Teachers and Librarians Use Collaboratively Designed Online Projects to Foster Better Learning

DEVELOPING POWERFUL Student Researchers

The mission of our library media program is to ensure that students are effective users of ideas and information. This makes meaningful, ongoing collaboration with teachers essential. Creating opportunities for teamwork is a challenge for all school librarians. Online research investigations are an example of systematic, districtwide collaboration between school librarians, district staff, and teachers to facilitate more powerful research by students.

Online Research Investigations

How People Learn: Bridging Research and Practice is a foundational document for our Bellingham (Washington) schools. (***Editor's note:*** For this and other URLs, see Resources on p. 25.) It emphasizes the need for students to build on prior knowledge and construct their own meaning. Creating a common structure for inquiry is one of the strategies we use to assist learners. Student teams learn about an issue as they frame a response to a problem and analyze their learning and processing as they proceed. As teachers conduct multiple research projects of varying complexity throughout the year, they support students in cooperative learning, fact gathering, analysis, and synthesis. Students monitor their own progress so that teams get the assistance they need throughout the process.

Following the philosophy of the foundational document, our teacher-librarians partner with teachers to create, update, and teach Web-based research investigations in K–12 classes. Faced with a district focus on literacy and performance assessments, new social studies and science curriculum guides, new technology standards, and the challenge of engaging all students in more focused research, district teams of teachers and librarians are creating a bank of online research projects. Students in grades 3–12 are expected to complete at least two research projects a year using Jamie McKenzie's research cycle to guide the process. Projects start with a challenging question and end with a presentation of the solution or choice to the group. A Web-based module format enables students to engage in collaborative work, accessing the modules from school and from home. Teachers are supported by professional development, ongoing online dialogue, and continuous development of new resources.

Student teams use the self-paced modules, one module for each of the steps of the research cycle. They navigate through the projects in a linear fashion, but they can also navigate back and forth to the information they need. Web links are incorporated into the lessons, as are various charts, data gathering and decision matrix worksheets, and scoring rubrics. Depending on student age and teacher direction, students complete their work either electronically or by printing out the worksheets and using paper and pencil. All students in grades K–12 have network accounts and the ability to save their work in shared and private drives. Most projects require the final report to be a group presentation of a product produced electronically, whether it be a paper, slide show, brochure, or other form.

By Nancy Messmer

For teachers, most of the resources needed to complete a project are included in Web modules. Librarians assist teachers in working through the organizational challenges of leading student research teams to completion and figuring out workable schedules in classroom computer labs and the library lab. Librarians also set up file saving structures so student teams can save their work to a folder and access it when needed. Librarians might also assist in providing presentation equipment. A mutual debriefing of the project by classroom teachers and librarians is important for continuously updating and improving the projects. New suggestions are added regularly to the Teacher Tips portion of existing projects.

Staff project writers often work as a team, using a Word template similar to the Web format. They write all of the content for the various modules. A district team assists the writers and puts the projects into a district-created Web template using Dreamweaver and Contribute Web editors. Projects are posted on the district and school Web sites.

The structure of online projects supports students and enables them to make choices and build solutions to problems. Yearly technology performance assessments in grades 5, 8, and 11 mirror the structure of the online investigations and are part of annual school strategic planning. Multiple assessments are built into the projects to measure individual contributions and growth as well as group productivity and project completion. Students are assessed with rubrics measuring analysis, teamwork, and persuasiveness.

Inservice training for teachers about using online projects and creating new ones enables them to work with new ideas and processes as well as technology that may be challenging to them. Because the projects are online and are created along with the new curriculum guides, they are important vehicles for engaging students and teachers simultaneously in new learning.

Writing Online Research Investigations

Writing projects is not a trivial endeavor. It is difficult to come up with provocative, open-ended questions that require students to think and analyze and come up with a solution based on evidence. Teacher/librarian teams first work through a current project as learners. Then they analyze the structure of the projects from a teacher-designer's perspective. They learn more about McKenzie's research cycle and the challenges involved in designing immersive learning activities for students in an online mode. After the teacher learners experience the project from the inside, they walk through the structures built into the modules, including assessments, teacher tips, resources, and templates. They frame several challenging questions and scenarios, critiquing and expanding on these in small groups. Bellingham teacher-librarians lead the research initiatives in each school, in conjunction with principals and teachers. Projects are posted to the district Web site by a team of district staff and retired Bellingham librarians. Federal Title V and Title II Part D funds support the writing, editing, posting, and updating of the online research investigations.

Challenges across a District

Implementing the use of the research cycle across the district has been a long journey. In the mid-1990s, McKenzie and teacher/librarian teams taught the research cycle as part of a required course for all teachers. However, it was not until the district implemented new standards for technology and for social studies that the research cycle was adopted formally. Since 2000, both the K–12 Technology School Expectations and the K–8 Social Studies curriculum guides require students to complete at least one research project each semester using the steps of the complete research cycle. To support teachers in using their new curriculum guides, teams of librarians and teachers began writing online research projects. Bellingham staff teams created online projects keyed to curriculum content and goals for grades 3–9. Work continues on the development and use of a workable and up-to-date library of projects keyed to the curriculum needs of each grade level.

We created a Web-based format so the work of a small team of creators is shared with all other teachers of the grade level and can be updated regularly as needed. Teachers analyze and critique the projects as they finish them. Projects are written in appropriate language for students of each grade level and are designed to be guides for students as they work in teams with teacher direction. Online resources are linked and required library and classroom resources are listed so teachers and students have easy access to necessary resources.

Our vision is to enable student teams to wrestle with interesting problems using the same research steps year after year. It is our hope that students will comfortably use the steps of the research cycle in school when they are asked to do research and outside of school when they are asked to make decisions as community members and citizens. Students begin in primary grades to clarify and understand a research question, to figure out what subsidiary questions need to be answered, to make a systematic research plan, to gather, sort and sift information, to synthesize and evaluate, and to create an original response based on information and their own inventiveness.

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Librarians as Key Guides

All K–12 librarians are the technology coordinators for their schools, responsible for communications among teachers and technicians, classroom problem solvers, and district level decision makers. They are responsible for in-school professional development in the areas of technology and information literacy. They also create and maintain the school Web sites. They assist teachers in planning and teaching lessons in the library and classrooms and they serve on leadership teams doing school and district-wide planning.

Effective strategies involve consistent effort on the part of each librarian at each school, combined with support at the district level. We make a constant effort to grow good ideas at each school and to share them among schools. Teachers in classrooms grapple with multiple expectations aimed at increasing student growth and achievement. It is the responsibility of staff to link district initiatives, and make sure that all of the subject-area guides, professional development efforts, and school-level efforts are coordinated.

Next Steps

Although we have been working to implement the use of the research cycle for several years, the progress has been uneven. To boost the consistent use of the research cycle and computers as resources, our superintendent, Dr. Dale Kinsley, sponsored an expectation that all students in grades 3–9 will complete at least one research project this school year, as outlined in the District Technology Expectations. Principals are talking with teachers about student research projects and librarians are in demand as helpers and planners with teachers. District, state, and federal funds are being used to support staff learning, and the ongoing creation and improvement of online research investigations.

We recognize that we must continue to work on this initiative by:

- Continuing to build a library of projects, keyed to grade level curriculum
- Enhancing current projects to include more integration of cross-curriculum goals, skills, and products
- Designing an online template to guide students in individual research projects, following the steps of the research cycle
- Creating a primary grade version of the online research projects
- Creating a variety of shorter projects tied to curriculum goals for each grade
- Integrating the use of the research cycle and online templates as the high schools develop student guides for Senior Culminating Projects

Resources

AASL Information Power National Standards: http://www.ala.org/ala/aasl/aaslproftools/informationpower/InformationLiteracyStandards_final.pdf

Bellingham School District: http://www.bham.wednet.edu/

Bellingham Technology Plan and School Expectations: http://www.bham.wednet.edu/technology/techstd.htm

Jamie McKenzie's Module Maker: http://questioning.org/module/module.html

Jamie McKenzie's Research Cycle: http://questioning.org/rcycle.html

How People Learn: Bridging Research and Practice. National Academy of Sciences: http://books.nap.edu/html/howpeople2/ch2.html

Online research investigations: http://www.bham.wednet.edu/studentgal/onlineresearch/newonline/online.htm

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