Collaborative Research: Quality Graphics for Federal Statistical Summaries  
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Explanation of supplementary budget for the Penn State project component,  
MapStats for Kids demonstration project  
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Statement of work to be undertaken

FedStats is a cross-agency Internet portal designed to help all Americans find statistical facts for making personal or business decisions, conduct research on a myriad of topics, or participate in public policy debates. This sub-project of an existing Digital Government project on Quality Graphics (dgQG) will develop a specific MapStats for Kids demonstration within FedStats. To do so, we will build web tools that integrate with the information system used to produce the current MapStats, with a focus on subject matters of interest to younger visitors. Work will be carried out in conjunction with the FedStats Technical team and the FedStats Task Force.

A primary focus for this demonstration project will be to create interactive web pages that provide statistical and geographic information in a manner that will engage a younger visitor's attention and interest. Information will be displayed in a manner that will encourage children to become active participants on the site as well as to provide them with a better understanding of the impact numbers can make on daily life (through the use of age-appropriate games, trivia questions, statistical facts, and other methods). A long-term goal, to which this demonstration project will contribute, is to address issues of both statistical and graphic / cartographic literacy through web applications that are fun for young web-site visitors to use.

A large body of research demonstrates that it is impractical to develop a “one-size-fits-all-ages” computer game or computer learning tool for kids. Web sites for use by young visitors must be sensitive to this issue. We will address age appropriateness directly by choosing two age groups, (e.g., 4-5 years and 11-12 years) and developing a prototype product for each. Both products will focus on the same problem context and associated statistical-geographical information, but be designed to appeal to each age range and to take advantage of their respective abilities and interests. This strategy will provide a solid base for exploring and documenting differences in web-based statistical and geographic information products needed for different age ranges. It will also provide a base for future expansion to different age ranges and kinds of information.

In addition to attention paid to age-appropriateness, the demonstration development team will select a focus for products that is matched to current national-level education curricula. Most states have adopted at least a portion of the national math, science, and geography curriculum standards. Map-based and graphical representations of federally produced statistics offer a range of possibilities for products that are at the intersection of these standards and, thus, that support an integrated approach to education across these subject areas.

The information representation components of the web pages will be created through the use of Macromedia's Flash software. Once initial demonstration products are developed, attention will also be given to exploring the potential of the Scalable Vector Graphics (SVG) protocol for future (extended) implementations. In addition, we will explore the possibility of extending the web-tools for different place collaborative use; i.e. where children, possibly remote from each other,
collaborate together via the Internet to solve problems or complete tasks (e.g., collaborative map-based games).

Development activities will be organized to progress from rough drafts through more finished products for web delivery. The early drafts will provide an opportunity for feedback by agency partners, for testing and evaluation by children, and for initial work to be done on interfacing the web applications with the existing FedStats web site. The project timetable is outlined below:

Timetable -- work will be carried out between Nov. 1, 2001 and August 15, 2002

1. November-December, 2001: investigate possible web-products that will meet project goals (that are age-appropriate, interesting to children of the targeted ages, address literacy objectives) and prepare an initial plan for products to be developed and implemented; develop at least one simulation of a potential web-application and distribute to collaborators for feedback.
2. January – May, 2002: develop and implement two demonstration products based upon age-appropriate cognitive abilities and learning goals, both focused on the same statistical and geographic problem context but targeted to young web-site visitors in different age ranges.
3. mid-May – June: solicit and synthesize feedback on demonstration products, use this feedback to refine and/or extend the products, investigate the potential to transfer future development to the Scalable Vector Graphics (SVG) protocol.

An important consideration in the development of the demonstration project is the need to ensure that the developed applications are portable to a variety of web environments (e.g., Mac as well as Windows, Netscape as well as Internet Explorer), and that they adhere to the requirements of Section 508 usability requirements relating to Federal web sites. Although the particular web tools proposed are targeted to younger visitors, it is anticipated that components of the resulting technology could be used in generating other types of statistical information displays for other website audiences. To facilitate this potential, software will be as modular as practical and close coordination will occur between the team developing the MapStats for Kids demonstration project and the broader dgQG development team (with its 8 current federal agency partners).