library system, and not least the school libraries (Schultz Nybacka, 2018). Within this climate of school library attention, recognition of international research demonstrating the value of school libraries received attention. In her 2018 report on *The Value of School Libraries* for the National Library of Sweden, Schultz Nybacka devotes one chapter exclusively to international research, and acknowledges the contributions of international researchers throughout the report.

In the context of understanding the need for an evaluation of the school library, the Uppsala study initiators sought to replicate the methods employed in the seminal *Student Learning through Ohio School Libraries* study.

The *Student Learning through Ohio School Libraries* (Todd, 2003b; Todd & Kuhlthau, 2005a, 2005b) was a high-profile study providing evidence of the impact of school libraries on student learning, achievement, and engagement. The research study sought to understand how students benefit from school libraries through elaborating 'conceptions of help' and providing some measure of the extent of these 'helps,' as perceived by students and faculty (Todd, 2003b). As Tepe and Geitgey (2005), Director and Associate Director of the Ohio Study respectively, attest, a widescale study is a "basis for continual improvement of the learning opportunities to be afforded to students through the provision of quality libraries" (p. 55). Hay (2005) replicated the Ohio Study in Australia, finding "a number of overall results from this Australian study mirror those of Ohio's results" (p. 22). While the purpose of the Australian Study was not to compare results with the Ohio results, the similarity of results was striking.

Indeed, an interest in considering research within a local context is germane. In a commissioned review by the Australian School Library Association (ASLA), *Impact of School Libraries on Student Achievement*, Lonsdale (2003) highlights the need for local research, and not relying solely on US-based research findings. The current study marks a critical benchmark in the efforts to demonstrate the impact of the school library on student learning in Uppsala, Sweden. While the Uppsala study is based on the Ohio study, differences were intentionally selected and these are reported within the section on methodology.

Methodology

Seven middle – high schools in Uppsala, Sweden voluntarily participated in the study; of the 1,651 students enrolled in 2012 in these seven schools, 605 completed the *Uppsala Impacts on Learning Survey* (37%). The survey consisted of 40 statements selected from the *Ohio Impacts on Learning Survey,* organized within the same seven conceptual grouping blocks, and included the same open-ended question: Tell us about one time when you received good help from the school library. A survey was not administered to faculty in these schools and demographic information (statements 1-8) was not collected. Where a judgment sampling process was employed to select 39 schools in the Ohio Study, the Uppsala Study operated on the basis of seven volunteer schools. In the Ohio Study two online surveys, named the Impacts on Learning Survey, consisting of 48 statements with a 4-point Likert scale response option (see Figure 1) and one open-ended question were administered to students in grades 3 through 12 in the Ohio schools, and with modifications to faculty in these schools. Questions were worded to focus on the school library rather than on the individual librarian.

In the Uppsala Study, a 5-point Likert scale provided response options for 48 statements organized in seven question blocks according to the Ohio Study, with one open-ended response question. The wording was altered so that 0 = do not agree at all, and 4 = completely agree, rather than "most helpful" from the Ohio Study.

Lisa Åström, Tony Melander and Åsa Mattsson, members of the Uppsala school library community, collected and organized the Uppsala Study survey data for analysis. Researchers from the Department of Information Science at the University of North Texas (UNT) were invited to analyze the study's survey data in November, 2017 and provide a report to the Uppsala Study coordinators. The Swedish trade union, DIK, responsible for organizing academically trained professionals in the fields of culture and communication, arranged and paid for the translation of the survey and results from Swedish to English. The UNT researchers received the data electronically and conducted an analysis in February, 2018; a report was presented in person to the Uppsala Study members and Olof Oskarsson, the principal of Rosendalsgymnasiet School, on April 27, 2018. Despite the gap in time from data collection to final report, the data analysis provoked a welcome reception, and willingness to move forward with changes to the programs and practice within Uppsala school libraries.

Findings

The survey results, extracted from the final report, are presented by question block.

Block 1: How helpful is the school library with finding the information that you need?

This question block focuses on the process of finding and using information, steps that students equate with doing library-based research. More than 77% total agree to some degree. Less than 20% found the library not very helpful in the sub-categories of finding and using information. The strongest responses related to feeling good about asking for help (32.0%), help in finding different sources of information (31.6%), and helping with the steps in finding and using information (25.6%). These areas remain the strongest when responses of 3 and 4 (out of 5-point 0-4 scale) are added together: 58.3%, 59.6%, and 52.0%, respectively.

The weakest responses were in the areas of help with working out question topics (13.9%/37.3%) and helping evaluate information (19.3%/41.9%). These are also the areas with the highest "Don't know" responses (15.2% and 14.5%, respectively), indicating that students are unclear about the type of help they could receive in the library at these stages of the information problem-solving process.

From these results related to help with finding information, clearly the library has focused on service and instruction that emphasizes locating information. This has been the traditional area of focus in school library programs, but does not match the needs of students in skill development in the digital age. Likely, little focus has been placed on the Identify stage, where students construct an inquiry question that will frame the rest of the inquiry, and the Gather stage, where students collect detailed information from a variety of sources that involves locating information, evaluating information and information sources, and using a variety of sources.

Block 2: How helpful is the school library with using the information to complete your schoolwork?

This block of questions asked students about help from the library in using information to complete assignments and is focused on the cognitive and meta-cognitive dimensions of using information. Students found the library helpful with more than 64% total agreeing to some degree. The dimensions receiving the highest ratings of helpful include using different kinds of information sources (19.6%/47.4%), finding information in the future (19.1%/46.0%) and knowing that research takes a lot of work (19.0%/44.5%). Again, responses to questions in this block are most positive when related to locating information (this time, within different source formats).

Questions in this block received the overall lowest ratings of the blocks related to information problem-solving. More than 30% (17.3%/31.1%) of the students in this survey gave a "0" or "1" to the question of the school library helping put students' ideas and thoughts into their own words. Other questions with the lowest student ratings include feeling more interested in the research topic after locating information (12.1%/26.6%), synthesizing ideas and thoughts (11.9%/25.5%), and determining the main ideas within the located information (11.4%/23.5%).

The highest percentages for each question in this block fall in the middle of the Likert scale; at the least, it may be surmised that students feel that the library is helpful to some degree in this area, but not very much. These results align with the notion that the library programs in these schools have emphasized the traditional skills of locating information.

Block 3: How helpful is the school library when you have an assignment?

This block of questions relates to help in completing assignments and is more explicitly focused on cognitive information use and the cognitive drivers and outcomes of engaging with information. These questions examine perceptions of help in the broader concept of completing assignments, rather than the relatively narrower concepts of information seeking and use examined in the first two blocks. Students found the library helpful with more than 64% total agreeing to some degree.

In this block, the highest ratings were given to the questions related to learning more facts about topics (23.0%/51.4%) and getting general facts about topics (23.4%/48.1%). Also rated relatively high was the question related to helping students to understand some things (17.9%/41.1%). From these, it appears that nearly half of the students in the survey do see the library as helpful in the general sense of finding facts. However, it should be expected that nearly all students see the library as helpful in this general regard.

The remaining questions in this block received much lower ratings of help. The question related to help changing students' minds about things they thought they knew received a rating of "0," "1," or "Don't know" from nearly half of all students surveyed (48.8%). Similarly, the question related to help with figuring out if students are on the right track received those ratings from nearly half (46.9%), as did the

question related to help with figuring out students' own opinions on things (45.8%). The inquiry stage that could assist this ambivalence is Create, where learning is synthesized.

These are intriguing results, as they may relate to a growing concern that students are unprepared to identify and assess their own value system, leaving them vulnerable to misinformation and disinformation. Contemporary library programs are increasingly addressing these challenges through digital citizenship and critical thinking curricula.

Block 4: How helpful the school library is with using computers

Questions in Block 4 relate to perceptions of help in using information technology, based on the school library's provision of a technological infrastructure, instruction in its use, and the technical tools to create representations of their learning. Students found the library helpful with more than 71% total agreeing to some degree. Ratings for the question of help in searching the internet better are relatively evenly distributed; nearly 20% of students rated library help in this area as "2," "3," or "4" each, while 17.2% rated it a "0." Likely, there are two scenarios: all students are receiving instruction in the access of online information and some feel they do not need it, or instruction is not comprehensive, meaning that some students are receiving instruction in their classes, and others are not. Questions related to help in being careful and critical about online sources of information, and help in improving online search skills, received the higher ratings of help. However, it should be expected that nearly all students see the library as helpful in this regard. An investigation into the nature and extent of instruction in information technology is needed.

Block 5: How helpful the school library is to you with your general reading interest

This block of questions addresses two dimensions of reading: access to reading materials, and personal attitude toward reading and writing. Students found the library helpful with more than 52% total agreeing to some degree. While perceptions of help were very high when asked if the library helped in finding books students like, they were very low (rating of "0") when asked if the library made them read more (29.3%), supported them in getting better at reading (32.2%), made them like reading more (31.0%), and help with writing better texts (25.7%).

It may be surmised that the library programs in these schools emphasize circulation and collection development versus developing a reading culture through "reading advocacy". Reading advocacy is an assertive approach to the promotion of reading and the development of positive attitudes toward reading. It typically includes an agenda of school-wide reading promotions, author visits, outreach efforts to classrooms in providing book talks and literature studies related to curriculum, one-on-one reader's advisory student interviews, leadership on school literacy committees, instructional partnerships in literacy development, and frequent communication with students, school staff, and families regarding reading advocacy efforts. It also includes high involvement of the school librarian with reading and recommending current books related to student interests with interaction about content.

Block 6: How helpful the school library is when you are NOT in school

Students are learning whether they are in the formal learning environment of school, or the informal learning environments of home, the public library, and the like. This block of questions relates to student perceptions of how the school library fosters independence and transfer of learning to other contexts and situations in these informal environments.

Overwhelmingly, students did not perceive the school library as helpful outside of school. The only question rated highly in this block was related to the school library as helpful in finding information even when students were not in school (50.1% gave ratings of "2," "3," or "4"), suggesting that students were likely seeing the value of online information resources available through the school library. The question related to information in the library helping students decide what to do next with school work received tepid ratings of help (24.1% rated this as "2"—the highest rating for this question), although 19.1% rated this as "Don't know" and 20.8% rated this as "0." Ratings of "0" were the highest results for all of the remaining questions related to help in discovering interesting topics other than school work (34.7%), things learned in the library as helpful in studying at home (25.7%), help in getting more organized with homework (37.9%), help in understanding and solving problems in a better way (22.5%), and help with personal concerns or questions not related to school work (38.1%). Furthermore, all questions in this block received relatively high ratings of "Don't know," suggesting that students really do not have an idea of how learning in the school library may be useful outside of school.

These results reveal a missed opportunity for the school library to actively help in informal learning. Personalized learning structures, connected learning labs, computer coding, STEM learning, and other school makerspace activities are transforming student perceptions of the library and motivating related learning beyond the walls of the library. Partnerships between school and public library programs provide bridges between formal and informal learning environments; these may look like summer reading programs, resource sharing agreements, co-teaching opportunities, makerspaces, and more. Moreover, the school library may facilitate metacognition in the instruction of the information problem-solving process.

Block 7: General School Things
Moderate perceptions of help are evident in this block of questions, focused on perceptions of the school library's links to academic success with more than 52.9 % total agree to some degree. Most students gave a rating of either "2" or "3" to the questions of help with doing school work better and help with getting better grades on projects and assignments. Further examination into whether students are identifying help in these questions as related to access to information or to all stages in the information problem-solving process is warranted.

For the question of help in feeling more confident about doing school work, most students gave a rating of "0" (26.2%), although many gave a rating of "2" (19.6%). These results are similar to those for questions related to help in getting better grades on tests and quizzes and help in thinking harder about school work. For these three questions, very few students gave high ratings of help, suggesting that students do not perceive that the help they receive from the library is highly contextualized and does not transfer to learning experiences beyond the library.

Further Conceptions of Help
In answer to the open-ended response question, *Tell us about one time when you received good help from the school library:*
- 179 of 605 students (30%) responded to the open-ended response question
- 20 students (or 11%) indicated they never use the library or never ask for help; 6 students (or 3-1/2%) noted they only use the library when they are required to do so.
- 77 students (or 40%) mentioned books specifically.
- 2 students compared librarians with technology, indicating the advantages of librarians are that they are "incredibly good" and "always willing to help."
- 5 students mentioned the library as a "place."
  - Peace and quiet to study

- ○ Guarantees a quiet environment
- ○ Place to relax and focus
- ○ Quiet room where you can concentrate
- ○ Place to do homework

Descriptive words for librarians: fantastic, quick, nice, helpful, give 100%, happy, positive responses, simply the best, solid as a rock-light of ray, always know, very knowledgeable, lovely, opened my eyes, every time, always has time for everything and everyone, dedicated, structured, treat [students] in a really nice way, great, unbelievably competent, knows how to help, incredibly good, always willing to help/"extra help", sounding board.

Also, the librarian(s) smiled, gave help/advice/suggestions/tips, and threw around ideas.

A wordle, presented in Figure 2, identifies the prominence of words used in the open comments section of the survey.
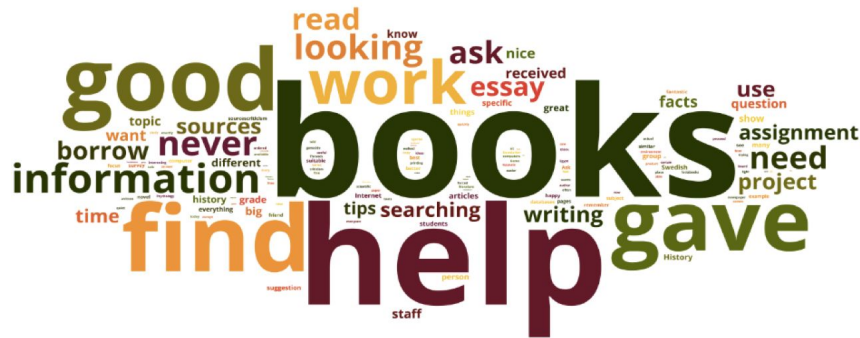

Figure 2.Prominence of words used by student respondents in the survey's open comments

Discussion

To recognize that the baseline is the 2012 study, and gauge movement along the continuum of practice, recommendations included:

1. Repeat the Uppsala study to gauge movement along the continuum of practice.
   a. Include additional schools across Sweden if they are interested.

   b. Include teachers in this second round of data collection.

   c. Collect demographic data related to the age and/or grade level to enable analysis of age/grade-related patterns.

2. Survey the Uppsala teachers to gauge their current perceptions of the school library; this would help to detect patterns and triangulate the analysis of the 2012 data.

3. Examine the implications for practice and formulate strategic plans, including future assessment.

For consideration of school library practice, each question block included recommendations:

Block 1: Finding information: Strengthen the stages of the information seeking process within an information problem-solving, or inquiry process.

Block 2: Using information: Skill sets could be strengthened and further developed with an information problem-solving, or inquiry process to balance instruction across the stages of the process, rather than focusing squarely on location and access of information which is merely a middle stage.

Block 3: With assignments: Activate the Create stage of the Guided Inquiry process where learning is synthesized.

Block 4: Using computers: Investigate the nature and extent of instruction in information technology; how is technology integrated into the school library and school library instruction?

Block 5: General reading interest: To advance reading interests consider high involvement of the school librarian with reading and recommending current books related to student interests with student interaction about content; consider a program of reading advocacy.

Block 6: Outside of school: Consider personalized learning structures, connected learning labs, computer coding, STEM learning, and other school makerspace activities in the school library.

Block 7: General things: Consider more direct coordination with the school curriculum and integrate library instruction with curriculum instruction.

Research into Practice

The principal and librarian at Rosendalsgymnasiet collaborated to prepare a School Library Plan that included specific goals.

Goals for upper high school: When our students graduate from Rosendalsgymnasiet they should be very well prepared for future studies and work life. The library is working from two points of view: that the students should have a high level of information literacy and reading literacy when they graduate. The library is following Uppsala's municipal plan for all public founded libraries, existing laws and regulations, international and national guidelines and existing current curriculum. To be able to evaluate the effect on the students learning we are using the Ohio study questions as a starting point. The library plan is evaluated end revised once a year.

Goals for SPRINT (introduction program for immigrants): The students at SPRINT should be well prepared for coming studies (upper high school). We are working from the points of view: media-and information literacy and reading literacy. The library is following Uppsala's municipal plan for all public founded libraries, existing laws and regulations, international and national guidelines and existing current curriculum. The work is evaluated on a regular basis. The library plan is evaluated on a regular basis.

Goals for Each Grade Level:

Grade 1 (First grade of high school)
- Begin to understand how to search for information using different search tools
- Begin to understand the information searching process and other processes to be able to use information in the best way possible
- Be familiar with the school library resources
- On a basic level, be able to find and access printed and non-printed resources via the library
- Criticism of sources
    - Get a basic understanding of the term usability

· Be able to use the basic questions: Who? What? Why? When? How?

Grade 2 (Second grade of high school)
- Know how to search information in all different kind of tools and be able to use advanced search and other limiters and expanders, for example
- Be able to handle information searching from start to finish. Search, find, evaluate, handle and be able to use the information.
- Know and handle library resources, depending on what you are looking for.
- Be able to understand that different kinds of search tools contain different materials.
- Criticism of sources:
  · Know and understand the term usability
  · Be able to evaluate a resource in comparison with other resources

Grade 3 (Final grade of high school)
- Master the art of using different kind of search tools as effectively as possible by knowing how to use advanced search, key words, Boolean search operators and so on.
- Understand the information search process and master it from start to finish (start writing) in the best way possible.
- Can handle different kinds of resources and search tools depending on what you are looking for
- Know how to find material/information in different kinds of resources and know how to access the information both at school and outside.
- Criticism of sources:
  · Judge the source's reasonability, usability and credibility
  · Use a source in best way possible regarding what you are looking for

Evaluation is now an essential ingredient of the school library plan and the Ohio Study features prominently in subsequent evaluations. Plans are in place to run The Swedish Ohio Study at the beginning of the semester for Grade 2 and do the same survey when they graduate to gauge progress. Under consideration is a survey of the teachers as well.

An essential participant in the presentation of the Uppsala Study Final Report was the principal of Rosendalsgymnasiet, Olof Oskarsson. He hosted the report presentation and extended the session to two hours of discussion and questions. His commitment to collaborating with Lisa Åström, the school librarian, was evident and together they developed a library plan for Rosendalsgymnasiet. Subsequently, Olof became the lead for the school library group for high schools in Uppsala and recently he joined the Education Department in Uppsala as a junior officer. His commitment to school libraries now extends to addressing the results of the National School Library Plan recently based on the report by Schultz Nybacka (2018).

An additional recognition of the efforts of the Rosendalsgymnasiet principal and school librarian is receipt of the DIK Union's Skolbibliotek i världsklass [World Class School Library] award for 2019, out of a field of 80. This award was established in 2015 to recognize school libraries with the following quality criteria. A World Class School Library is:
· An explicit part of the school's pedagogical vision;
· Collaborates with the school management and the teachers around the students' learning'
· Strengthens the students' communicative competences, especially reading, in a multimodal text world;

- · Strengthens the students' digital competences with special focus on information skills and understanding of information-seeking processes and social media;
- · Supports individuals and groups in learning processes; and
- · Oversees learning resources and supports teachers and pupils in their use of literature and media. (Ahlstedt et. al., 2015, p. 116)

Conclusion

The experience of Uppsala, Sweden school libraries demonstrated the journey of moving from research to evidence-based practice as a transformational process. A critical element in this process is the role of the principal. Collaboration between the librarian and principal is essential to moving beyond the foundation. As Ahlstedt et. al. (2015) found:

> for real change in learning to take place it is not enough to have a library, a librarian and good resources. The educators (including librarians and school principals) need to collaborate and have a common idea about the role played by the school library in learning. (p. 118).

For the Uppsala school libraries, the commitment of the school principal and librarians to the process of collaborating to advance student learning will move the research into practice and beyond.

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