

“Partnering with Users: Collaborative Methods for Digital Library Design”

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NSDL All Projects Meeting, Tuesday November 16, 2004

1. Who participated in our user-based designs?

- 1.1 Students (6th, 7th and 8th grade students, Youth aged 11-15, in grades 6-9, K-12, 6th, 7th grade students, undergraduate)
- 1.2 in-service teachers
- 1.3 pre-service teachers (all levels)
- 1.4 school library media specialists
- 1.5 classroom teachers

2. Why user-input is needed

- 2.1 to understand intended learners
- 2.2 to create/refine functional specifications for software, website design, resources, learning objects and content selection.
- 2.3 to identify most-liked navigation devices, search features, allow them to influence design, look and feel, and functionality.
- 2.4 to obtain early input on the design and the language of the user interface to see if they “get it”.
- 2.5 compile effective vocabulary for collections.
- 2.6 design and conduct testing for learning, usability, and debugging.
- 2.7 develop a workshop curriculum
- 2.8 develop models (of DL resources and tools on teaching and learning; of teacher as change agent)

3. Methods

3.1 Interviews

- 3.1.1 In-person, one-on-one interviews using a think aloud protocol as students surfed the Web.
- 3.1.2 Group interviews with students discussing our design ideas with students.

3.2 Surveys

- 3.2.2 Online site surveys
- 3.2.3 Paper and web surveys,

3.3 Focus groups

- 3.3.1 Small focus groups to discuss preferences.
- 3.3.2 Small focus groups to show the software to teachers and gain their comments and ideas.
- 3.3.3 Small student focus groups where they use the software. Typically, we videotape student usage of the software and interview students about different aspects of the software, from the perspectives of problems they encountered, things they like, usability issues, and what they learned from/about the learning activities supported by the software

3.4 Observation

Videotape analysis of student use

3.5 Literature reviews

3.6 Other or combination

- 3.6.1 In-person, one-on-one interviews (videotaped) using a think aloud protocol with questionnaire
- 3.6.2 Students reviewed websites
- 3.6.3 A youth design team, working with project staff for 4 months to co-design site presentation, layout and navigation
- 3.6.4 Design team feedback captured via audio and video.
- 3.6.5 Log file analysis and usage tracking (for usage behavior)
- 3.6.6 Middle-school workshops

4. What worked?

4.1 Methods

- 4.1.1 Use a variety of assessment approaches to assess interviews, observations, pre/post tests
- 4.1.2 Videotaping is useful to see how students use the software over time, but...(see below)
- 4.1.3 Focus groups should include mixed methods to keep students engaged
- 4.1.4 Log analysis may be useful in providing surprising data
- 4.1.5 On-site workshops make use of users' context
- 4.1.6 Practice interviews with kids to learn how to make participants feel comfortable.
- 4.1.7 Students should be interviewed early in the design process
- 4.1.8 Obtain frequent user input and integrate into tight cycles of development and evaluation

4.2 Organization and process

- 4.2.1 Communicate with teachers early and be consistently throughout the project
- 4.2.2 Employ high-school interns and undergraduate students
- 4.2.3 Establish partnerships with schools and professional associations.
- 4.2.4 Use team building activities so kids get to know each other
- 4.2.5 Mix peer groups and genders.
- 4.2.6 Maintain 1:2 or 1:3 ratio of adults to students.
- 4.2.7 Specify at the project start; meeting rules, expectations, roles of people, and commitments
- 4.2.8 Use stipends, timesheets, business cards, to emphasize accountability
- 4.2.9 Work closely with school officials who need justification for letting researchers into schools.

5. What didn't work

5.1 Methods

- 5.1.1 Getting a useful sample of students can be a challenge, e.g., student volunteers may be the "good" students, thus skewing analysis. Classroom sample best, but more complex logistically.
- 5.1.2 We sought diversity among students, but found far more diversity among differing cognitive styles than among various ethnic groups. It is difficult to get at these kinds of differences in sampling.
- 5.1.3 Some things are difficult to discern from video analysis – so use multiple data sources
- 5.1.4 Difficulty generalizing due to wide variety of teacher contexts

5.2 Organization and process

- 5.2.1 Videotaping can be disruptive, difficult, and cumbersome in a classroom environment
- 5.2.2 We waited too late to use audio and video to capture our process and project observations
- 5.2.3 Field research assignments were either forgotten entirely or produced little useful data
- 5.2.4 It may prove difficult to get some participants' buy-in
- 5.2.5 You may have to choose from among conflicting user desires
- 5.2.6 You will have to decide how to handle wide variability in teacher technology skills
- 5.2.7 Too much of a peer relationship between youth and adults led to discipline issues
- 5.2.8 Don't use non-computer based activities
- 5.2.9 A caveat: When working in schools, there are more "gotchas" to be aware of. Make sure you take care of all the little things that can crop up in schools, e.g.;
 - Students don't always get permission slips filled out and need some "encouragement"
 - teachers may change their plans and throw off your data gathering plans
 - video equipment may spring some glitches or students may jostle a video
 - school computer labs filtered out games and music sites, which we wanted to observe.