AccessData Workshop
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Evaluation Report
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Executive Summary

This report is intended to inform members of the AccessData Workshop Team for the planning of future workshops and reporting on the current workshop. The main points are listed below.

<u>Schedule</u>

❖ As in previous years, participants often had expertise in more than one of the five primary professional roles— curriculum development, data expertise, education, software tools, and scientific research. Education was the most commonly reported area of primary role at this workshop. Areas of other professional activities were fairly well-distributed among all five roles. Fewer people reported data and software tool expertise than in previous workshops.

❖ As in previous years, participants regard their team breakout time as the most valuable aspect of the workshop. Only a few people thought that even more time should be spent on the breakout sessions.

❖ Feedback on the talks was fairly positive this year; almost all participants thought the number of talks was just right. The Thursday talk (*Using Data to Improve Learning and Improve Teaching*) was particularly appreciated by attendees this year.

❖ Participants generally felt their teams worked very well together. Problems mentioned were fairly minor; the most common was a few people getting off-task.

❖ Respondents tended to think the workshop was very well balanced. There were slight indicators that overall, participants would like a bit more emphasis on education, curriculum, and hands-on learning.

❖ The Demo Session and Share Fair was fairly well-received. Its greatest value to participants was as an opportunity to network and socialize with others. It was moderately successful as an opportunity to learn about data access, tools, and education. A higher percentage of total participants attended this session than at previous workshops, possibly due to it being scheduled after the field trip instead of it being the first event of the first day.

❖ The Field Trip was hugely popular among those who attended it. Aside from a couple of requests for more scientific interpretation and one complaint of altitude side-effects, the comments were 100% positive. This was reinforced in the Final Survey, when 2/3 of the field trip participants selected it as one of the most valuable parts of the workshop.

❖ Overall, the Tool Time sessions were considered to be valuable. Some computer problems were reported for some sessions.

❖ The EdGCM Tool Time was very well attended and was also quite highly rated. Google Earth and PSICAT sessions were also highly rated for those who attended them. There appear to have been some technical issues that hampered the effectiveness of the IDV Tool Time.

❖ As has been seen in years past, the final report-out is not highly rated, although interview comments indicated that (at least for some teams) having this deadline was helpful in keeping the process moving along.

<u>Data Use</u>

❖ Many responses to the Data Use Survey were similar to responses in past years.

❖ Attendees successfully used data for many different learning goals, especially Personal exploration and learning.

❖ Weather/climate observations of precipitation and temperature were the most commonly used types of data, followed by Satellite imagery, Climate/weather model simulation output and Sea surface temperature data. This is similar to previous years, although the use of Satellite imagery was somewhat less prevalent this year.

❖ Image, Text/ASCII, Google Earth, and GIS were the most commonly used formats, which is similar to the previous year.

❖ NOAA, USGS, and NASA were the main data sources attendees had used. Within NOAA, NGDC, NCDC, NODC, and NWS were the most commonly used sources. Again, this is similar to results from 2008.

❖ About half of respondents reported that reformatting and subsetting data are significant obstacles to their data use. These results are nearly identical to those from 2008. The most commonly reported problems were with data formatting.

❖ As in 2008, participants reported that end-users most commonly performed Visualization/imaging, Graphing, Statistics, and Plotting/mapping procedures on the data. Statistics and Basic math were also selected fairly often.

❖ Three-quarters of respondents had been unsuccessful using a dataset in the past. This is a lower percent than reported in previous years. Respondents cited the primary barriers as being Discoverability, Poor documentation, Unusable file formats, and Too much time required to use effectively.

❖ Preferred methods of instruction for learning about data use were Step-by-step instructions, Examples, and Online tutorials. These results are similar to those from previous years.

Workshop Logistics

❖ The facilities for the meeting were rated very highly. The food and housing were rated average to excellent; from comments, the food was considered to be quite good but the housing (in dorms) was rated slightly less well (but still was considered quite adequate by most).

❖ The website, Wiki, and printed materials were all considered useful. The Wiki was rated slightly lower than in previous years; from various comments, it seems that participants are more aware of web conferencing alternatives that they like better than the Wiki used at the workshop.

❖ The online registration was rated highly by practically everyone.

❖ The interviews with team members showed a high degree of satisfaction with the workshop and the process of working within their team to complete their chapters. The frustration at not making progress that appeared in previous years was not noted this year. Telecons (especially with workshop facilitators), deadlines, and effective Curriculum Developers were credited for helping the teams work towards their goals. Several people did suggest software to use for chapter development other than the workshop Wiki.

Recommendations

Workshop

- ❖ The field trip was a great success and probably contributed to the high attendance at the evening Share Fair. Beginning with such an event is an excellent plan.

- ❖ Continue the current format of the Demo Session and Share Fair, perhaps encouraging more posters or presentations among participants.

- ❖ Continue Tool Time sessions in the current format, perhaps extending the time slots slightly. If there's some way to do a full dry-run in the computer labs before the sessions, that would help prevent some of the technology issues that have come up in some sessions. Providing participants ahead of time with the software they need in a bullet-proof format is very helpful.

- ❖ Pre-workshop activities appear to be very effective. Allowing teams to self-select their team members works well and seems to encourage pre-workshop progress. Finalizing team members as early as possible allows as many as possible to become acquainted and begin work on their topics and tools before the workshop.

- ❖ Continue to provide active support from AccessData team members; the pre-workshop telecons were regarded as very effective this year. Post-workshop activities should include a timeline and deadline for completion of the chapter as well as post-workshop telecons with workshop team members if needed.

- ❖ Having someone on each team who has been through the chapter development workshop before seems to be very helpful. Assigning experienced Curriculum Developers and facilitators is helpful.

- ❖ Networking remains one of the most highly valued aspects of the workshop. The field trip and Share Fair both provide valuable time for social interaction among participants.

- ❖ The current number and level of keynote talks seems well-received. One possibility, suggested at several workshops over the years including this one, is to have a K-12 teacher give one of the presentations, giving first-hand experiences of using data in the classroom.

Data for Educational Use

- ❖ Data providers should consider four primary barriers to educational use of their data—discoverability, poor documentation, unusable file formats, and the need for too much time to use the data effectively.

- ❖ Often-used formats are Image, Text/ASCII, Google Earth, and GIS. Data managers may want to consider providing these data formats for their educational data users.

- ❖ To enhance educational use of their products, data providers and tool developers should consider providing step-by-step instructions, examples, and online tutorials to their users.

Introduction

This report provides information to AccessData Workshop organizers to help them understand the degree to which the meeting (as perceived and experienced by participants) met goals and to inform planning for future workshops. Presented below are a description of the conference; the methods by which the evaluation data were elicited, compiled, and analyzed; information on the participants who responded to the surveys; and a presentation of responses to survey items. The Appendices include the evaluation instruments and the workshop agenda.

The goals of the AccessData project are to

- Increase the availability of and accessibility to high-quality data-rich educational materials and
- Increase communication among professional roles to facilitate educator and student use of Earth science datasets.

The website for AccessData is http://serc.carleton.edu/usingdata/accessdata/index.html

AccessData Workshops bring together a wide range of professionals who have a stake in promoting the use of scientific data in educational settings--Earth science data providers, data access and analysis tool experts, scientists, Curriculum Developers, and educators. To reach the project goals, participants work together in the workshop process to explore and address issues regarding data use. Participants are chosen for their contributions of data, tools, or scientific and educational expertise needed for the development of a series of Earth Exploration Toolbook chapters.

The 2009 workshop was held at Colorado College in Colorado Springs, Colorado. There were forty-two participants, each assigned to one of eight teams. Pre-assigned roles in the teams included a Group Facilitator and Curriculum Developer. Assignment of these roles was intended to allow the teams to be as productive as possible during their time at the workshop. Sessions for the workshop were held in various rooms in one building on the campus with the exception of the Tool Time sessions, which were held in a building across the street.

In addition to the team sessions, there were two keynote presentations, two hands-on lab sessions (Tool Times), a pre-workshop field trip, and an opening night Demo Session and Share Fair. The full agenda is provided in Appendix II.

Evaluation Procedures: Data Gathered and Analytical Methods

Data informing this report were collected through a series of four surveys (see Appendix I) and observations by the evaluator. The Data Use Survey gives the workshop team insight into the participants' current experience of using scientific data for educational goals. The Thursday and Friday Surveys were reviewed at the end of each day to check for real-time adjustments that might be necessary for the workshop. The Final Survey provides a summary overview of each participant's experience of the workshop. The following describes the format of each survey:

- Data Use Survey. Distributed with registration materials and collected during the first session. This survey included eleven questions (eight multiple choice with open-ended option; one multiple choice; one yes/no with a follow-up multiple choice with open-ended option; and one yes/no with open ended follow-up).
- Thursday Survey. Administered at the end of Thursday. This survey included nine questions (three multiple choice with open-ended option; two multiple choice; one Likert; two yes/no with open-ended follow-up; and one open-ended).
- Friday Survey. Administered at the end of Friday. Seven questions (three multiple choice with open-ended option, one Likert, two multiple choice, and one open-ended).
- Final Survey. Seventeen questions (one multiple choice, three multiple choice with open-ended option, four open-ended, one Likert, and eight Likert with open-ended option).

Results from each survey are reviewed in this report, with the daily and Final Surveys combined in one section due to their overlapping topics. The results of Likert, multiple choice, and yes/no questions were processed in Excel and are presented in figures. Open-ended questions were categorized and coded for dominant themes and are summarized within the text of each section. Direct quotes are given as bullets, formatted in italics.

The evaluator was introduced to participants at the start of the workshop and the importance of the evaluation process was explained. Surveys were distributed to participants by the evaluator in scheduled sessions and time was allotted for participants to complete the surveys before leaving the session. This methodology is helpful in maximizing response rates.

Participant Data

Response rates to the four surveys by workshop professional role are summarized in Figure 1.

Each team is ideally composed of at least one representative from each of the five professional roles (Curriculum Developer, Data Representative, Educator, Scientific Researcher, and Software Tool Specialist). However, the role designation assigned by the workshop facilitators is not always the primary role that participants list in the surveys. At this workshop, each team had five members except EdGCM, NSIDC/NCAR, and UAF, which had six each.

Variations of the role responses among the different surveys may have been due to some participants filling out the one survey and not another; it may also have been due to people reconsidering their role over the course of the workshop or some folks leaving early on some days (since the Thursday, Friday, and Final Surveys were administered in the last session of the day).
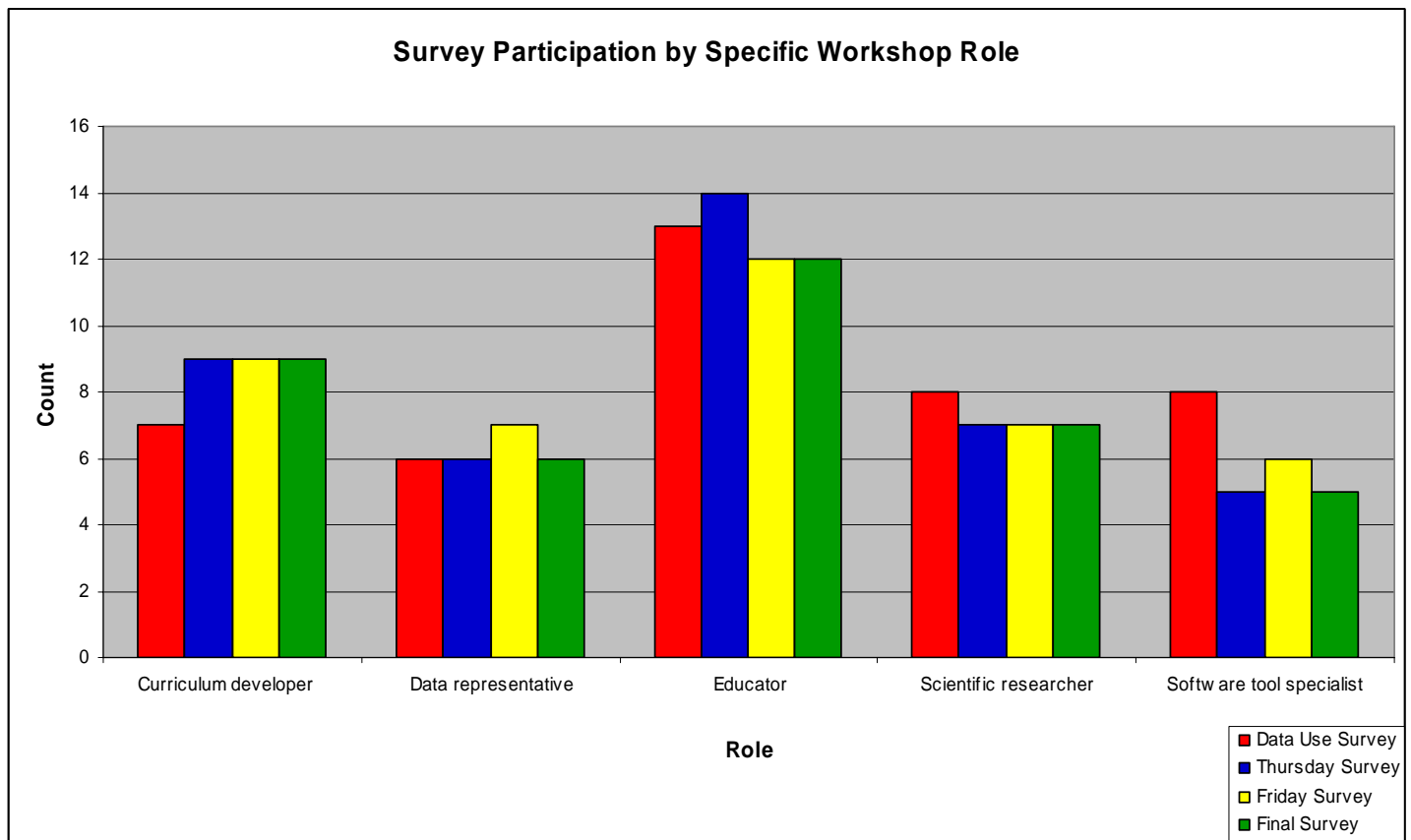

Figure 1. Number of respondents to each survey, grouped by professional role.

Many people have expertise in more than one professional area, so expecting survey respondents to select their primary role in the same way that workshop organizers had in mind may be unrealistic.

Table 1 shows the response rates for each survey and each professional role, with the percent participation for each survey based on the total number of participants (46).

Response rates were sufficient to provide valuable data. All surveys were well responded to, with response rates ranging from 87% to 96% (Figure 2). The response rates are slightly better overall than for previous AccessData and DLESE Data Services Workshops.

Response rates to the Data Use Survey were very high. The survey was completed by all but two team members and was the highest response rate to this survey for any of the annual workshops. The final survey response rate was slightly lower than last year; four team members did not complete the survey.

Response rates for individual questions did vary since some people left some questions blank.

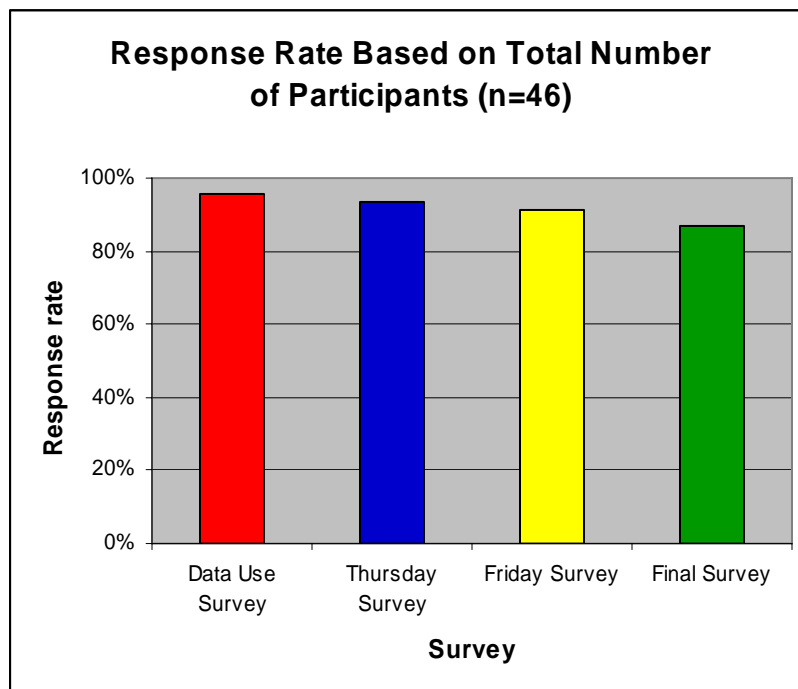| Table 1. Comparative response rates by role and survey.								
	Curriculum Developer	**Data Representative**	**Educator**	**Scientific Researcher**	**Software Tool Specialist**	**Other**	**Total**	**Percent of total attendees (n=46)**
Data Use Survey	7	6	13	8	8	2	44	96%
Thursday Survey	9	6	14	7	5	2	43	93%
Friday Survey	9	7	12	7	6	1	42	91%
Final Survey	9	6	12	7	5	1	40	87%
Average	9	6	13	7	6	2	42	92%

Figure 2. Percentage of attendees responding to each survey.

Professional Roles: Educator was Slightly Over-Reported

There were two professional role questions in each survey. The first asked for their primary professional role at this workshop (Figure 3).

As in previous workshops, Educator was the most commonly reported primary professional role even though numbers of the five roles should have been approximately even (eight). There seemed to be consistently fewer Data Representatives and Software Tool Specialists than would be expected.
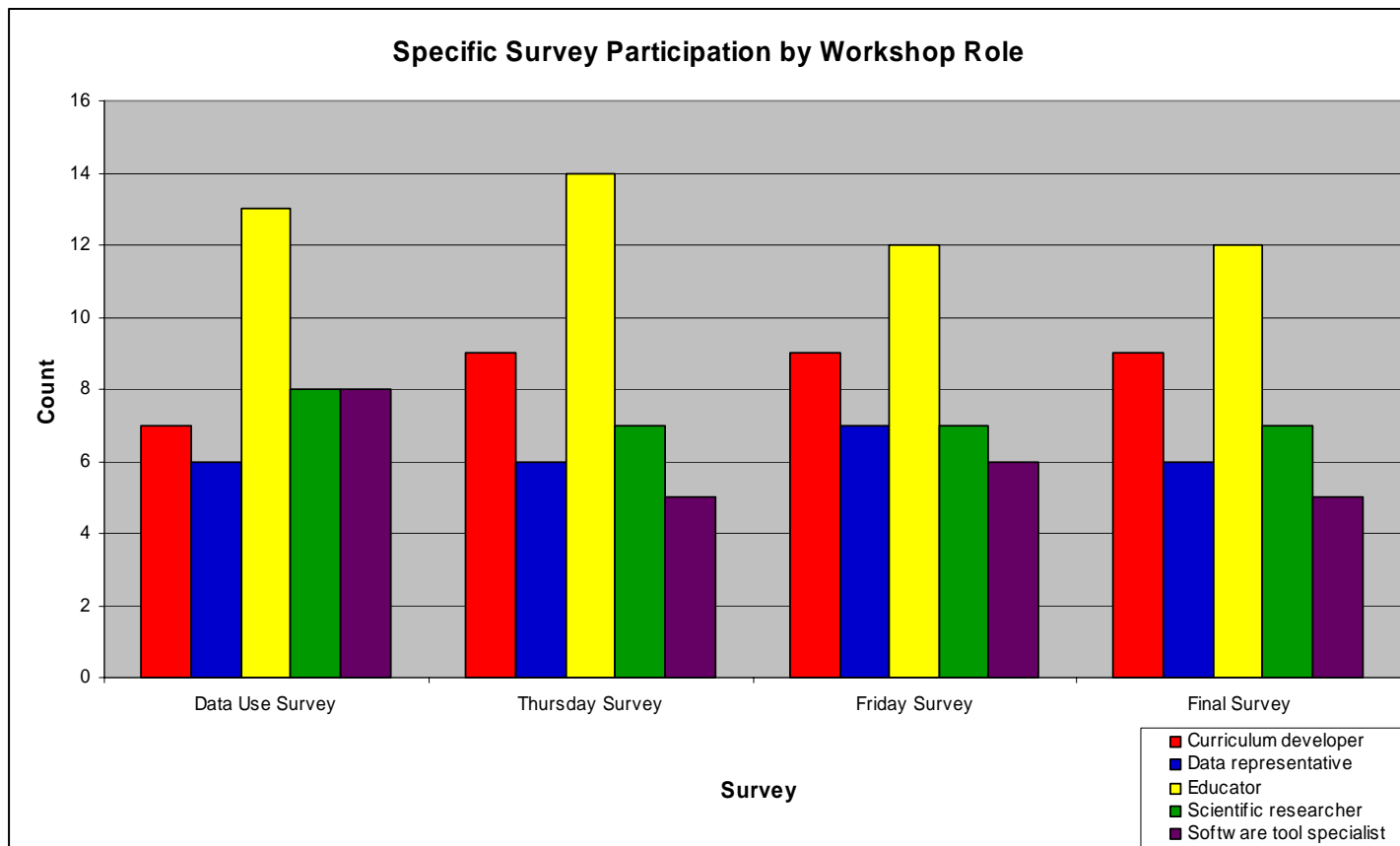

Figure 3. Workshop roles grouped by survey.

The second professional role question asked for other professional activities that respondents participate in. Results are displayed in Figure 4. **The results show a wide variety of professional activities by attendees.** Well over ten respondents to each survey selected Curriculum Developer, Educator, or Scientific Researcher as part of their professional activities. Data Representative and Software Tool Specialist selections ranged between five and seven for each survey.
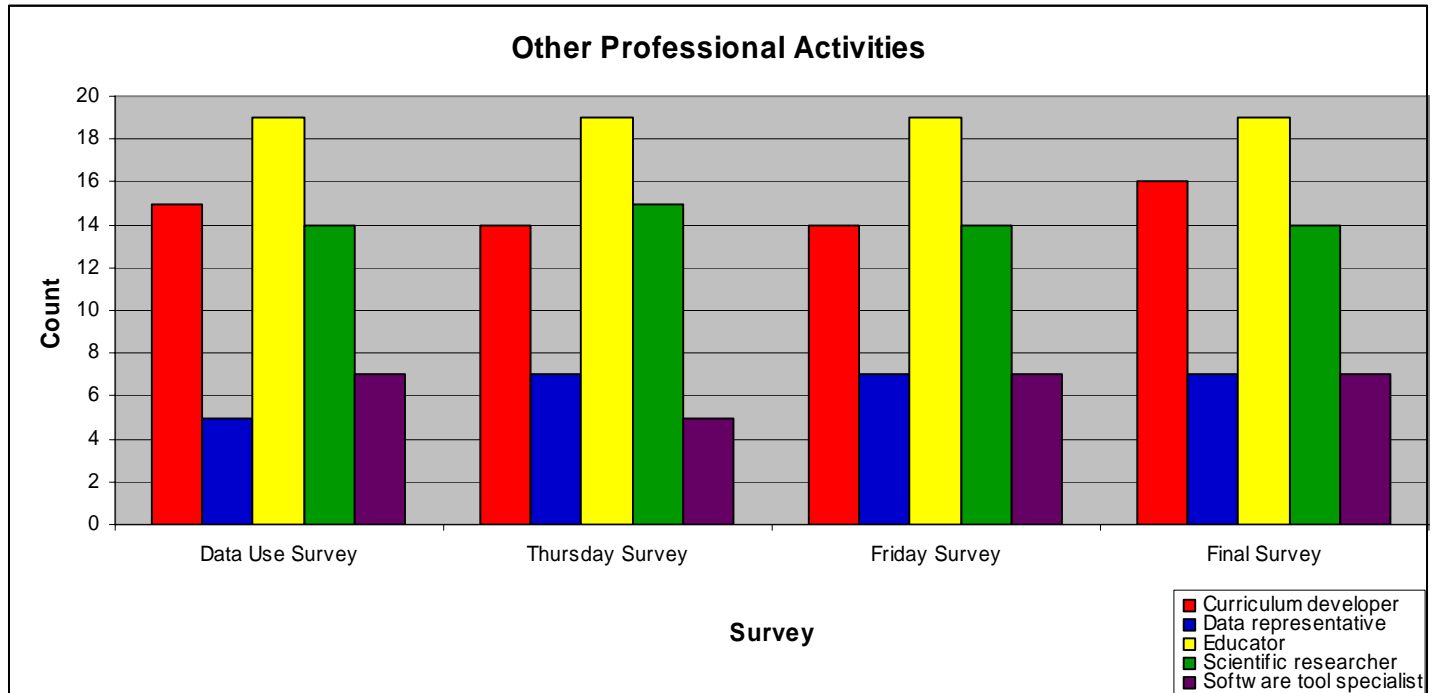

Figure 4. Other activities indicated by attendees.

Professional expertise was well distributed among the teams.

Respondents were asked for their work team as well as their primary professional role and additional activity areas.

Primary Professional Role Distribution
Data from the Final Survey were disaggregated by team to assess the distribution of expertise among the teams. Data from the Workshop Role and Other Professional Activities are combined in Figure 5, showing total expertise by team.
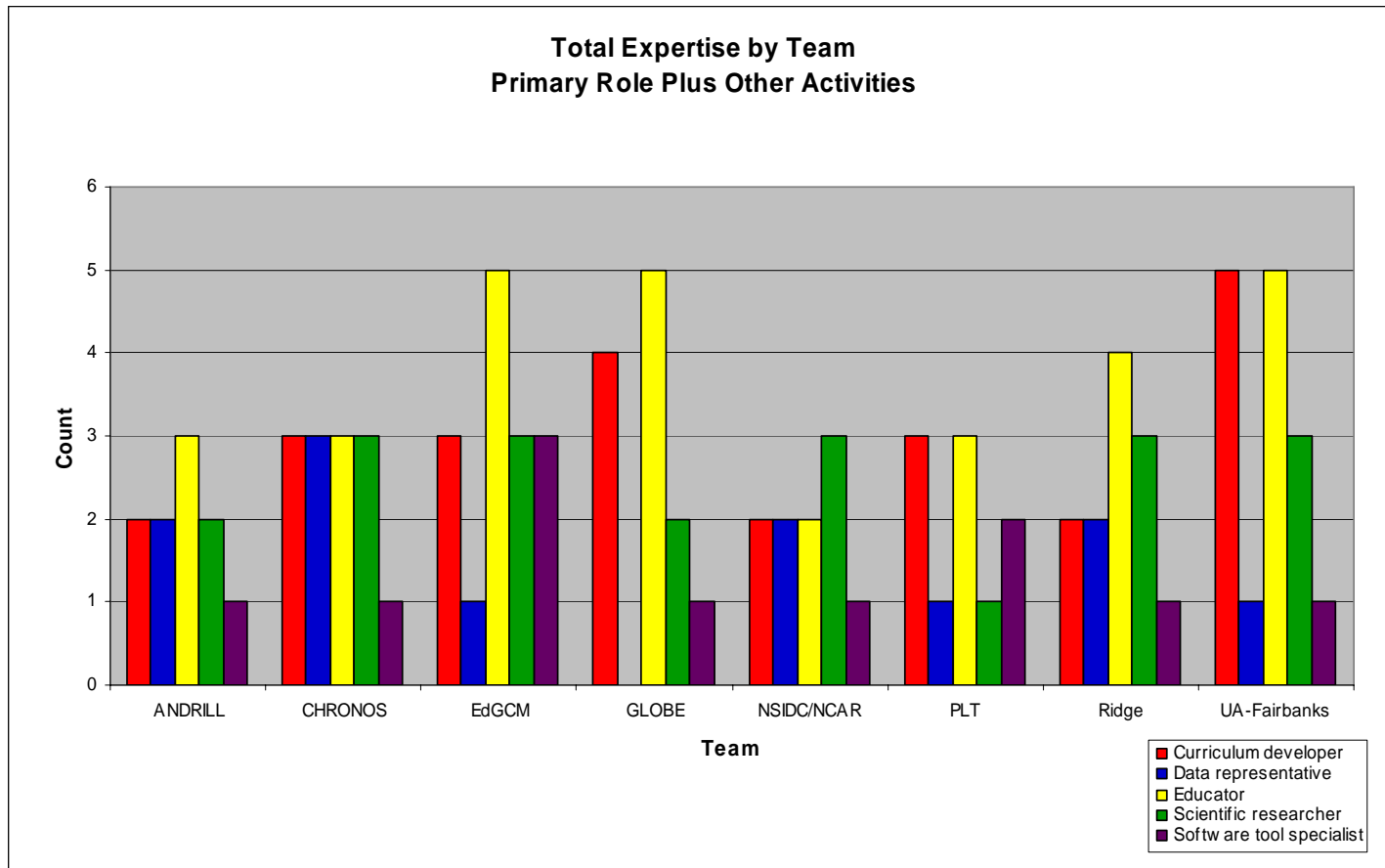

Figure 5. Total expertise by team indicated by respondents to Final Survey.

Based on the data from the Final Survey, the GLOBE team lacked anyone who professed expertise as a Data Representative, but all other teams had someone with experience in each of the roles. However, one GLOBE team member did not complete the final survey.

Data Use Survey

There were 44 respondents to the Data Use Survey.

Question 1 identified the respondents' team. Questions 2 and 3 addressed the attendees' professional role and activities. The previous section of the report summarizes these findings over all four surveys. Responses to the remaining questions are given in this section, including disaggregation analysis by participants' workshop roles.

Question 4 asked about learning goals with successful use of data in educational contexts. Respondents selected from ten learning goals and could pick more than one answer (see Figure 6). Respondents selected Personal Exploration and Learning the most often. All categories but one were selected more than fifteen times; the least chosen category was Meeting Science Standards.
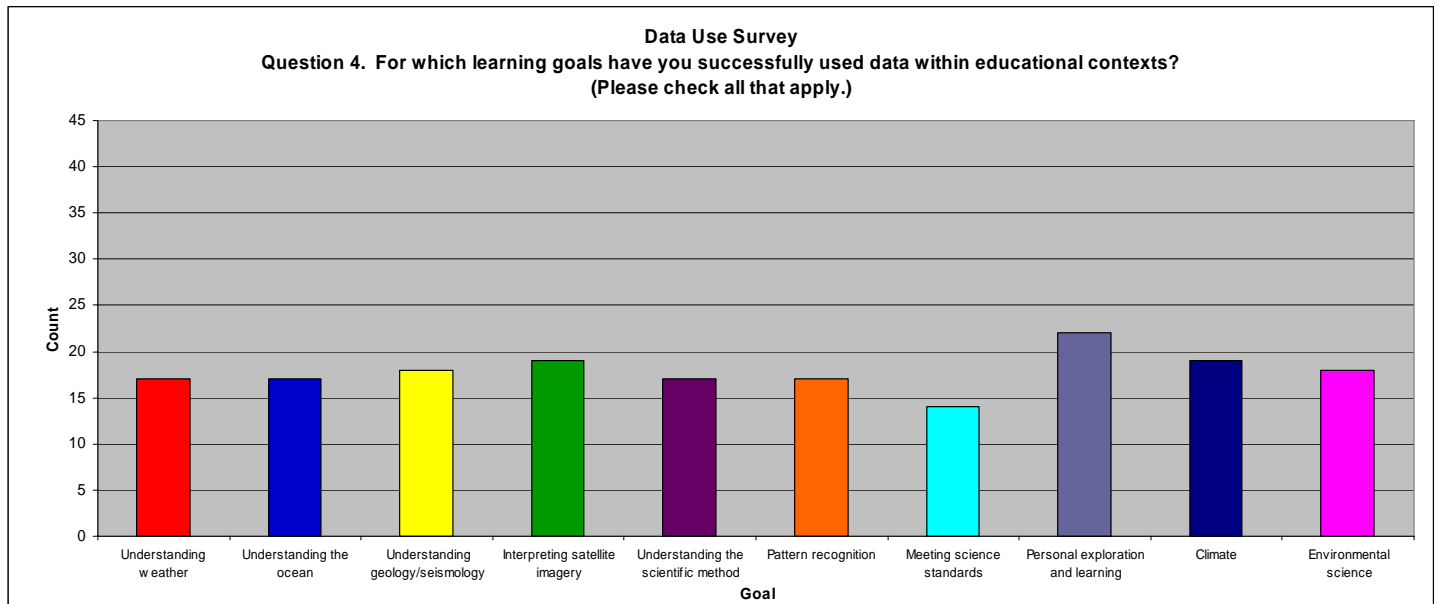

Figure 6. Learning goals that respondents have successfully used data for in educational contexts.

Other learning goals participants listed were the following:

- *Forest Succession; Composition*
- *Water quality data as it relates to atlantic salmon habitat.*
- *Population growth - exponential functions*
- *Human impacts i.e. genetic isolation of population and water quality, affects from salt, toads in winter*
- *Mineral resources, water as a resource*
- *Multi disciplinary science*

Responses to Question 4 are shown in Figure 7 disaggregated by participants' workshop role. **A minimum of three Educators and Curriculum Developers had used data for each learning goal listed and at least three Scientific Researchers had used data for all goals except Meeting Science Standards.**
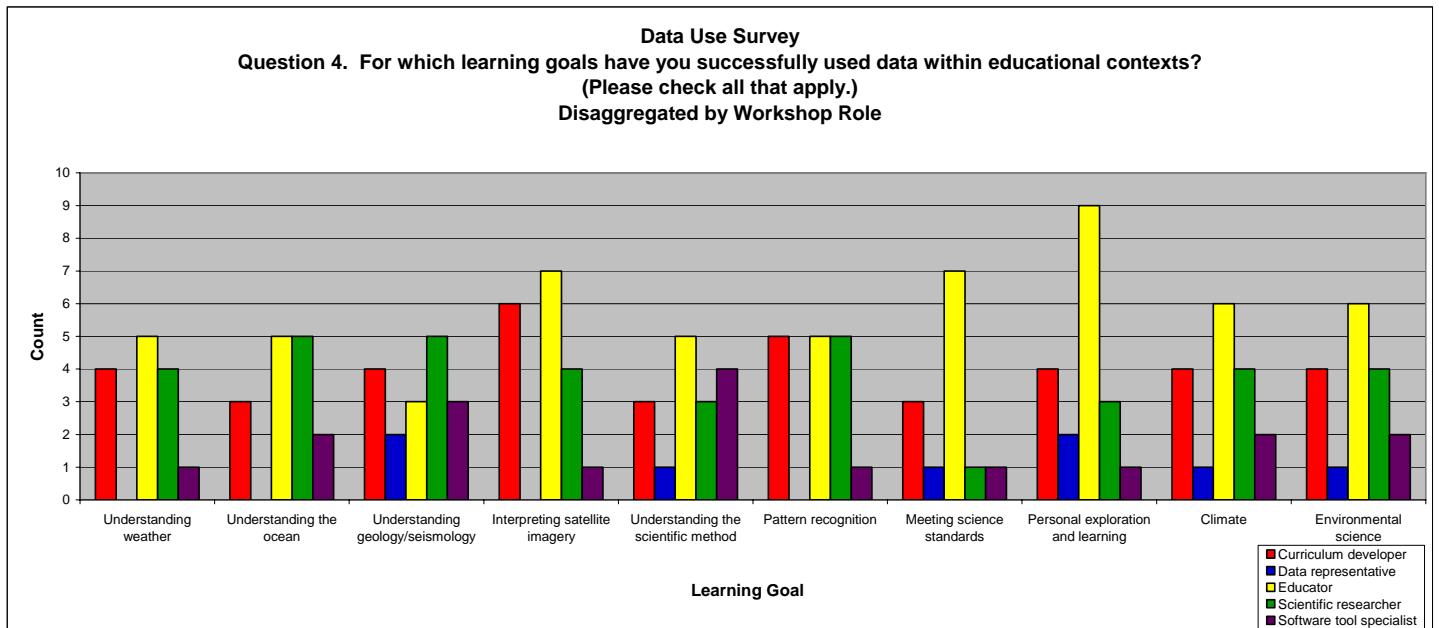

Figure 7. Learning goals that respondents have successfully used data for in educational contexts, disaggregated by respondents' workshop role.

Weather/Climate Observations of Participation and Temperature were the data most commonly used successfully.

Question 5 asked what types of data respondents had used successfully; they could pick more than one category. The results are displayed in Figures 8a and 8b. **The results are very similar to those from workshops in 2006-2008, although the use of Satellite Imagery was somewhat lower than in previous years. Weather/Climate Observations of Precipitation was selected 25 times, while Temperature was chosen 24 times. Satellite Imagery was third at 22.** Similar to previous years, Climate/Weather Model Simulation Output and Sea Surface Temperature were also very popular.
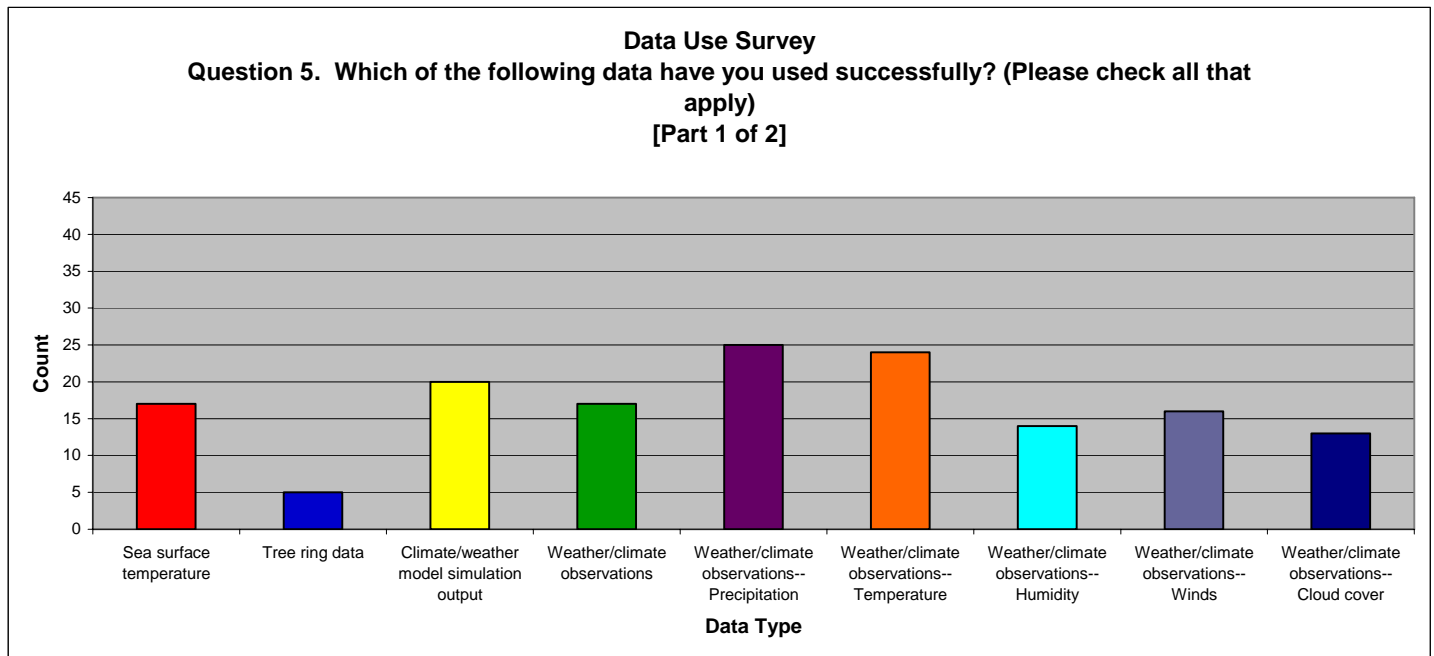
Data Use Survey
Question 5. Which of the following data have you used successfully? (Please check all that apply)
[Part 1 of 2]

Figure 8a. Specific data types which have been used successfully by respondents.

Data Use Survey
Question 5. Which of the following data have you used successfully? (Please check all that apply)
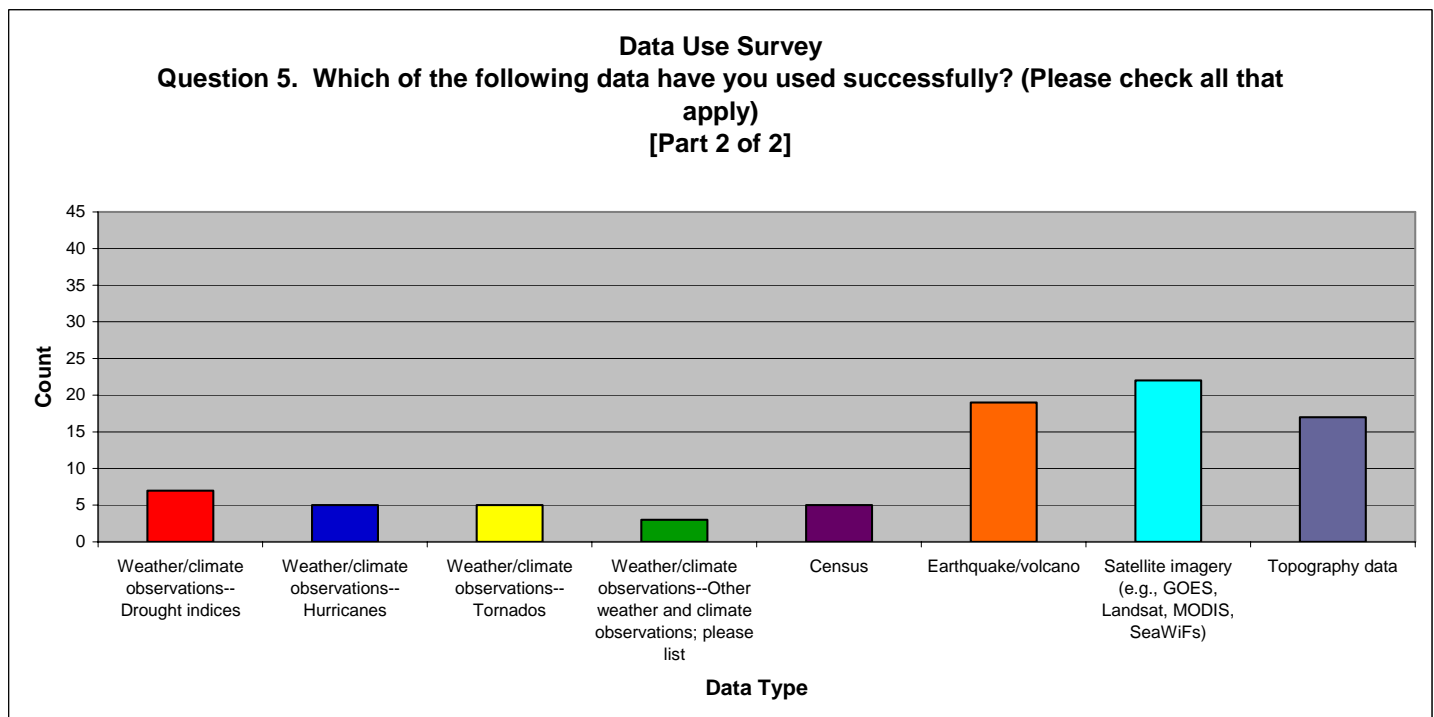**[Part 2 of 2]**

Figure 8b. Specific data types which have been used successfully by respondents.

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Other data types mentioned by respondents included the following:

- *Core Imagery*
- *GIS*
- *Bathymetry, seafloor images*
- *Biology, ecology, chemistry, microbiology*
- *Geochemistry*

Responses to Question 5 are shown in Figures 9a and 9b, disaggregated by participants' workshop role. Trends of use were fairly consistent across the roles with the exception of the Data Representatives, who selected very few or no instances of data use of any type. Tree ring data were only used by Curriculum Developers and Educators.
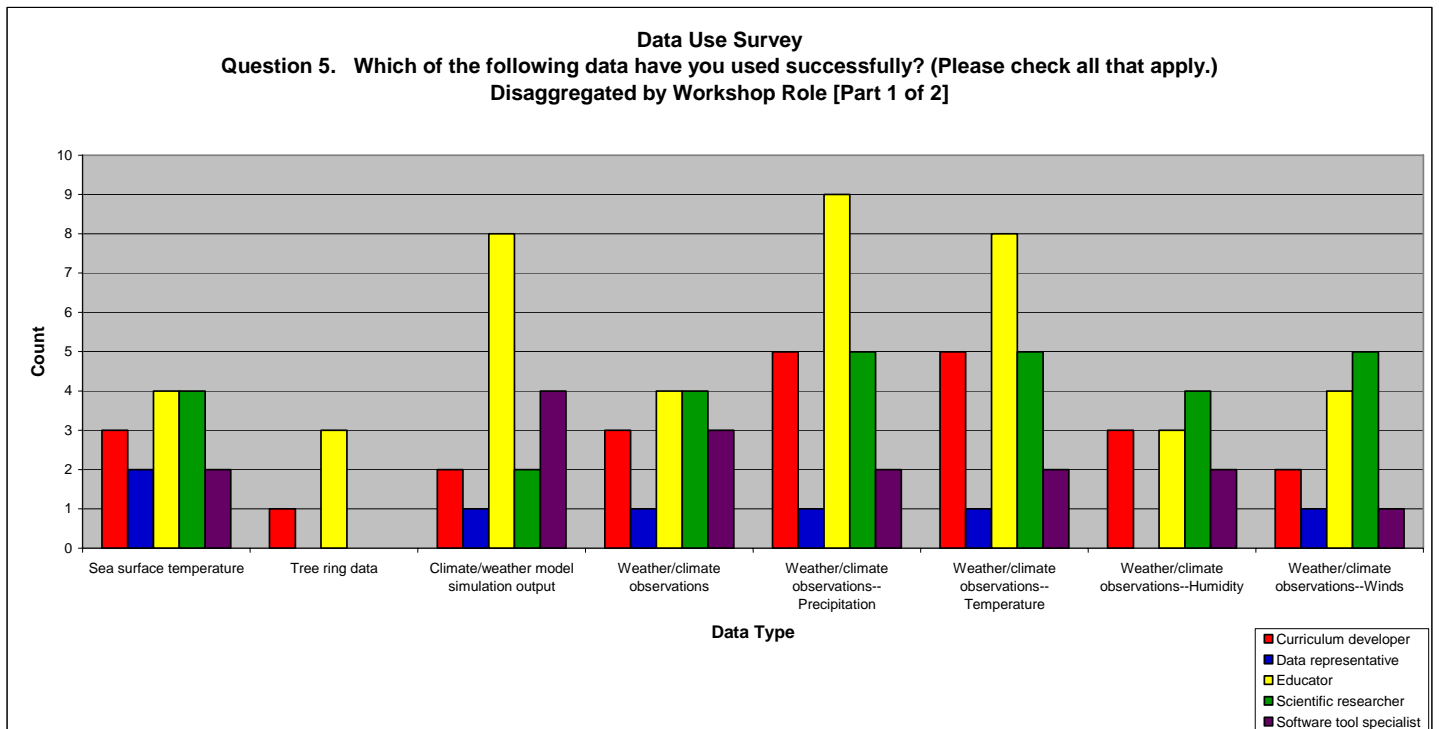

Figure 9a. Specific data types which have been used successfully by respondents, disaggregated by respondents' workshop role.
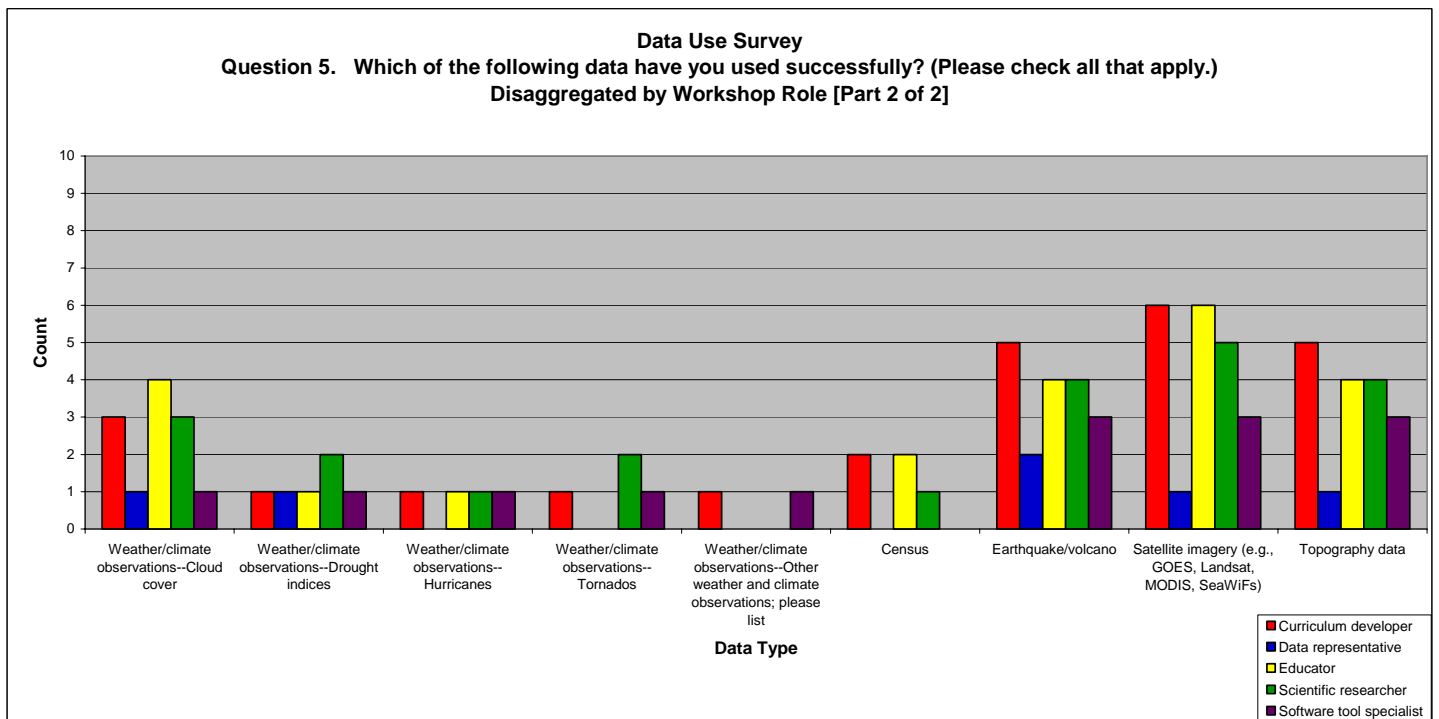

Figure 9b. Specific data types which have been used successfully by respondents, disaggregated by respondents' workshop role.

Question 6 asked participants what data formats they had used successfully; they could select multiple formats. Figure 10 shows the responses.

Image, Text, Google Earth, and GIS were the most commonly selected data formats. These results were similar to those from the 2008 workshop data.

Data Use Survey
Question 6. Which of the following data formats have you used successfully?
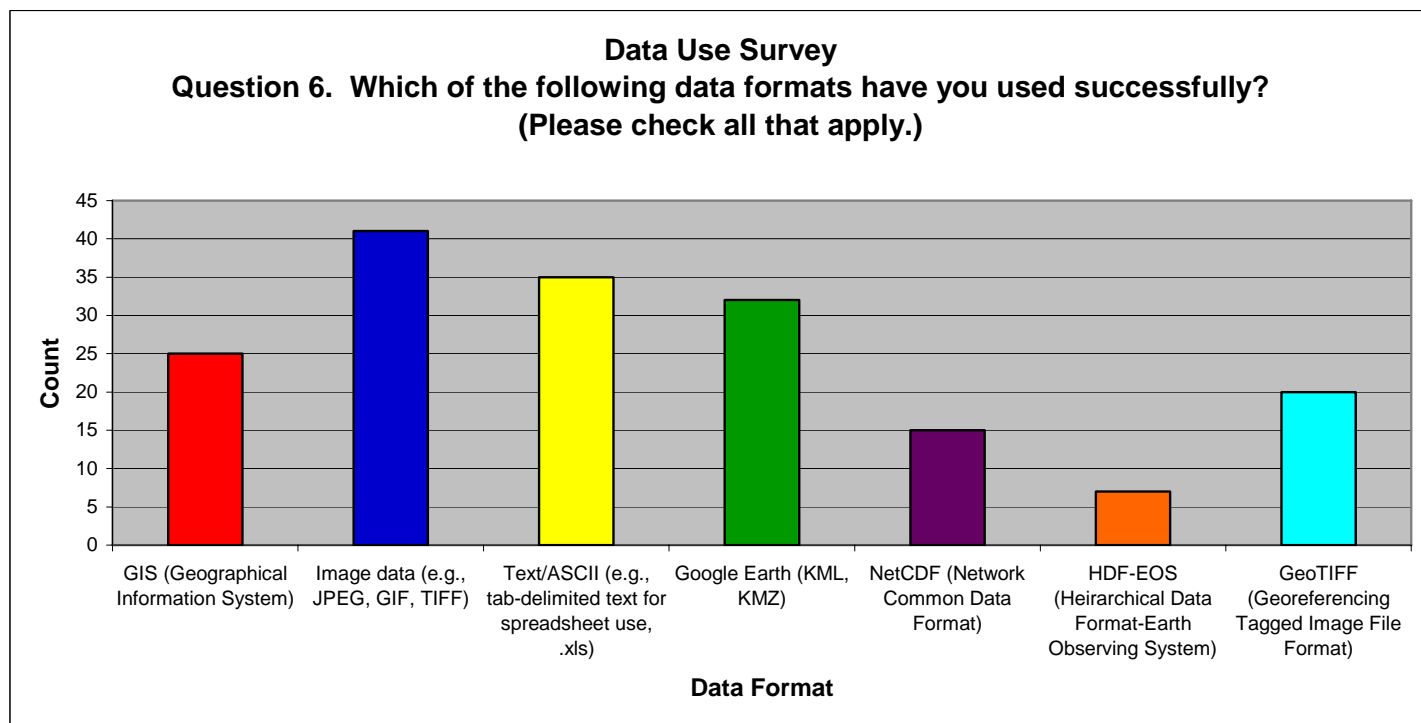**(Please check all that apply.)**

Figure 10. Data formats successfully used.

Other formats listed by respondents included the following:

- *I work with all these formats. However that is from an IT side/POV not in education.*
- *HTML*
- *MCIDAS area files*
- *geojpg; CEOS; pdf; MS Liz; etc.*
- *Image J, Nethogs*

Responses to Question 6 are shown in Figure 11, disaggregated by participants' workshop role. Trends were fairly consistent across the roles. However, NetCDF and HDF-EOS were not used as much as the other formats among Curriculum Developers and Educators; similarly, fewer Educators used GeoTIFF than the other roles. Only one Data Representative reported using GIS formats. These results are similar to those seen in previous years.
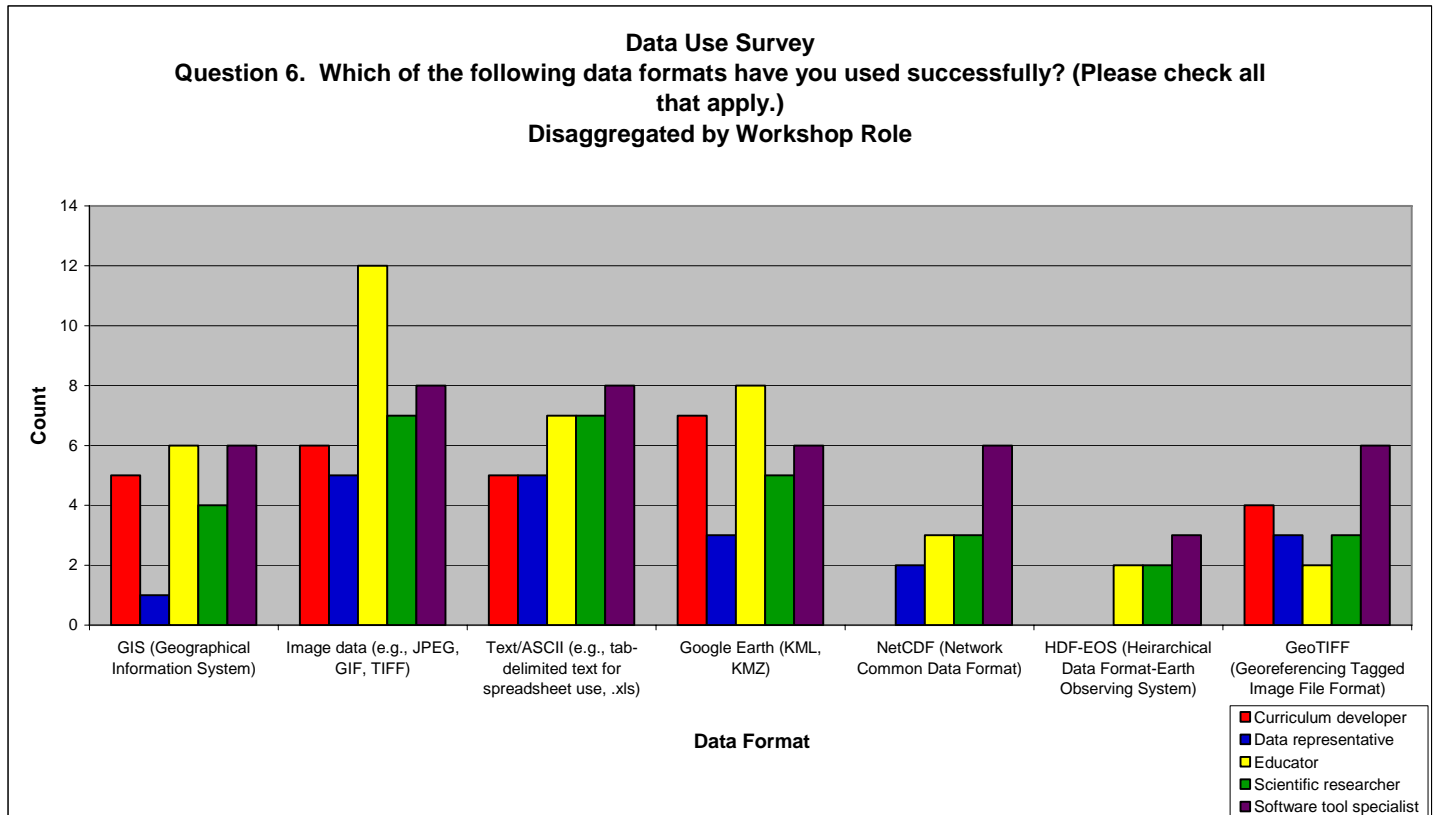

Figure 11. Data formats successfully used, disaggregated by participants' workshop role.

Question 7 asked participants what data sources they had used more than once; they could select as many as they wanted to. Figures 12a and 12b show the responses. The results were similar to previous years.

USGS and NASA data were the most commonly selected individual data sources. The four NOAA sources (NGDC, NCDC, NODC, and NWS) combined received more selections than either USGS or NASA, however. NCAR and EPA both were selected more than 15 times.

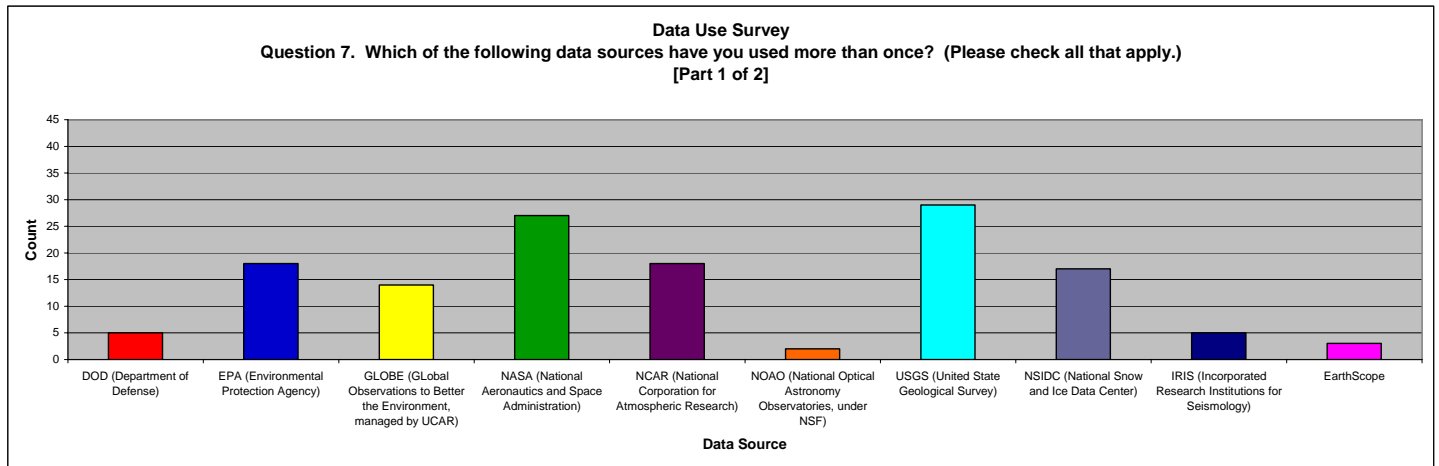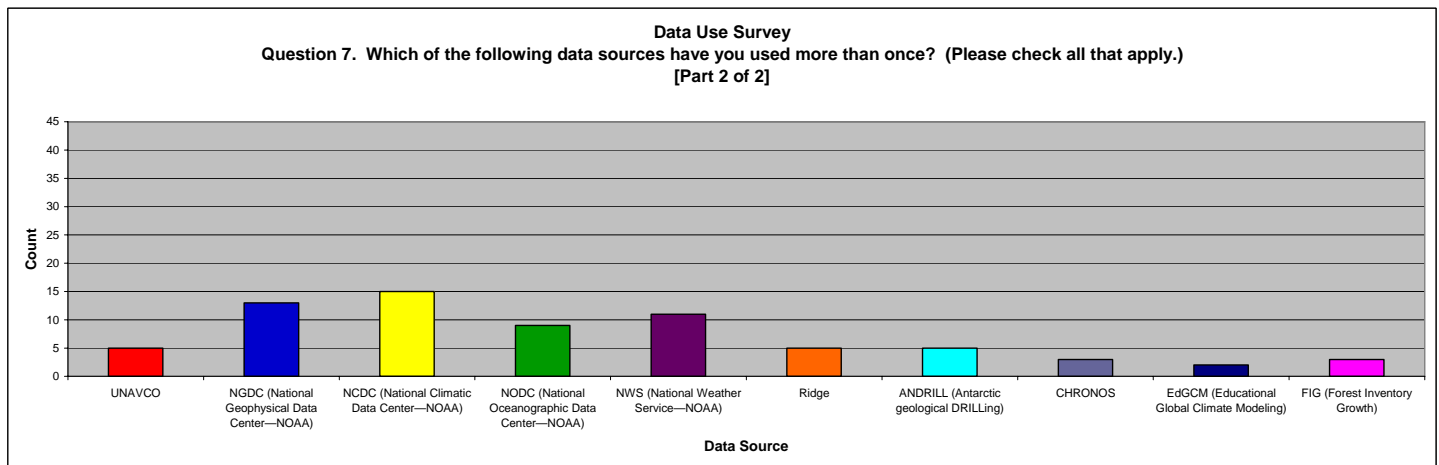Figure 12a. Data sources used more than once.

Figure 12b. Data sources used more than once.

Other sources listed included the following:

- *Again I work with these as sources in work flows not in education.*
- *UniData*
- *Northern Research Station, Forest Inventory, FIDO, Mapmaker 2.0;3.0, G-Forest; SOLE; COLE; Disturbed WEPP*
- *NOAA, WHOL*
- *MGDS, Ridge 2000 DataPortal*
- *GLOVIS; GINA; AGDC; HARP; ASF*

Responses to Question 7 are shown in Figures 13a and 13b, disaggregated by participants' workshop role. Educators were the main respondent group that used EPA, EarthScope, IRIS, and FIG data. No Educators or Curriculum Developers reported having used NOAO, Ridge, CHRONOS, or EdGCM data. Only NASA, NCAR, USGS, NSIDC, NCDC, and NWS data had been used by respondents from all five roles.
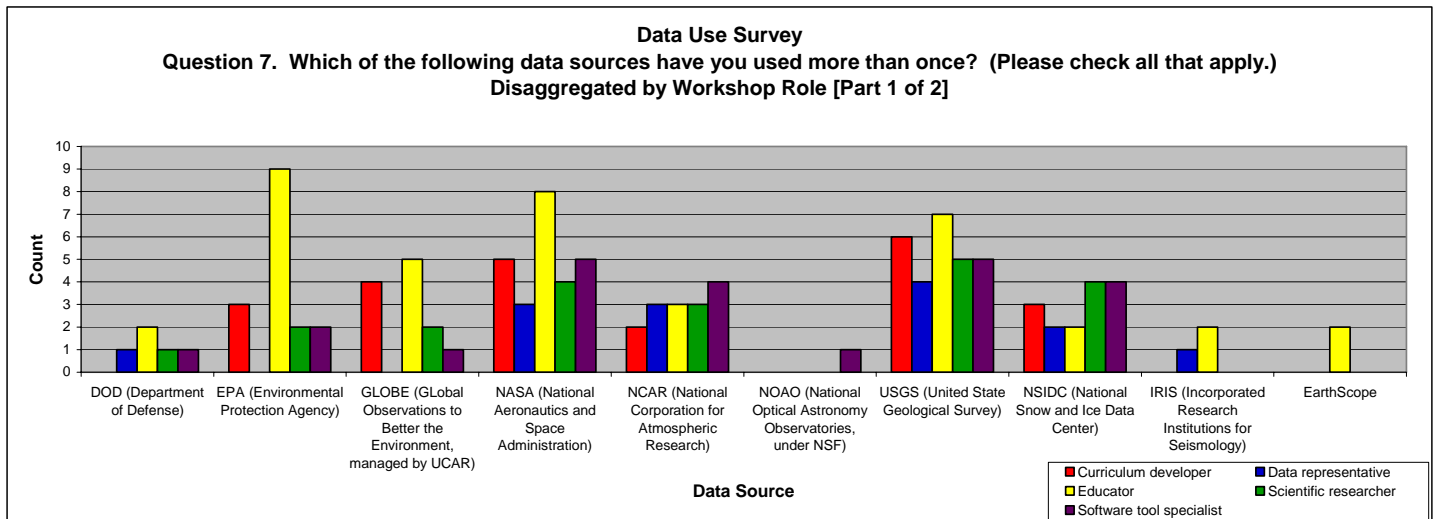

Figure 13a. Data sources used more than once, disaggregated by respondents' workshop role.
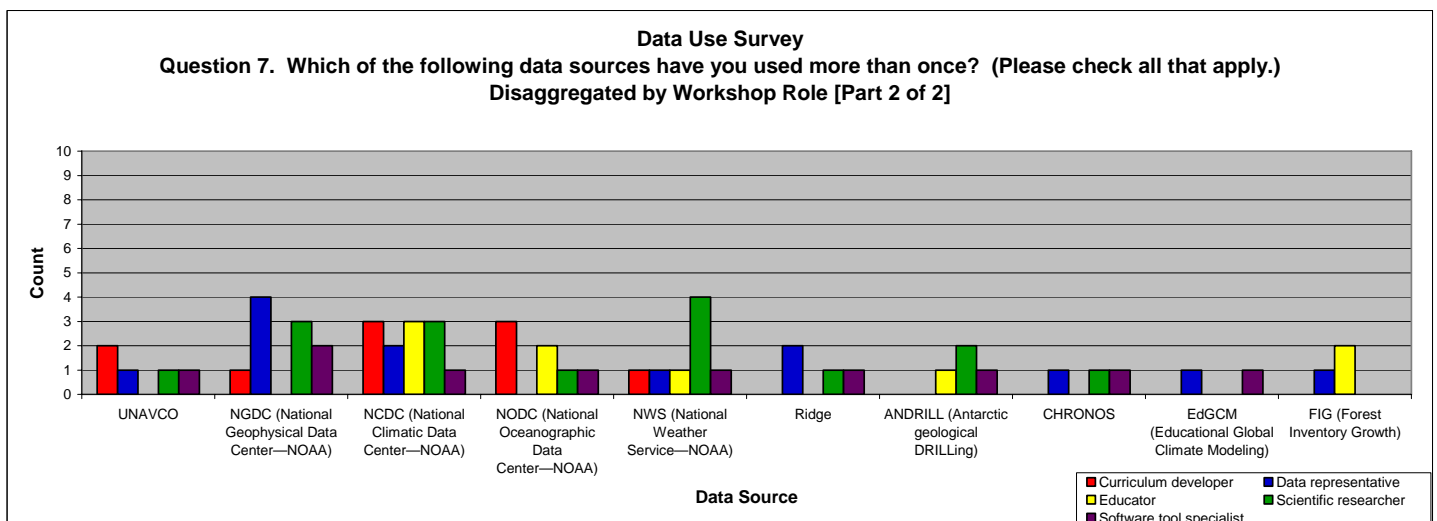

Figure 13b. Data sources used more than once, disaggregated by respondents' workshop role.

Question 8 asked participants if the tasks of reformatting and subsetting data are significant obstacles to their use of data. Of the 43 respondents, 22 said "Yes" and 21 said "No" (see Figure 14). These results were very similar to those from the previous year's workshop.
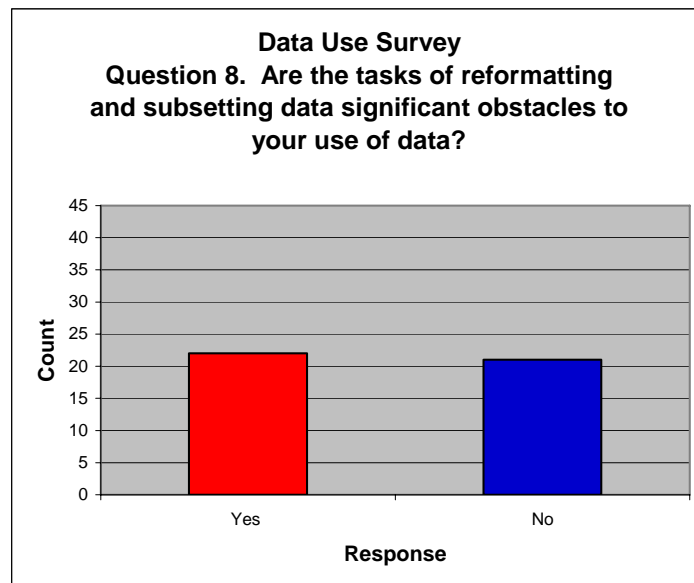

Figure 14. Responses to whether reformatting and subsetting
data are obstacles.

If respondents answered Yes, they were asked what would be helpful in overcoming these obstacles in an open-ended question. Format issues were the most common topic reported.

Seven people had issues with formatting; they wanted standard formats or noted the need for software to do reformatting. Four people commented that they wanted better support, examples, or directions. Four said they needed more practice and experience. The full replies were as follows:

- *Haven't done it before.*
- *More use of XML or RDF.*
- *It depends on the data.*
- *A more standardized format that works with basic spreadsheet of database software.*
- *Programming help or better software to do reformatting.*
- *Standard format to seen on widely available & easy to use software.*
- *More tools such as MRT web that accomplish the above goals w/out the need for so*
- *Data in ready to use formats.*
- *Practice and clear practical directions that teachers can use with their students.*
- *More programmers.*
- *My group at work is in charge of formatting & subsetting data since we write portals to distribute data.*
- *Format transitions. Good date documentation.*
- *Guidelines, examples, directions w/ o.f. datasets*
- *Experience/Practice*
- *Practice, application and purpose*
- *Without a firm understanding of the simulation of the data it's hard to know what /if something can be eliminated and what is essential.*
- *Templates, examples*
- *Need more guided practice and support.*
- *Searchable documentation.*
- *Making data available in standard formats.*

Question 9 asked what data analysis procedures participants' end-users or learners performed on data. They could select as many as they liked. Figure 15 provides a summary of the responses.

End-users were most likely expected to use Visualization/imaging, Graphs, and Plotting/mapping procedures on data. These results were very similar to those gathered in 2008 for this question. Statistics and Basic math were each selected by more than twenty respondents as well. Slightly more respondents had learners using Graphs than reported in 2008. Responses in all other categories were similar to the previous year.
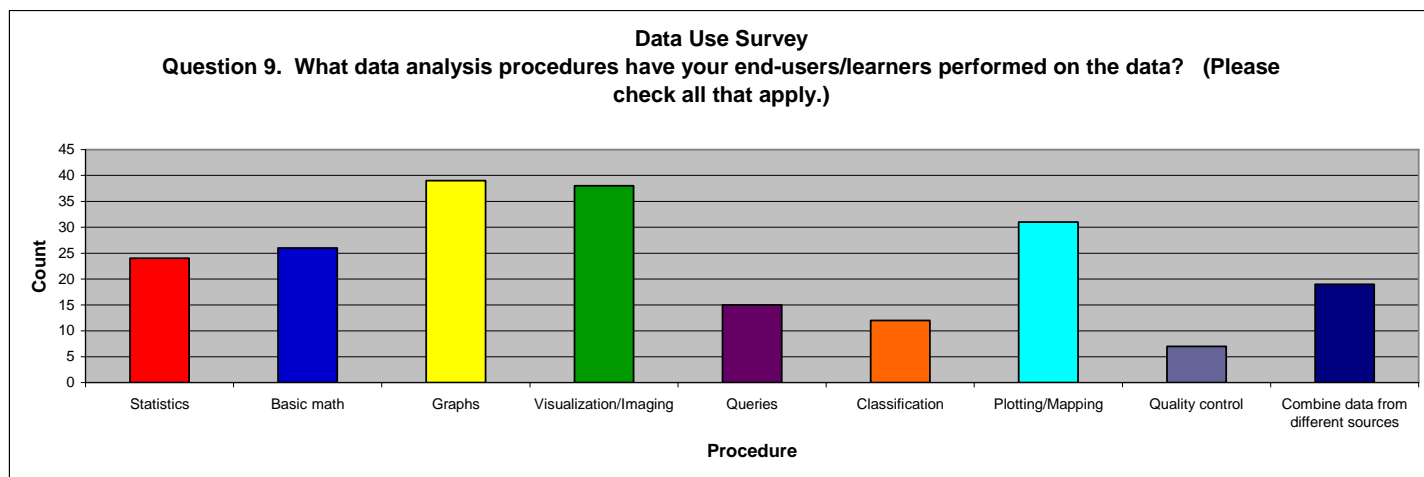
Figure 15. Data analysis procedures performed by end-users or learners.

Other analysis procedures mentioned by respondents were the following:

- *Weather Forecasting*
- *Data Collection (GPS)*
- *Comparing forecast with observed data*

Responses to Question 9 are shown in Figure 16, disaggregated by participants' workshop role. Responses were similar for all roles.
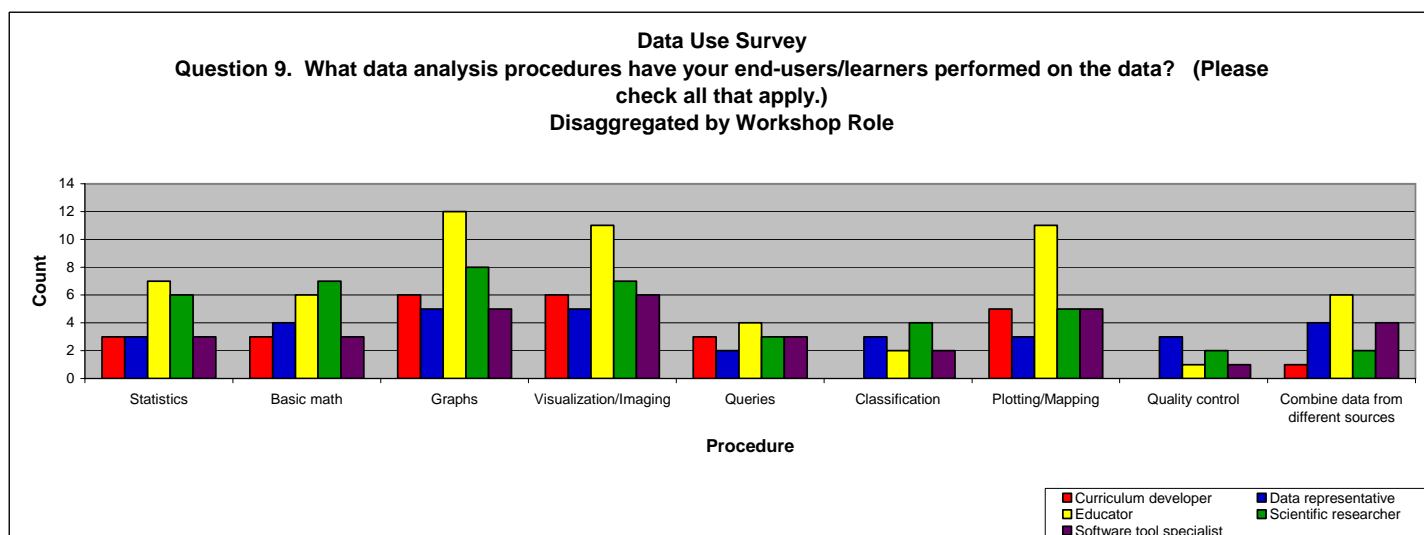

Figure 16. Data analysis procedures performed by end-users or learners, disaggregated by respondents' workshop role.

Question 10 asked participants if they had made any attempts to obtain and use data sets that were NOT successful and, if so, what barriers they encountered. Figures 17a and 17b display the barriers encountered.

Thirty-one out of forty-one respondents had been unsuccessful using data in the past. Discoverability, Poor documentation, Unusable Formats/Unknown File Extensions, and Too Much Time Required to Use Effectively were the most commonly cited barriers to use (15 or more responses each). Dataset was incomplete, Broken links, Did not have access to required software, and Dataset too large were all mentioned by over ten respondents as well. Terminology/acronym problems, Proprietary restrictions, and Training on use is not available were mentioned by more than five respondents.

These responses were compared with those from the 2008 workshop and were found to be very similar. When adjusted for the total number of responses (136 in 2008 and 144 in 2009), there were slight increases in Discoverability, Incomplete datasets, Broken links, and Hardware unavailability, and slight decreases in Documentation problems, Bandwidth problems, Format problems, and Proprietary restrictions.
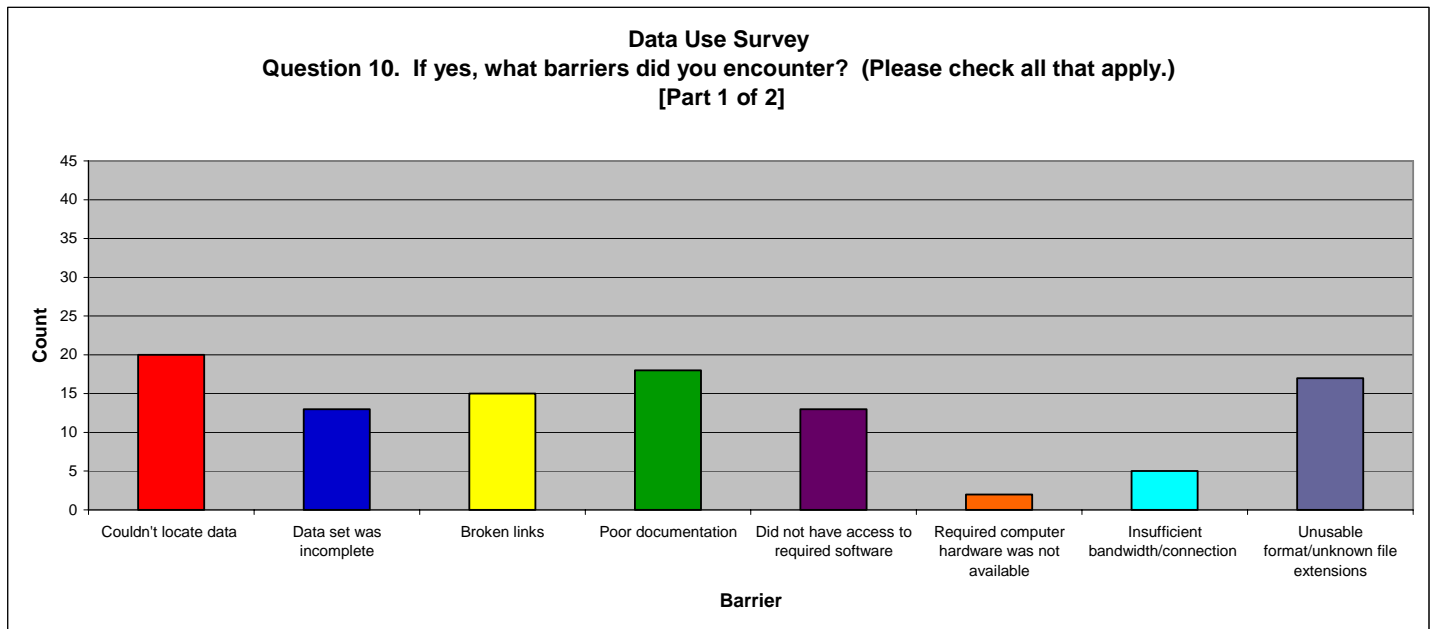
Figure 17a. Barriers encountered when participants were unsuccessful in accessing data sets.
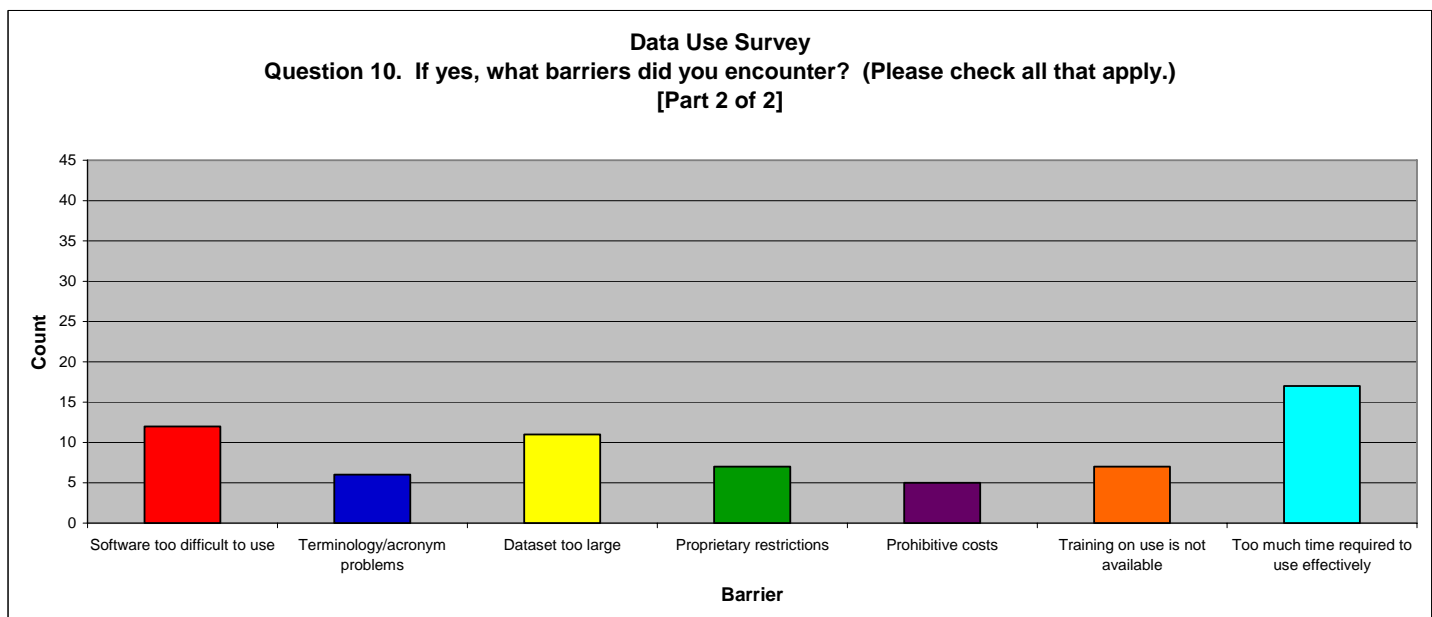
Figure 17b. Barriers encountered when participants were unsuccessful in accessing data sets.

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Two additional comments were offered by respondents; they mention specific discoverability and formatting issues as follows:

- *Too many steps to get the data in a usable format.*
- *New at this & need to I.D. data sources & retrieval*

Responses to Question 10 are shown in Figures 18a and 18b, disaggregated by participants' workshop role. Only Educators and Curriculum Developers cited problems with Computer hardware, Insufficient bandwidth, and Terminology problems; these two groups most frequently cited Discoverability issues, Broken links, Software limitations, and Time requirements as barriers. At least two people from each role selected Documentation as a problems, and at least one from each role mentioned Discoverability, Incomplete data, Format problems, and Dataset size as barriers.
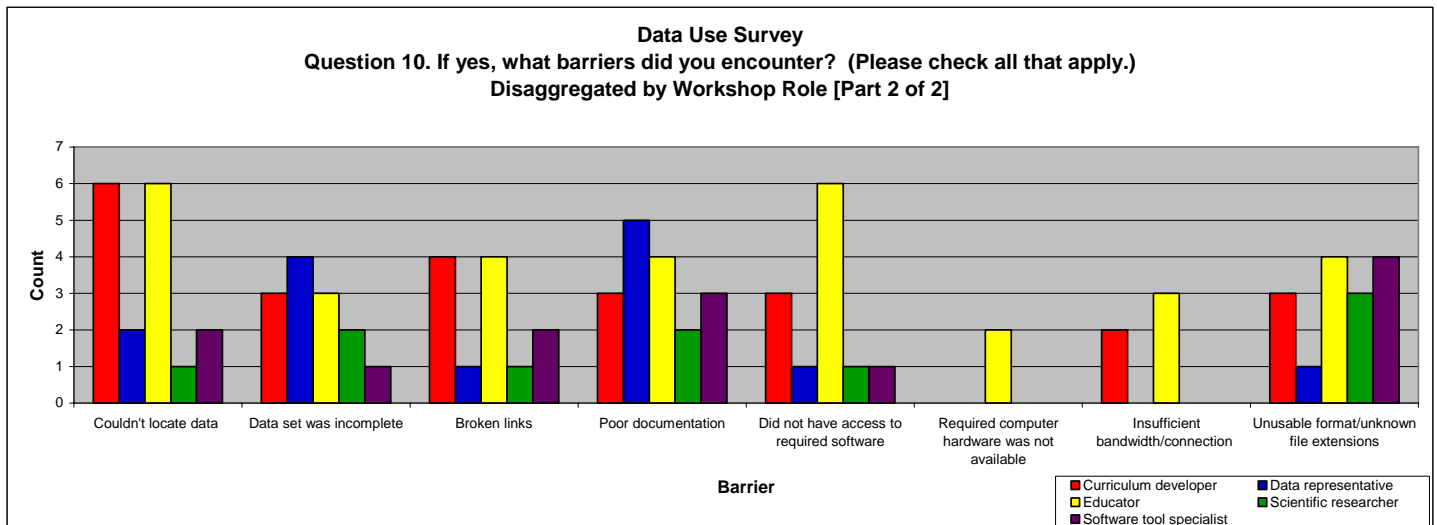
Figure 18a. Barriers encountered when participants were unsuccessful in accessing data sets, disaggregated by participants' workshop role.
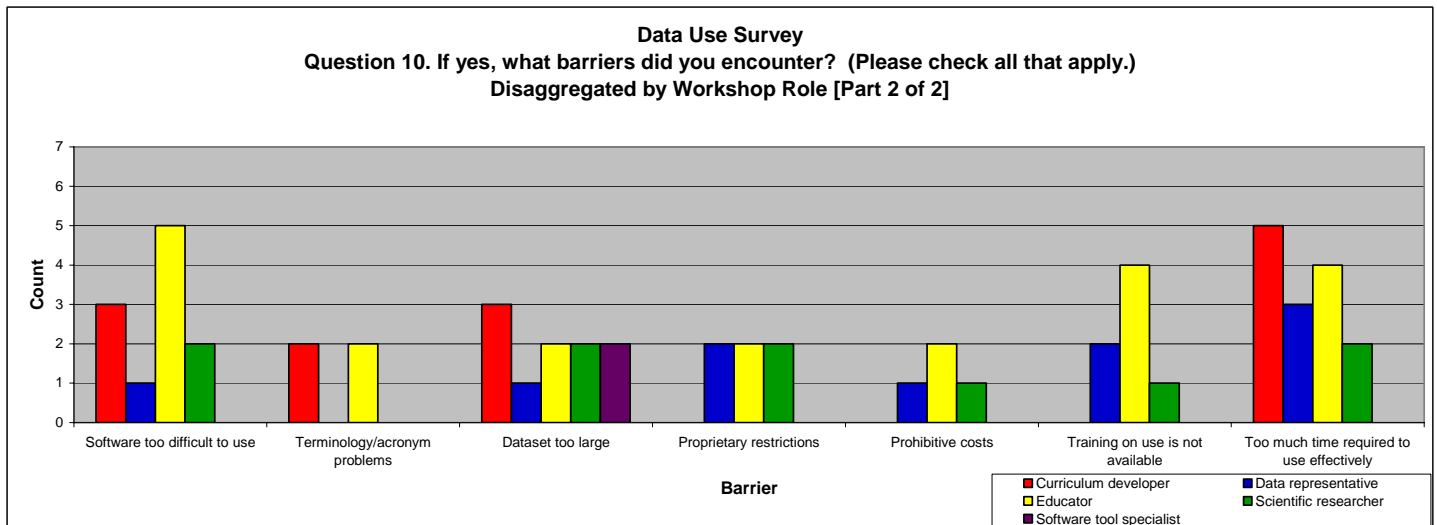
Figure 18b. Barriers encountered when participants were unsuccessful in accessing data sets, disaggregated by participants' workshop role.

Question 11 asked participants what types of instruction or support are most helpful to them when using specific data sets. Figures 19a and 19b display the responses.

Similar to the previous year's data, Step-by-step instructions and Examples were the most popular methods of instruction selected. Online tutorials were also highly ranked. Nobody selected Facebook. Compared to 2008 surveys, selections of Documentation were down and Face-to-face workshops were up.

Data Use Survey
Question 11. What types of instruction or support are most helpful to you when using specific data sets? (Please check all that apply.)
[Part 1 of 2]
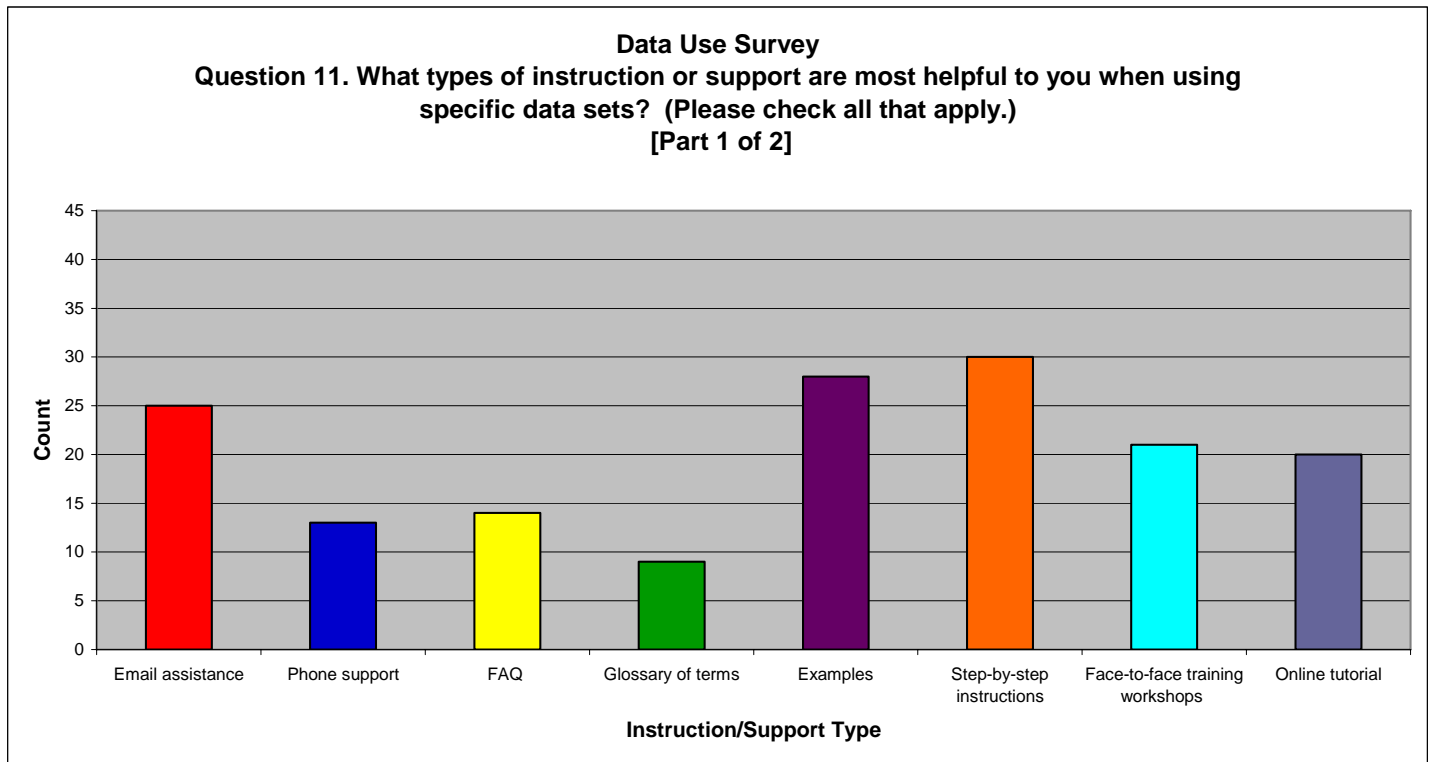
Figure 19a. The most helpful types of instruction or support when participants use data sets.

Data Use Survey
Question 11. What types of instruction or support are most helpful to you when using specific data sets? (Please check all that apply.)
[Part 1 of 2]
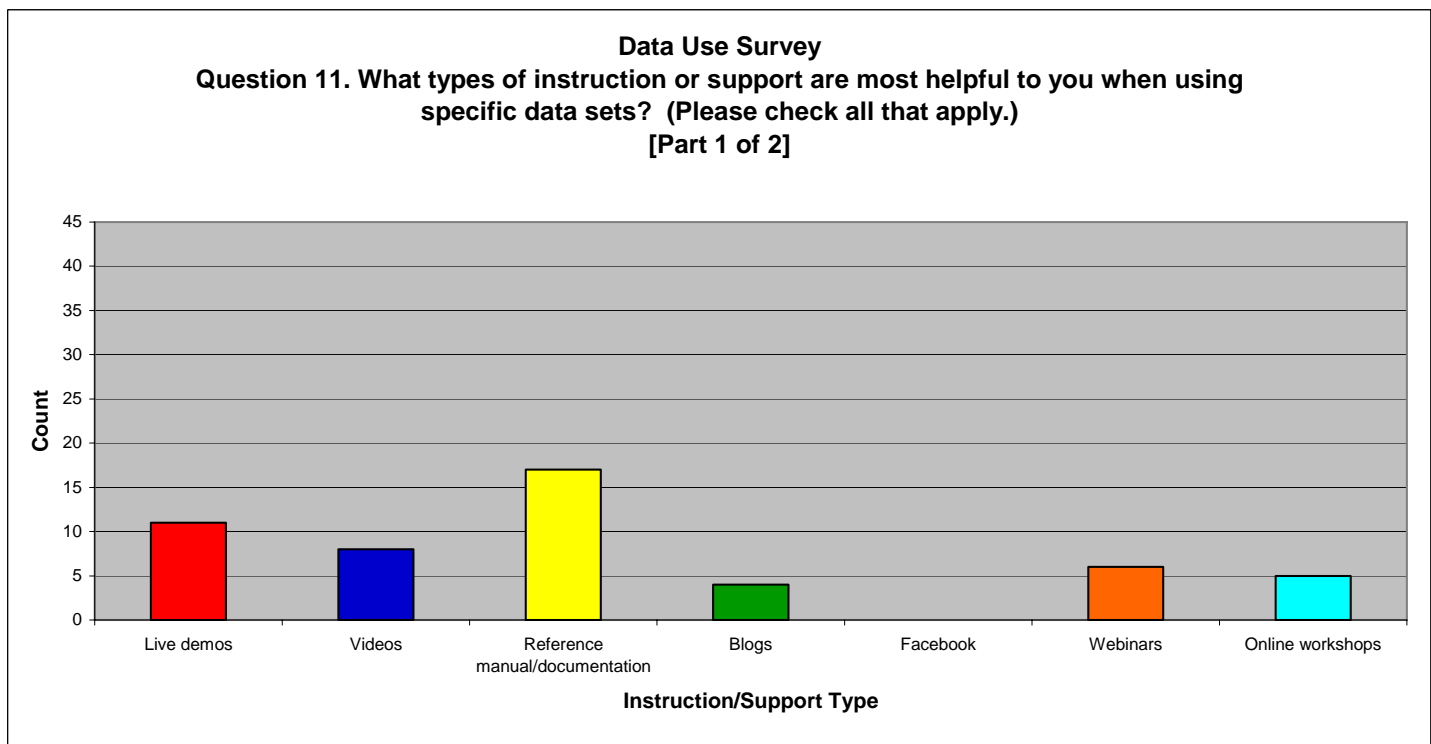
Figure 19b. The most helpful types of instruction or support when participants use data sets.

Two additional comments were offered, as follows:

- *Other "chat" programs, i.e. Skype, AIM, Chat*
- *Email works best.*

Figures 20a and 20b show the responses when they are disaggregated by role. Overall, responses from the different roles were very similar, although no Data Representatives or Scientific Researchers selected Videos.
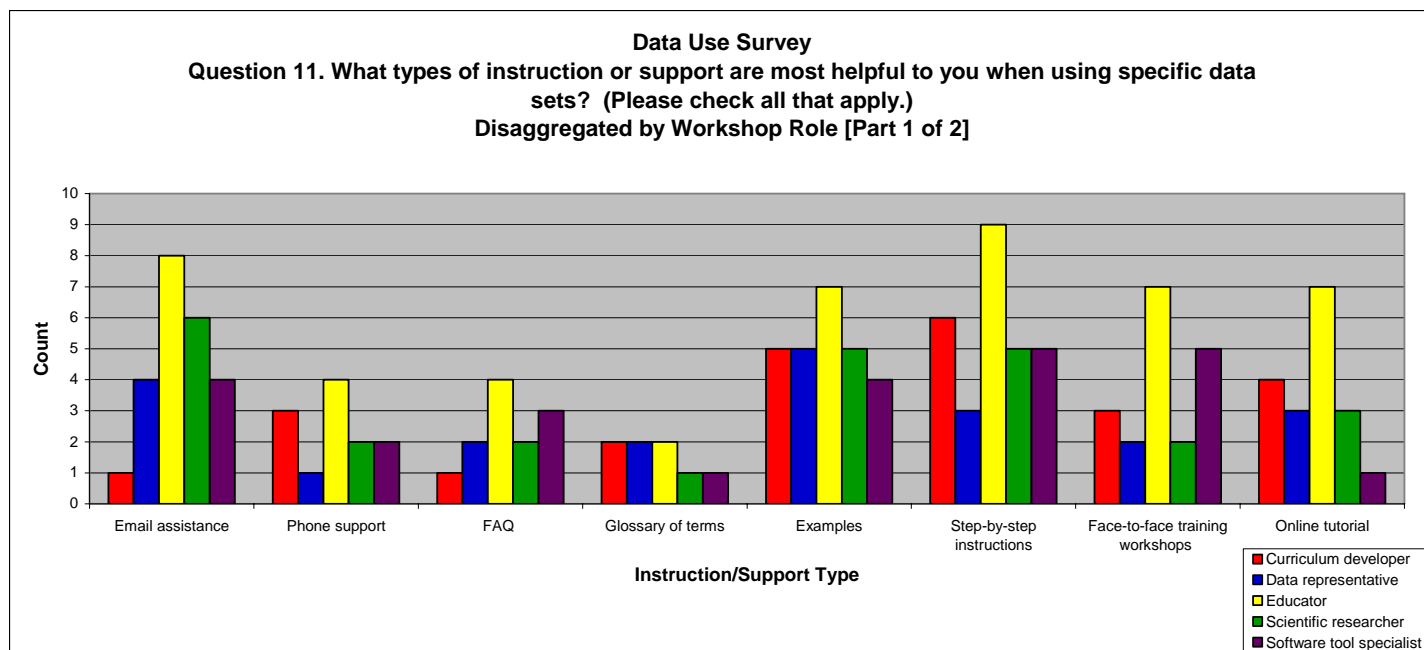
Figure 20a. The most helpful types of instruction or support when participants use data sets, disaggregated by participants' workshop role.
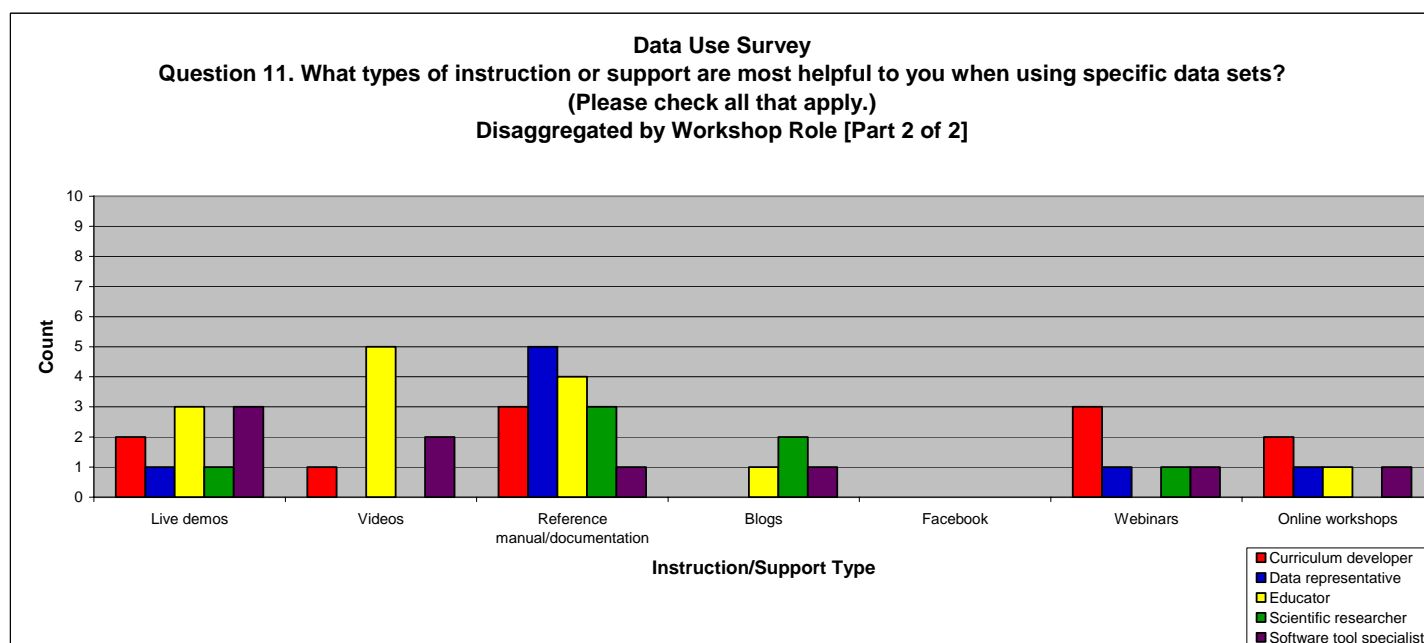
Figure 20b. The most helpful types of instruction or support when participants use data sets, disaggregated by participants' workshop role.

Daily and Final Surveys

Thursday's survey had 43 respondents, Friday's had 42, and the Final Survey had 40.

Data gathered from the first three questions on the surveys are summarized in the Participants section earlier in this report. Responses to the rest of the daily surveys and the corresponding questions in the Final Survey are described together in the first part of this section. Analysis of the remainder of the Final Survey is at the end of this section.

Open-ended comments are in italics when quoted. When questions dealt with issues specific to a team and open-ended responses could shed some light on the team logistics, the name of the team is included in brackets after the quoted comment.

Most Valuable Aspects of the Workshop

Participants were asked to check the most valuable aspects of the workshop on the Thursday, Friday, and Final Surveys; multiple selections were allowed.

As in previous years, the data from all three surveys showed that the team breakout sessions were considered the most valuable part of the schedule (see Figures 21, 22, 23a, and 23b).

<u>Thursday Survey</u>
Only six of the forty-three respondents did not select the breakout sessions as a valuable part of the day. Four of the six were on the same team (GLOBE). Tool time and the keynote talk were both selected by twenty-five or more respondents.

The large number of selections for Tool Time as valuable was largely due to the fact that the most popular session of the week, EdGCM, was on this day; of the twenty-two respondents who attended this session, only two did not select it as a valuable part of the day. Seven of the seventeen who attended GeoMappAp selected it as a valuable part of the day. Of the three people who attended the PsiCAT session, two selected it as valuable.

One person added a comment that the field trip was valuable to them.
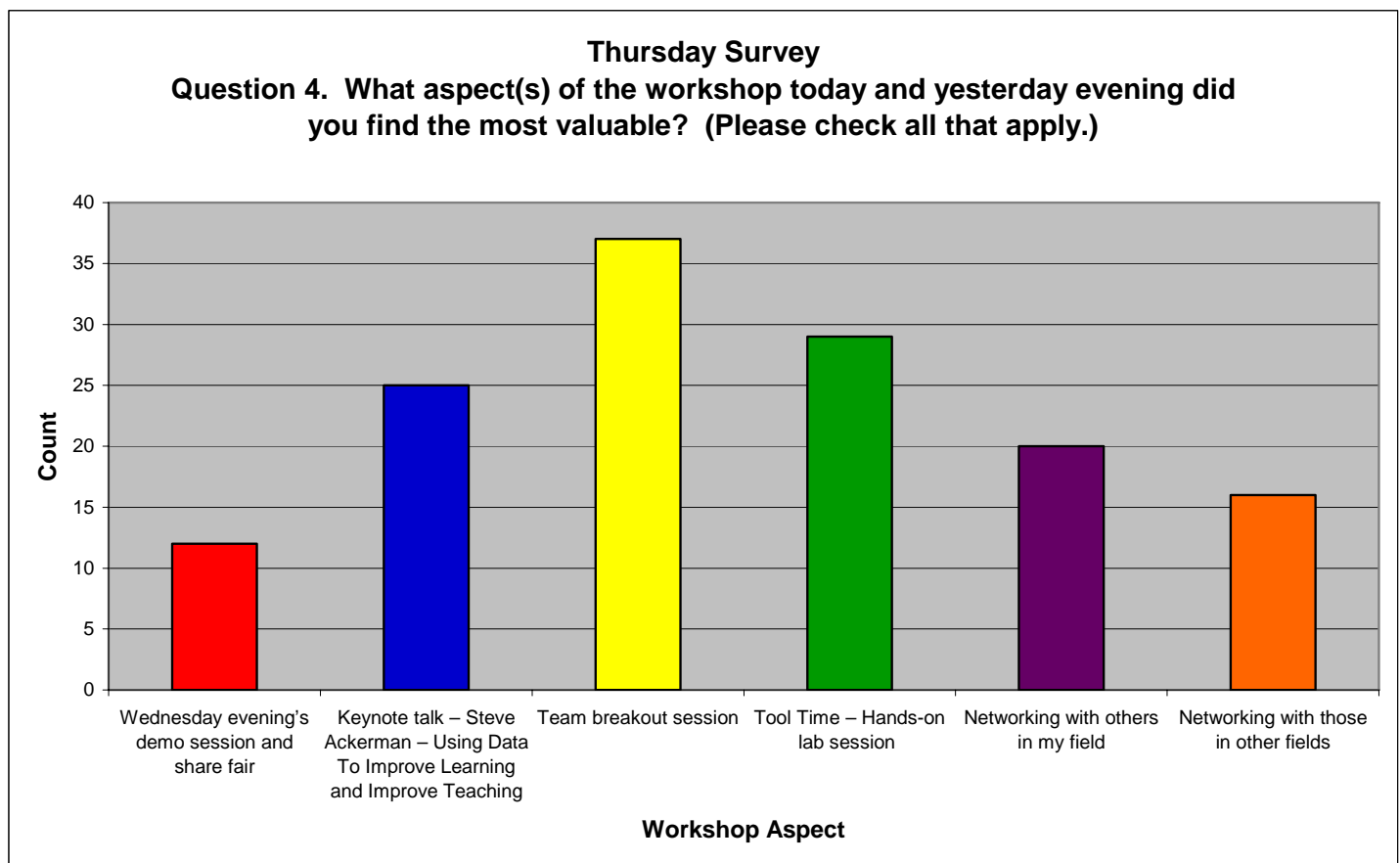
Figure 21. Most valuable aspects of Thursday's schedule.

Friday Survey

Team breakout sessions were the most valuable aspect of the day on Friday as well, with 39 selections out of 42 returned surveys. Tool time and the two networking categories were selected less often than they were on Thursday.

The Friday Tool Time sessions were not reported to be as valuable overall as those on Thursday (due to the high popularity of the EdGCM session on Thursday). Ten of the seventeen attendees of the Google Earth Tool Time selected it as a valuable part of the day. Two of the twelve attendees of IDV selected the session as valuable, and three of the five MyWorldGIS attendees selected that session as valuable.
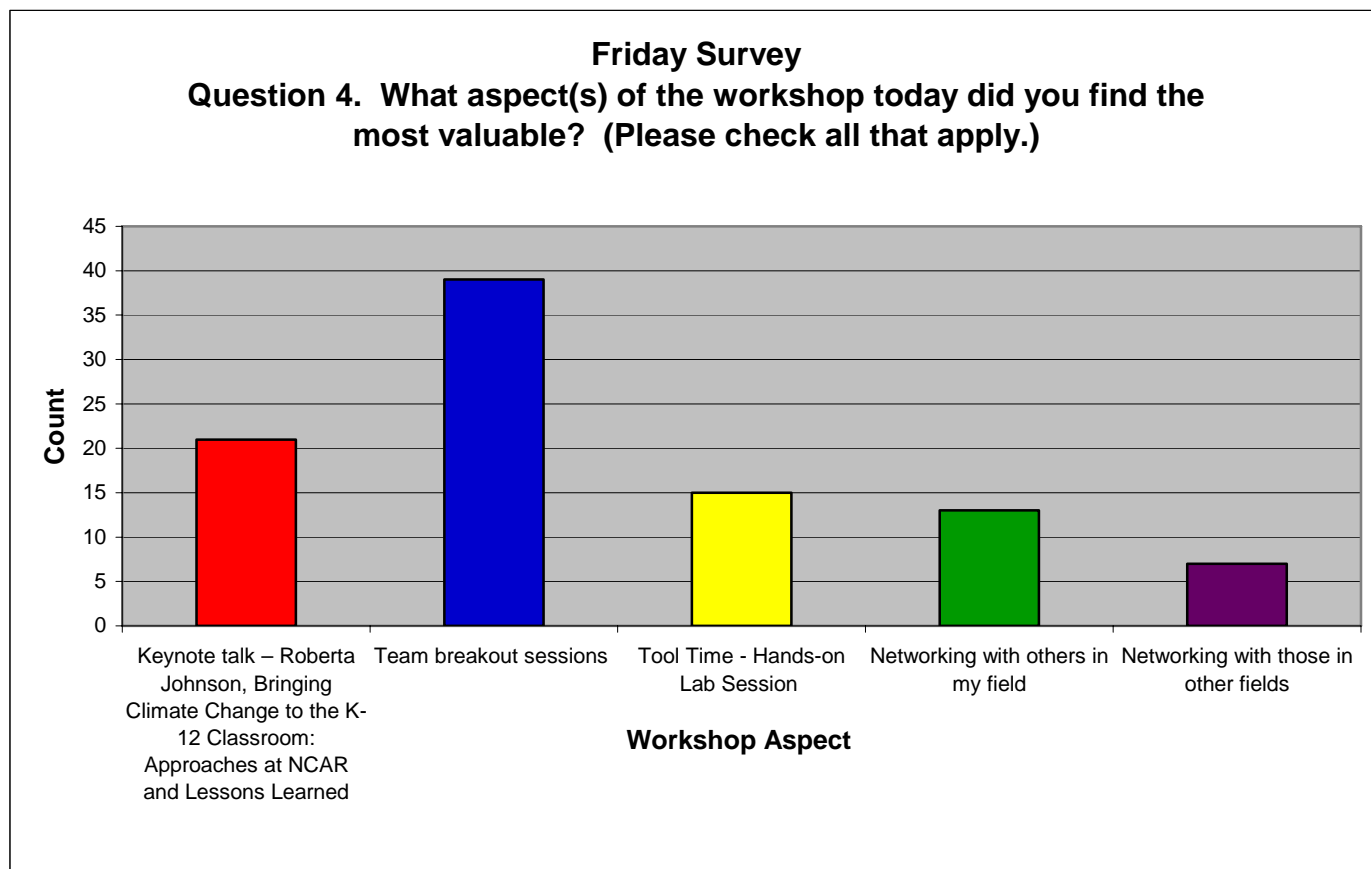
Figure 22. Most valuable aspects of Friday's schedule.

Final Survey

The Final Survey showed that by far the most valuable aspect of the workshop was the breakout sessions. This category received thirty-five selections out of forty completed surveys. Twenty-five respondents selected at least one Tool Time session as valuable. Networking and the Thursday keynote talk all received over twenty selections. In addition, fourteen of the twenty-one reported attendees at the field trip selected it as one of the most valuable parts of the workshop. As in previous workshops, the final report-out was not seen as particularly valuable by participants. It is, however, a necessary part of the process.
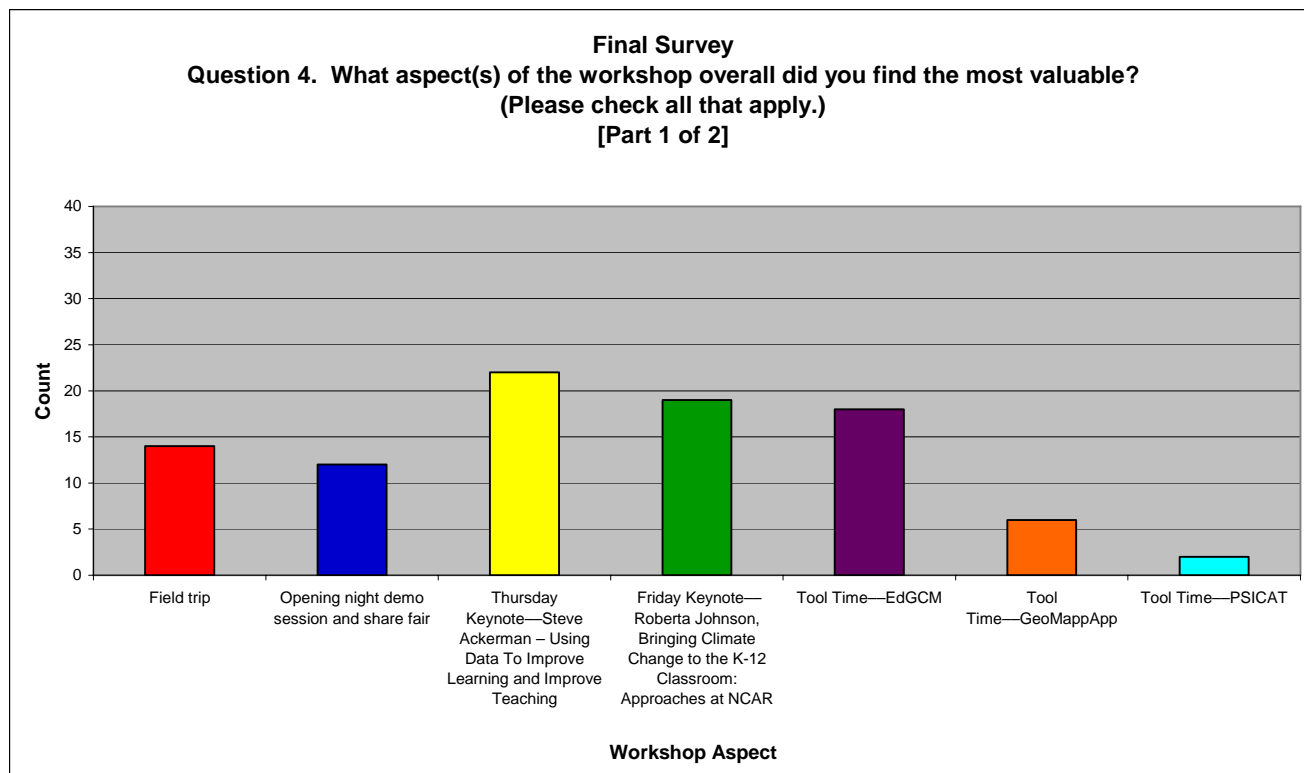
Figure 23a. Most valuable aspects of workshop overall.
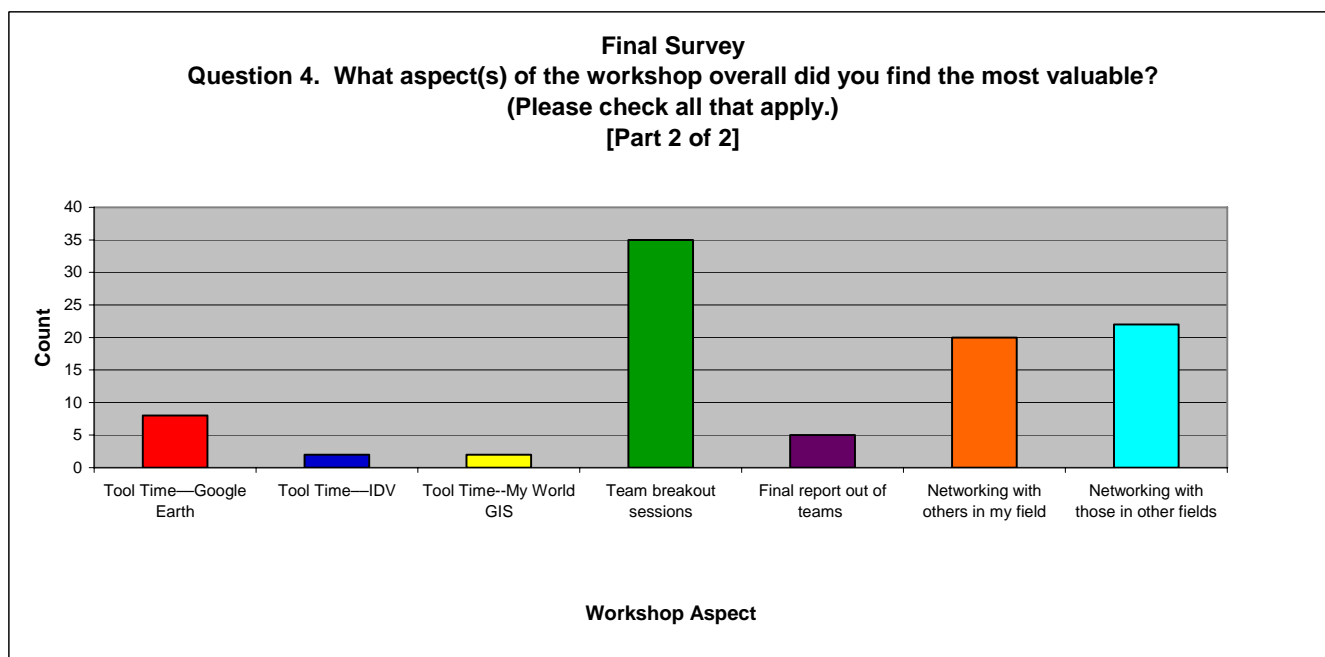
Figure 23b. Most valuable aspects of workshop overall.

Another analysis shows the data in Figure 24. Here, there are two histograms for Tool Time—one for the total of Tool Time selections in Question 4 and one for the number of respondents selecting either one or two Tool Times.
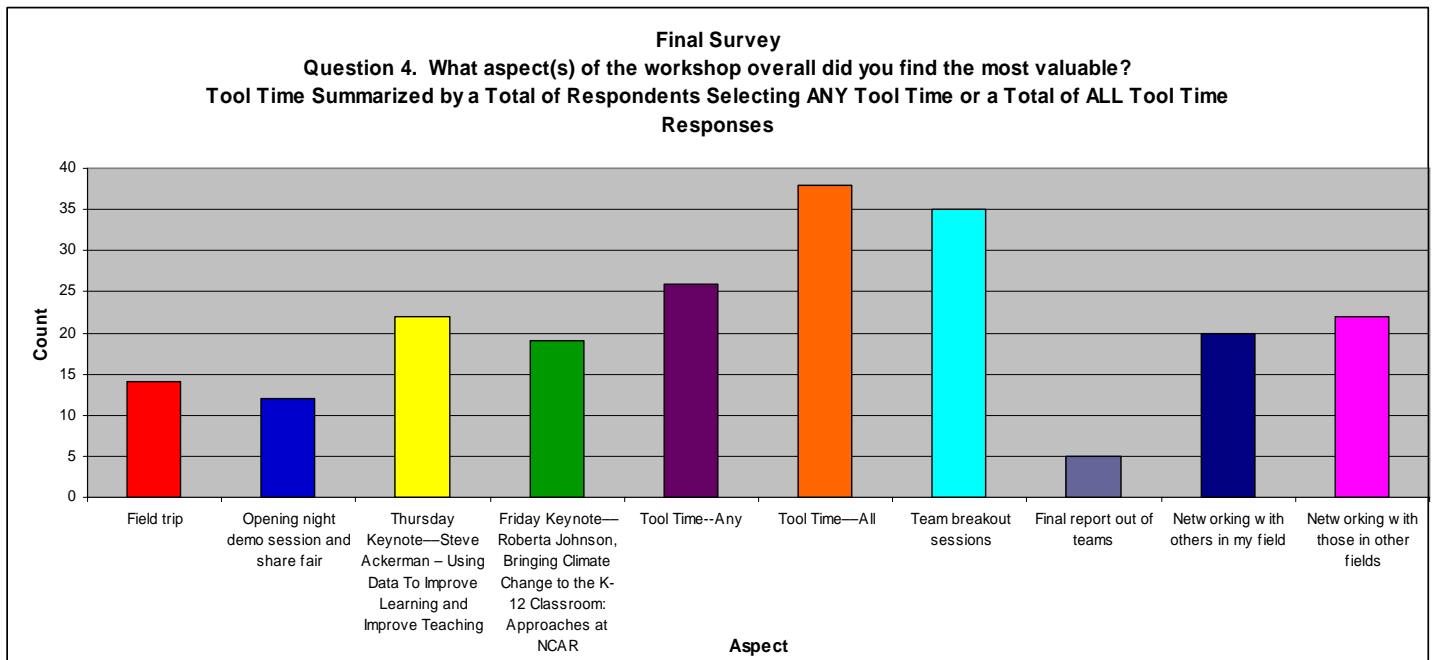
Figure 24. Aspects of workshop considered valuable, with Tool Time responses summarized by ANY (one count per respondent if they selected any Tool Time as valuable) and ALL (the summary of ALL Tool Time selections).

Demo Session and Share Fair

Respondents were asked whether they attended the Wednesday evening Demo Session and Share Fair (Figure 25). Only four said they did not attend; thirteen were presenters and the other twenty-six attended but were not presenters.
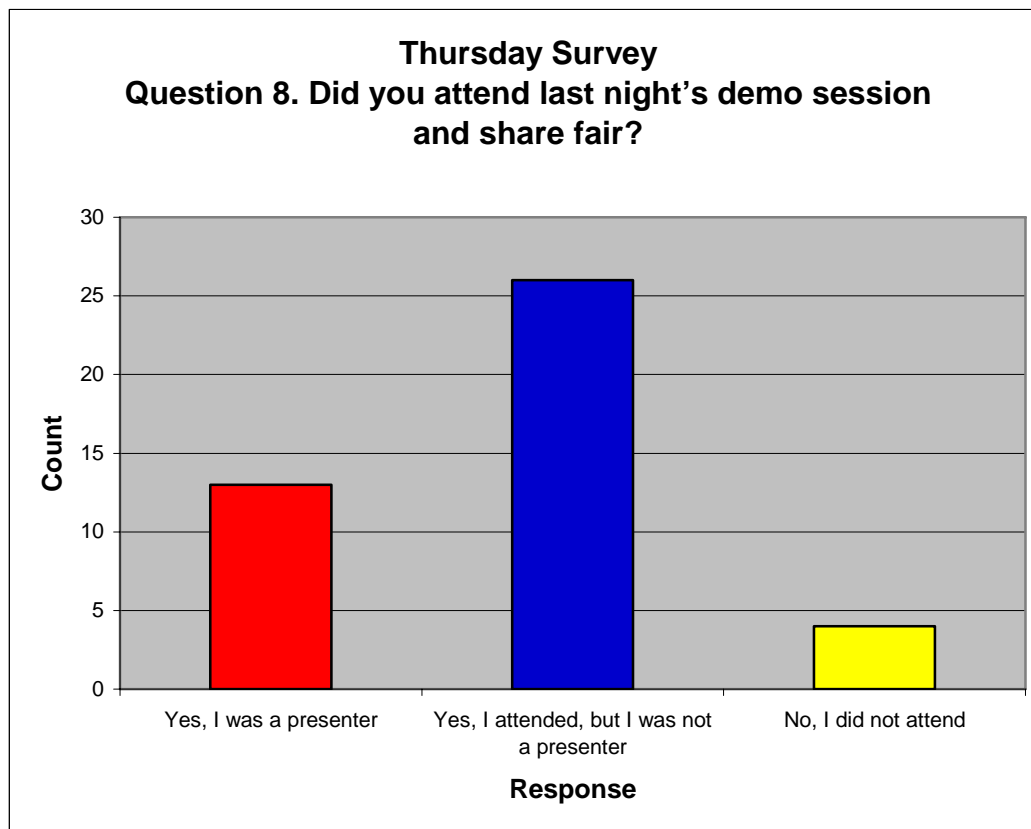
Figure 25. Number of respondents attending or presenting at Demo Session and Share Fair.

The follow-up question asked presenters how the session was valuable to them. Talking and networking with other participants was mentioned by twenty-six respondents. Six appreciated the time to meet with their team. Four mentioned the opportunity to learn more about software tools, and two mentioned the refreshments that were served.

Presenters replied as follows:

- *Talking to others and networking*
- *Good team planning and networking.*
- *It was a great social networking event.*
- *Networking*
- *It was great to be able to chat informally with members of my team as well as other teams.*
- *I like the networking opportunity.*
- *But internet didn't work*
- *Networking learning about other tools.*
- *Gave me a chance to share what we are doing*
- *Good food, people to meet*
- *A little better insight into other team projects.*
- *I enjoyed the informality. Time to meet others & spend time with my team w/ lots of laughter.*
- *Time to meet/greet*

Non-presenters replied as follows:

- *It introduced me to others attending the workshop & a bit of what their focuses are.*
- *see what others are doing.*
- *A very good ice breaker*
- *Networking. Food & Wine were great.*
- *Networking - icebreaking*
- *I read the posters - They were helpful. I would have liked more of them to look at.*
- *Just getting to meet others.*
- *Information of education*
- *Networking and initial meeting w/ team members*
- *I got to talk to different people & learn about their projects & their lives.*
- *Networking & getting us all online…*
- *I didn't actually get around to see all of the posters b/c met up with my group and talked about our project.*
- *Networking & connecting w/ our team*
- *Great to see what others are working on*
- *Networking*
- *See others work & networking*
- *I identified a software I would like to implement in the classroom.*
- *A better idea on which tool session I was interested in*
- *To get a taste of the tools being used here*
- *Networking with all participants - extremely valuable.*

The Final Survey also had a question dedicated to the Demo Session and Share Fair. This question asked to what extent the event had facilitated learning about data access, tools, and educational uses of data. Almost all respondents were in the Slightly or Moderately category (Figure 26). Since most people indicated on the Thursday survey that the session was largely valuable for networking, these responses are not surprising.

Final Survey
Question 7. To what extent did the opening night demo session and share fair facilitate your learning about data access, tools, and educational uses of data?   (Please check only one.)
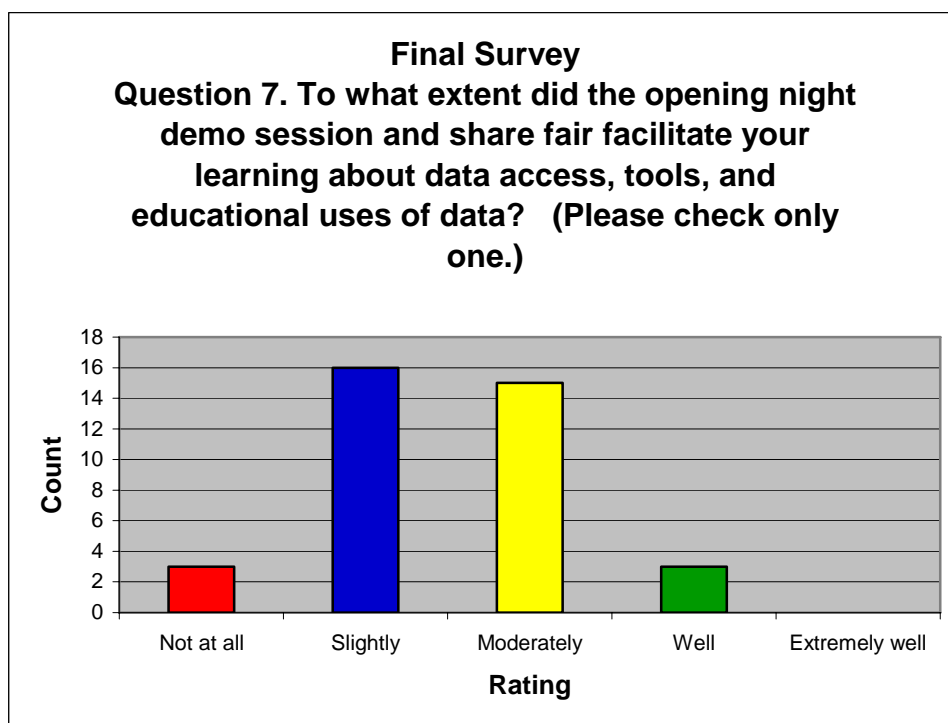
Figure 26. Effectiveness of the Demo Session and Share Fair for learning about data access, tools, and educational uses of data.

Participants were invited to share any other comments about this session. Seven people pointed out that it was mainly valuable as a networking opportunity and icebreaker. Four respondents said it was a good chance to meet with their team. Three mentioned that it would have been nice to have more posters, and two suggested that brief introductory presentations by poster creators would have been good.

Comments included the following:

- *I think short presentations to the group would have been nice. The conversations got long so I didn't see everything & then people peeled off into their own groups.*
- *I mostly used it to meet with my team. I just met a few other people.*
- *This was my fault. Our team met and chatted most of the time so I didn't get to see much of the other presenters.*
- *Knew a lot of the tools already*
- *It was more just a social event.*
- *Not enough posters to look at maybe more interaction.*
- *best aspect was meeting everyone*
- *It would have been good I think to have each team with a poster introduce themselves & say a few words before we started mingling.*
- *The share fair seemed to be more about networking and getting to know my colleagues.*
- *Too few posters were presented.*
- *It was fun though.*
- *Great chance to meet with team, but didn't mix with others much.*
- *It was a great ice breaker*
- *Need people with posters.*
- *Though I looked around at the posters, I don't actually feel I increased my understanding of the tools.*
- *Good networking & time to see posters of others work.*
- *I think the opening session helped me to make that invited face-to-face connection with my team members.*
- *I find the demo session share fare most useful as a networking opportunity.*

Field Trip

Question 9 on the Thursday Survey asked participants if they attended the field trip (Figure 27). Those who attended universally enjoyed the experience.
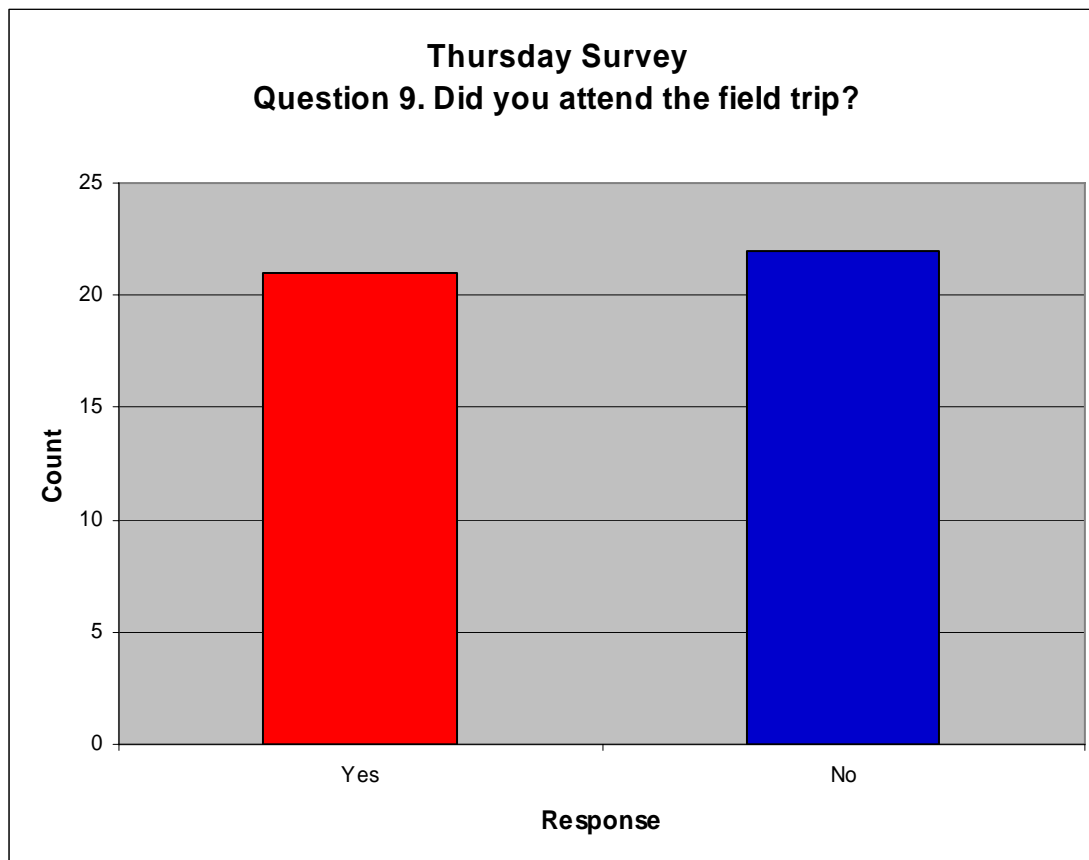
Figure 27. Number of respondents who attended the Wednesday field trip.

The field trip was a new element of the workshop this year. Almost half the respondents to the Thursday Survey reported having attended the trip. Those who did attend were asked **If yes, what are your impressions of the trip? Those who attended were all very appreciative; it was a hit with everyone who went.**

The responses were as follows:

- *Good - Would have liked more geology (but I get that there weren't many geologists)*
- *Great!*
- *Loved it!*
- *Fun trip, good time to meet/greet would have like a bit more science interp*
- *AWESOME*
- *It was fun!*
- *Excellent!*
- *Great field trips. A bit rushed at Garden of the Gods & Manitou Springs.*
- *Great!*
- *Loved it - except for altitude headache & dizziness. Loved visiting Manitou & Garden of the Gods too. Great way to meet people too.*
- *Very good trip. I like the peak with snow*

37

- *Awesome, would have like more time at G of Gods*
- *Great idea - a ton of fun!*
- *Very nice presentation of "Place" - It is great that we take time to enjoy new places.*
- *Fantastic!*
- *Fantastic!*
- *Awesome! Great way to reconnect before the workshop & meet new people too!*
- *Excellent Trip!*
- *Great to socialize.*
- *Wow!! Thank you*
- *Superb!*

Tool Time Sessions

Data on the Tool Time session feedback from all three surveys is summarized here.

On Thursday, the most-attended Tool Time session was EdGCM, followed by GeoMappApp (Figure 28).
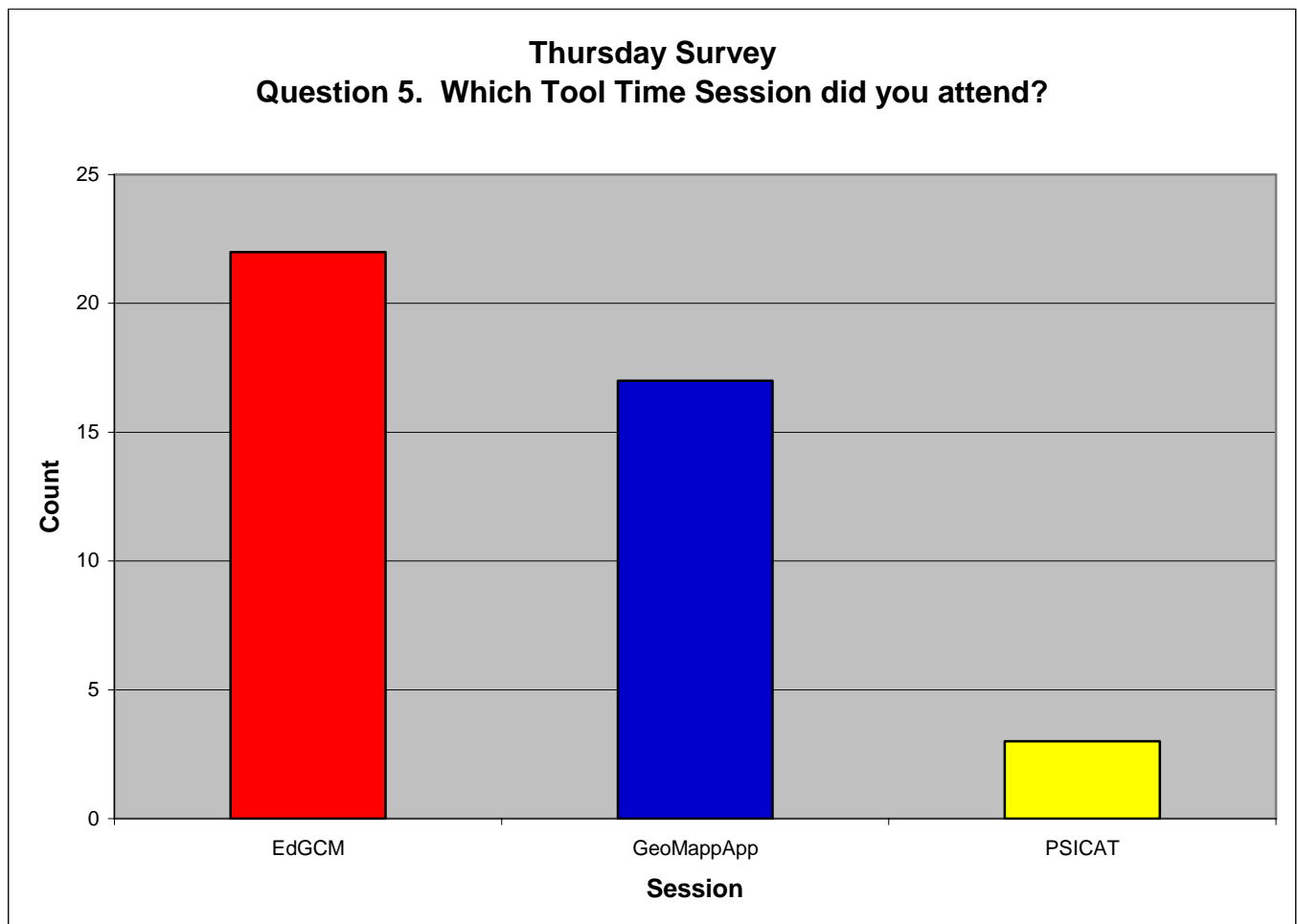
Figure 28. Tool Time attendance on Thursday.

As was mentioned earlier, almost all the attendees (twenty out of twenty-two) at the EdGCM session listed it as one of the most valuable aspects of the day. Seven of the seventeen GeoMappApp attendees reported it as valuable, and two of the three PsiCat attendees marked it as a valuable part of the day (see Figure 29).
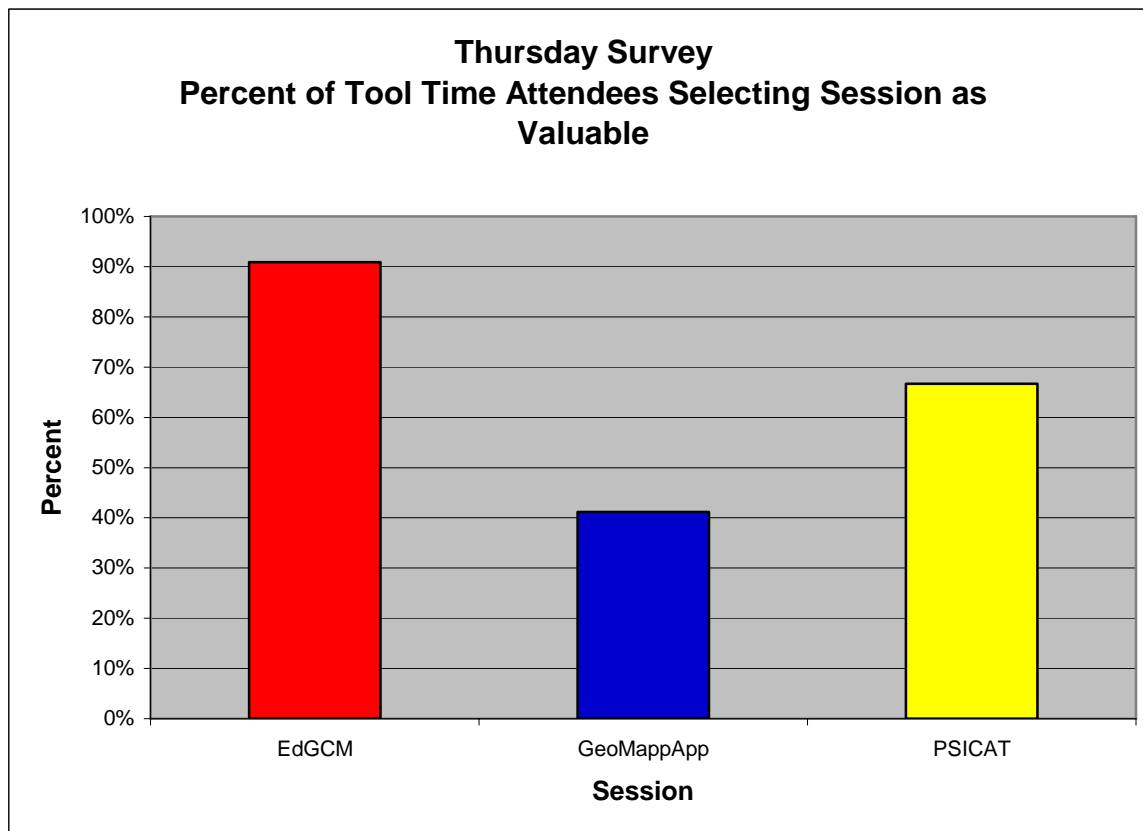
Figure 29. Of those attending a Tool Time session, the percent that found it valuable.

On Friday, the Google Earth session was attended by seventeen respondents, IDV by twelve, and My World GIS by five (see Figure 30).
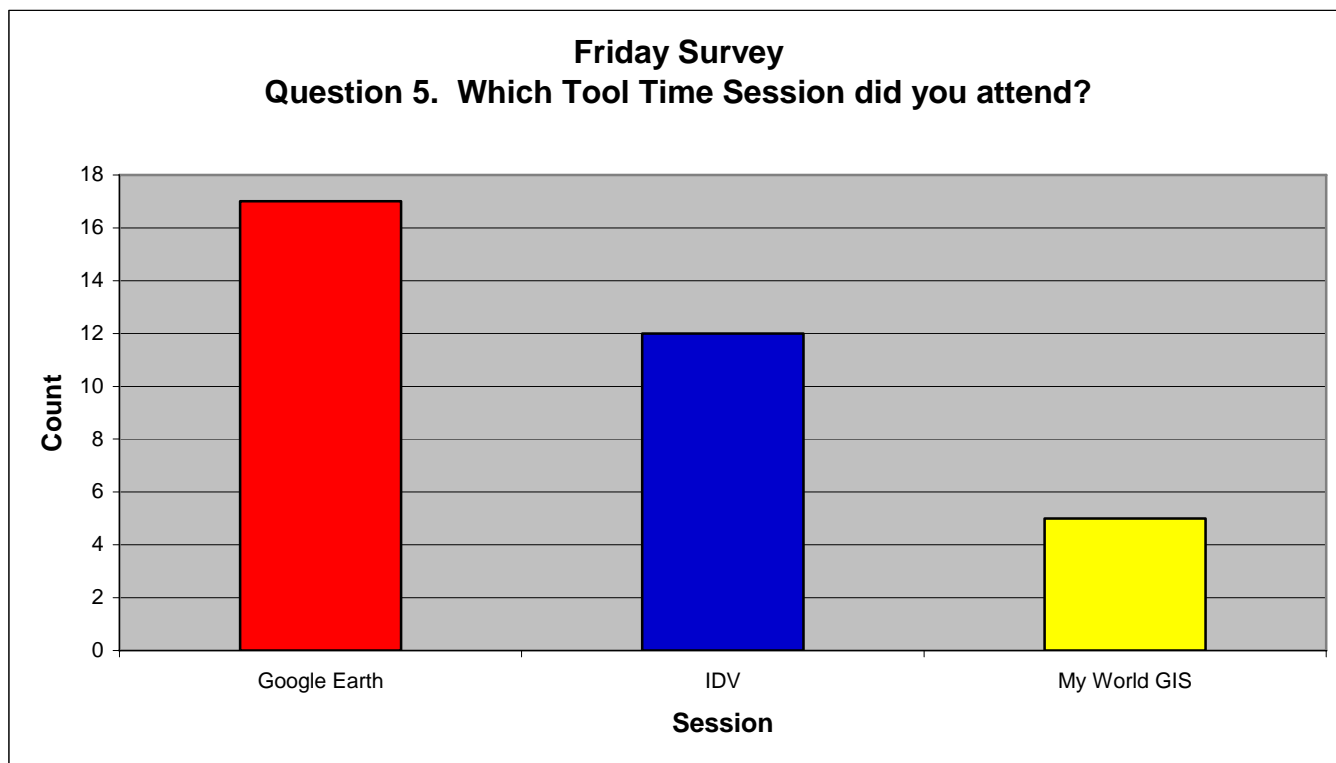
Figure 30. Tool Time attendance on Friday.

As was mentioned earlier, over half (ten out of seventeen) of the Google Earth attendees reported the session as a valuable part of the day, while only two of the IDV attendees did so. All five My World GIS attendees reported the session as valuable, however (Figure 31).
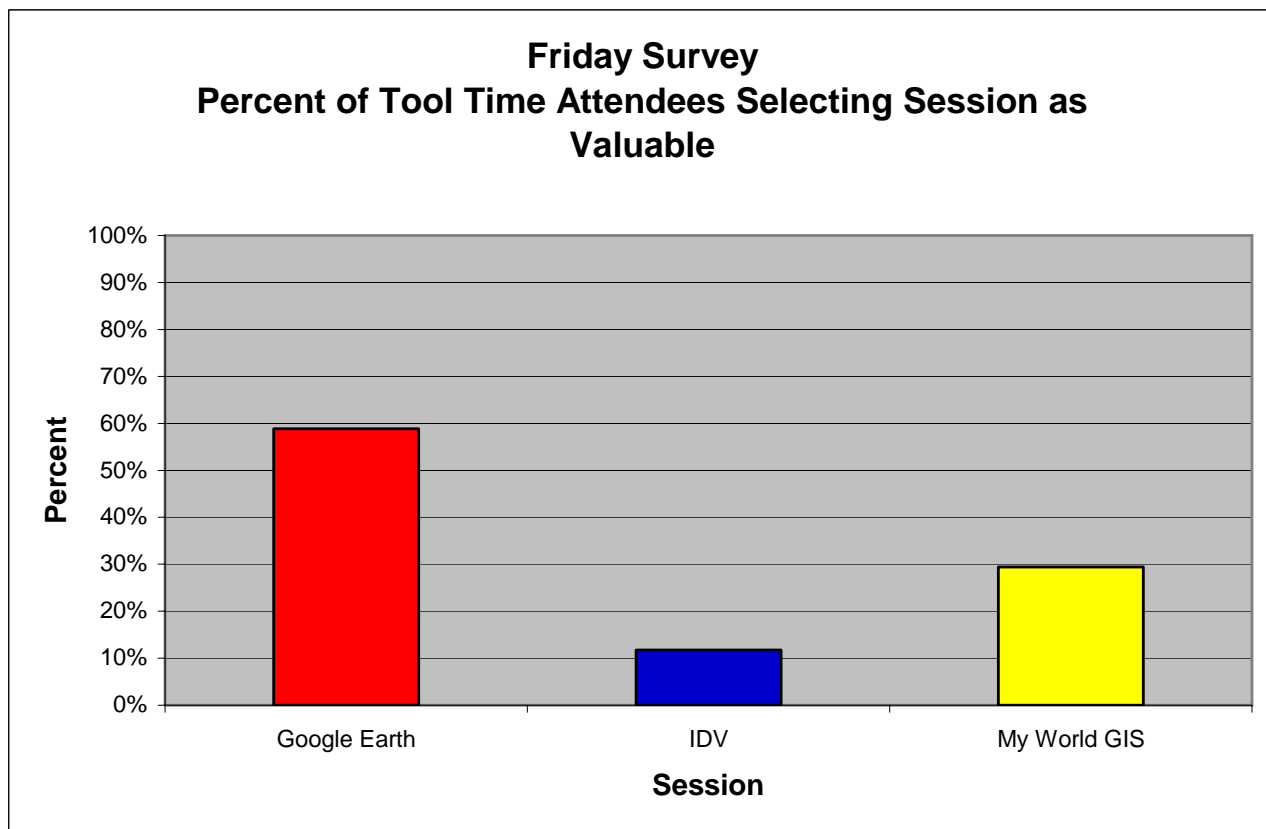
Figure 31. Of those attending a Tool Time session, the percent that found it valuable.

Figure 32 shows the Tool Time portion of responses to the Final Survey's Question 4. In the context of the whole workshop, eighteen respondents said that the EdGCM session was valuable, eight selected Google Earth, and six selected GeoMappApp.
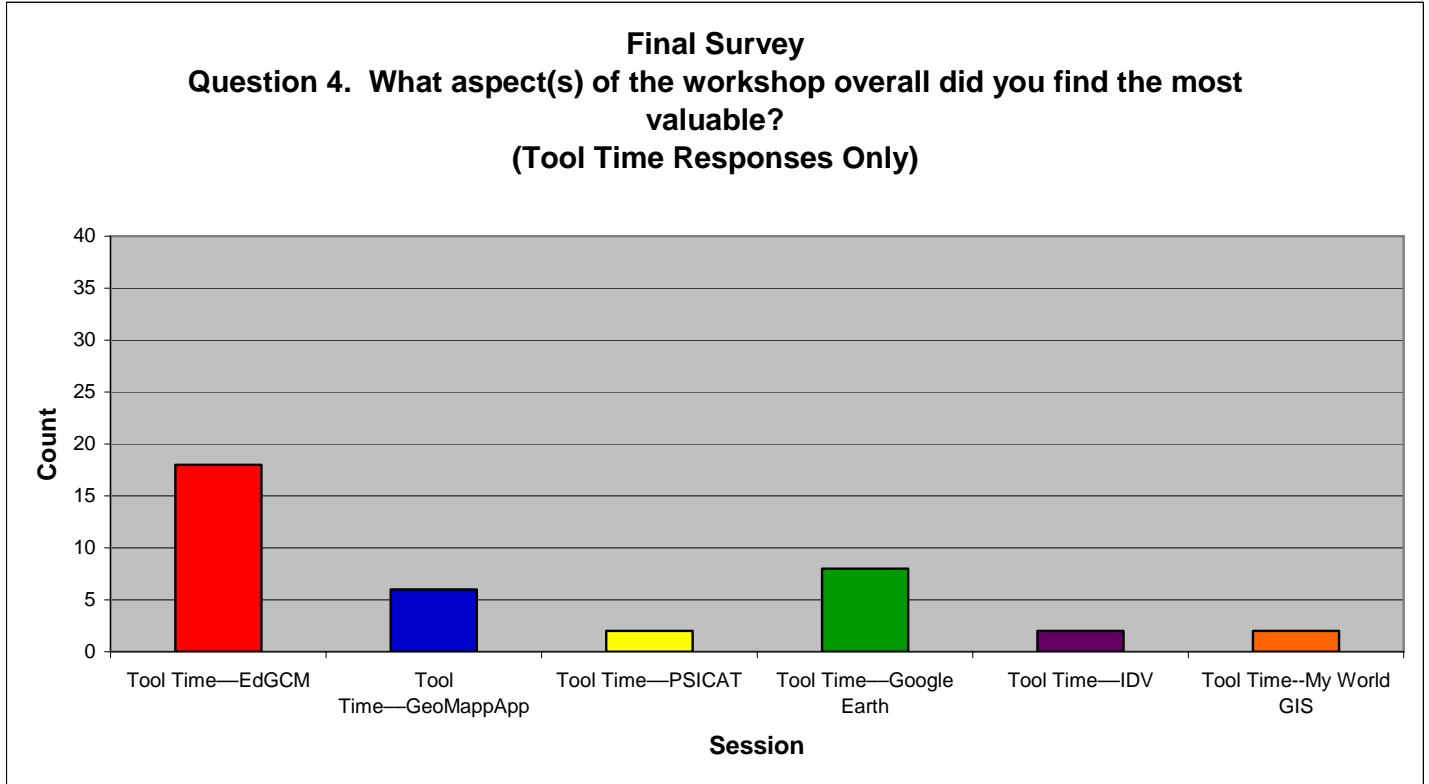
Figure 32. Tool Time responses to the Final Survey's question about most valuable aspects of the workshop overall.

As in the daily surveys above, the Tool Time votes in the Final Survey were adjusted for attendance in Figure 33. Based on the number of self-reported attendees on the Thursday and Friday Surveys, the percent or respondents who marked these sessions as one of the most valuable in the Final Survey are shown.

This rough analysis of Tool Time effectiveness indicates that, for those who attended the sessions, EdGCM and PSICAT were considered the most valuable, followed by Google Earth, My World GIS, GeoMappApp, and IDV.
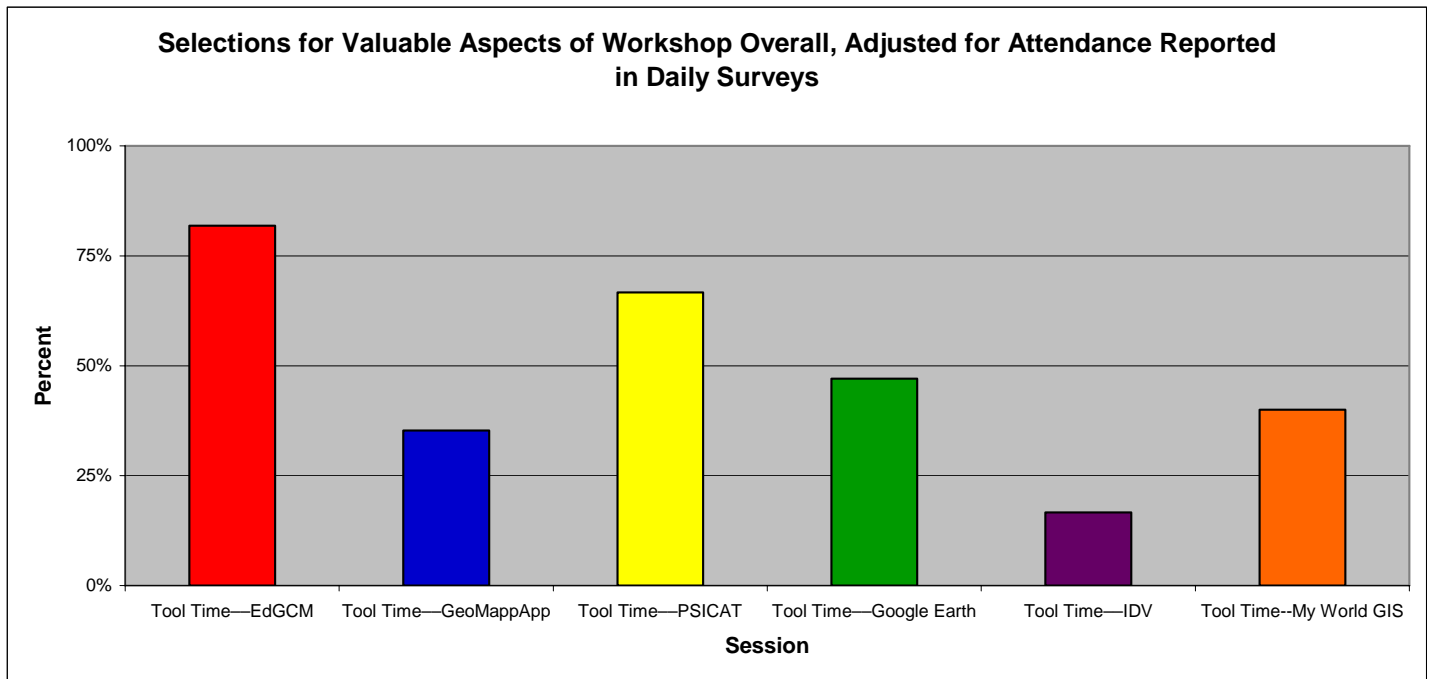
Figure 33. Tool Time selections as valuable aspects of the workshop in the Final Survey, presented as percentages of reported attendance in the Thursday and Friday Surveys.

Balance of the Workshop and Suggestions for Changes

Overall, most participants indicated that the workshop was well balanced. The results showed an even better balance than in previous workshops.

Feedback on Thursday's session indicated general satisfaction with the balance of the workshop, with a slight indication for more hands-on learning and more emphasis on education (see Figure 34).

Figure 34. Balance of Thursday's session, by category.

Question 7 asked participants what aspects of Thursday's session they would have changed and how. Twenty-one respondents said everything was fine (also, two did not reply to this question). The most common suggestion was four requests for better coffee at breakfast. Four people cited network problems. Two people wanted more time with the EdGCM tool and two wanted more breakout session time. One person wanted more emphasis on education and one wanted less. Other suggestions were adding information on evaluating tools, participant introductions, more specific information on goals, more demonstrations of tools, and not staying in college dorms.

The responses were as follows:

- *Can't make the day much better without making it longer… !*
- *I liked that the talk (ackerman) included discussion of evaluation of learning. I would value more discussion of how to evaluate tools for use by educators.*
- *NADA*
- *Nothing!*
- *Make breakout sessions longer*
- *Nothing*
- *I'm impressed with Agenda as set & would not change anything except I would have liked for everyone to introduce themselves at AM session.*
- *Frame goals more specifically - this helps first time teams*
- *I would have liked to have spent more time with hands on EdGCM. It was really excellent. I did learn enough to follow up & to use it with my students.*

- *I think we did fine. We are making progress.*
- *Nothing - Great first day!*
- *Not much, but I may change this after tomorrow as there is a link between today and tomorrow's activities.*
- *I actually thought today was great. Things were broken up enough that I would focus, yet I felt we had enough time to get good information.*
- *Everything seemed to go well*
- *Better coffee at breakfast! Connectivity of computers to campus network.*
- *None*
- *A bit more time with my team*
- *Nothing*
- *Don't stay in college dorms*
- *None*
- *More hands on exp. With EdGCM*
- *Better coffee, please!*
- *Had some problems getting Virtual Ocean to work. Walking across the street my computer switched from TigerNet to CC Guest - we didn't discover it until the last 5 min. so the major portion of the break was frustrating.*
- *Focus for this initiative is very largely scientific with little relevance, at the moment, for K-12 educators.*
- *I think it is going well so far.*
- *Not sure… I was really was pleased with the balance.*
- *We could have worked more but I am a workaholic :)*
- *NA*
- *Network connecting problems*
- *None*
- *All is well - the timing allowed for team breakouts & games set for each session are well designed - I would change nothing.*
- *I would have liked quick demos of the tools & also a quick synopsis of the teams w/ presentation of their goals - both suggestions for the purpose of brainstorming*
- *Stronger coffee at breakfast*
- *Better, stronger coffee*
- *None - today was great*
- *It would have been helpful to have either an additional geoMappapp w - presenter for support or to have used the version we downloaded for the demo instead of the new Beat which we didn't download, instructions not written for version we had.*
- *Faster network connect for GeoMappApp*
- *There was a good balance between team & tool sessions. I liked the tools breaking up the team sessions as it gave me a chance to let ideas stew.*
- *Nothing*
- *2 sessions - less talk*
- *As a non-educator, too much on education and curriculum.*

Feedback on Friday's session also indicated general satisfaction, with a slight indicator for more emphasis on education and curriculum and more team breakout time (Figure 35).
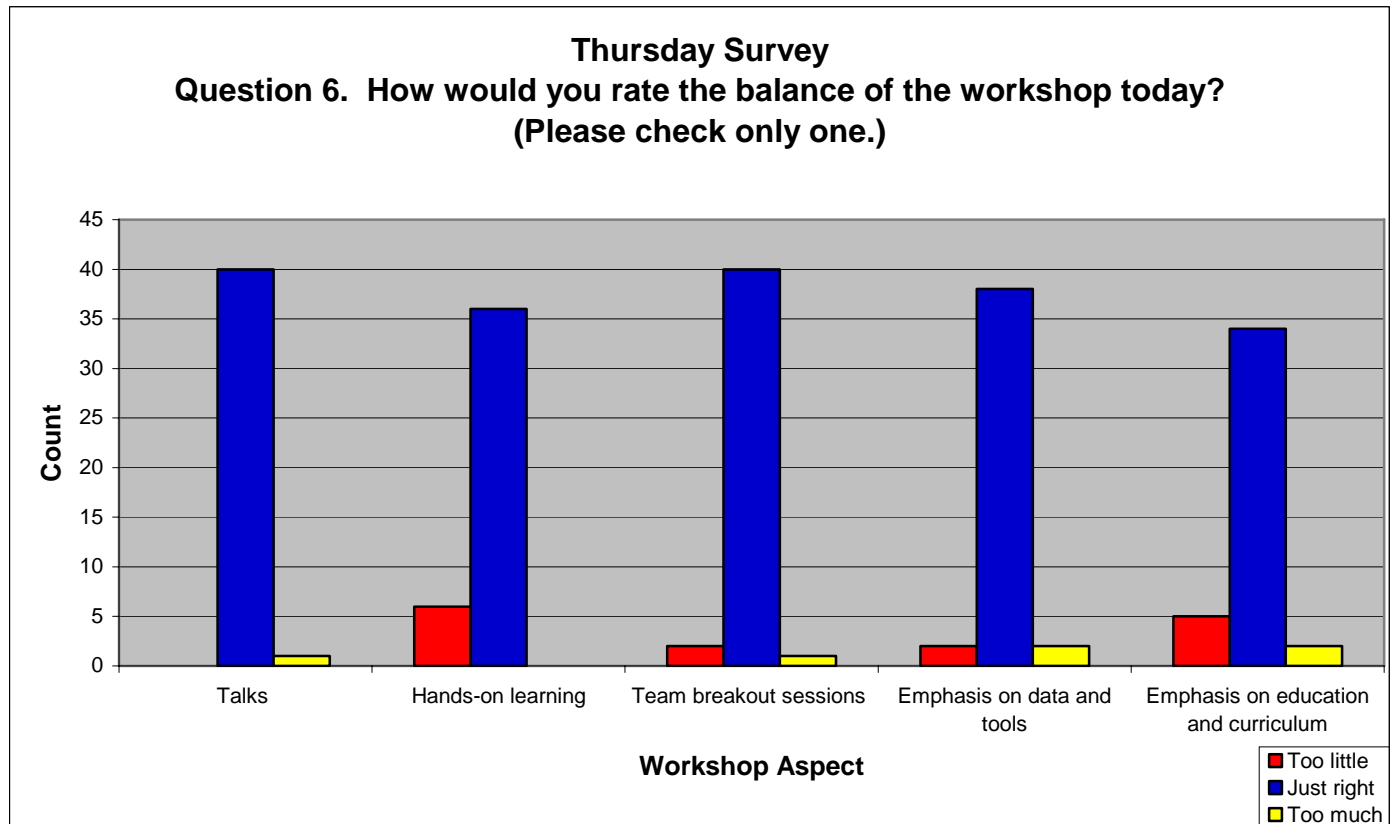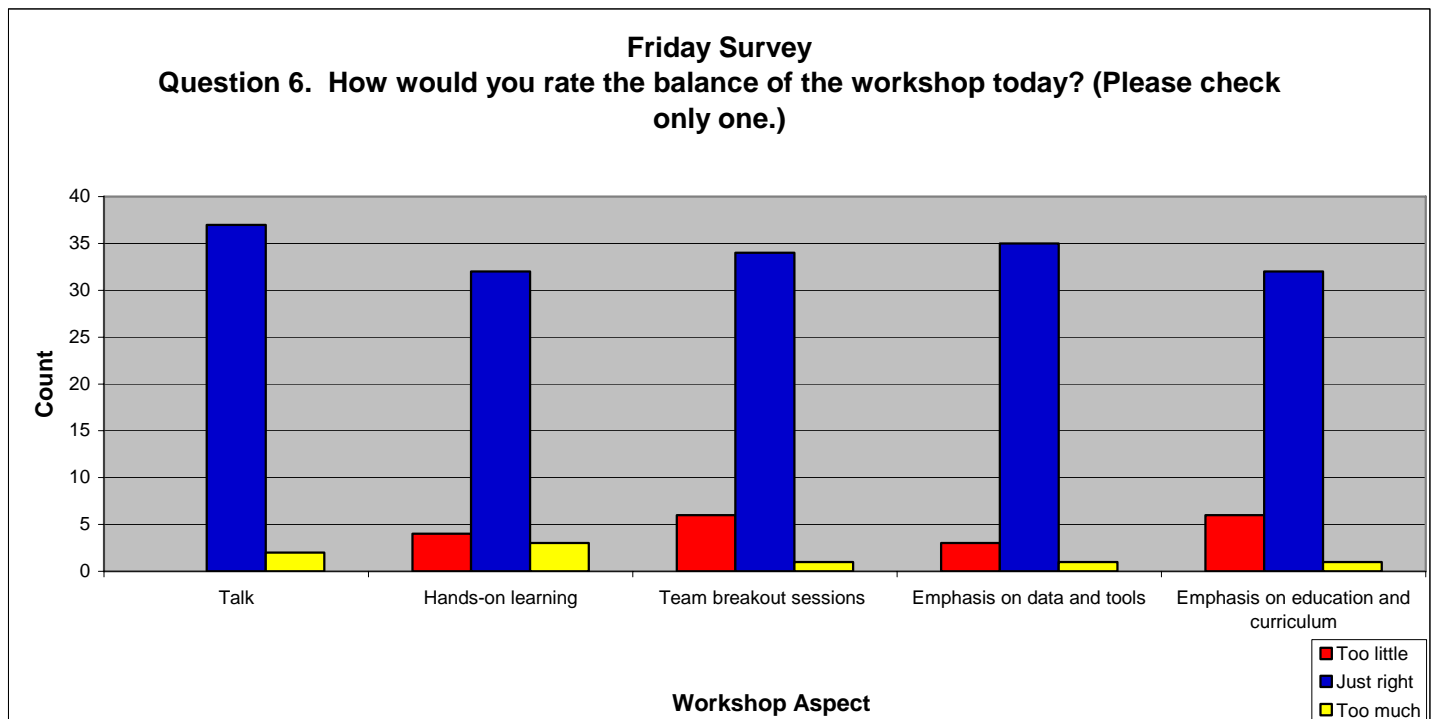

Figure 35. Balance of Friday's session, by category.

Question 7 asked participants what aspects of Friday's session they would have changed and why. Nine participants said they wouldn't change anything (also, twelve did not reply to this question). Six mentioned problems with the Tool Times or the network connections. Two wanted more Tool Time emphasis, and two thought the keynote talk was too much of a promotion for the featured website. Two complained about the lodging (crowding, bed size, and shower issues). Other comments included a desire for more information on education/curriculum, a need for more work time, not having a need for tool sessions, a request for less emphasis on story and more on data, and a request to have dinners on campus.

Specific suggestions for changes were as follows:

- *Would have enjoyed more time in the tool session. The handout will be helpful later.*
- *Another tool time session - maybe in the evening. I was sorry to only get 2.*
- *I was frustrated in the tool section. My internet connection kept dropping so my tool time session was spent re-starting. Aargh!*
- *Today was just right*
- *Breakouts more focused - improved*
- *The presenters need more time to be ready for the talks. Or need to make sure hardware is ready for their needs.*
- *Hotel lodging would be better or at least fewer people per suite*
- *Nothing :)*
- *Google Earth lesson had a lot of "wow" and not much "how" I was hoping for more how. I also felt that Roberta's talk could have had less showing of her website.*
- *There has been less emphasis on education & curriculum than I would prefer (I am a research scientist)*
- *None.*
- *NADA*
- *I would have like a little more instruction and hands on w/ google earth… very interesting stuff but need time to play!*
- *None*
- *Like to have dinner meals available on campus*

- *Because I am feeling a bit behind and stressed, I may have opted out of the morning talk and the tool-time in lieu of more work time.*
- *I cancelled google earth and my world courses and attended WV courses.*
- *None.*
- *A bigger bed and access to a shower in a timely manner :)*
- *Less agenda time on Story. Way more on data*
- *IDV tool time session not very successful - tech issues, too fast for such a complex tool.*
- *Today was great, lots of team breakout time, good progress, still have a way to go!*
- *I don't see the need for expanding my knowledge of new tools, my own skill set is a challenge to maintain.*
- *Maybe it would be good to compare notes on where the teams are at (I guess we'll do this tomorrow)*
- *None- I think this is an excellent workshop!*
- *Berries!*
- *Make the key-note more specific on tools of data and less cheerleading for UNCAR.*
- *Our grouped worked really well & that was very gratifying. It wasn't a big issue - but- network & wiki did not work too well.*
- *Nothing*

The Final Survey gathered balance feedback from participants at the end of the workshop. See Figure 36. Results were very similar to the two daily surveys. The most common responses were too little emphasis on hands-on learning (seven selections) and too little emphasis on education and curriculum (eight selections).
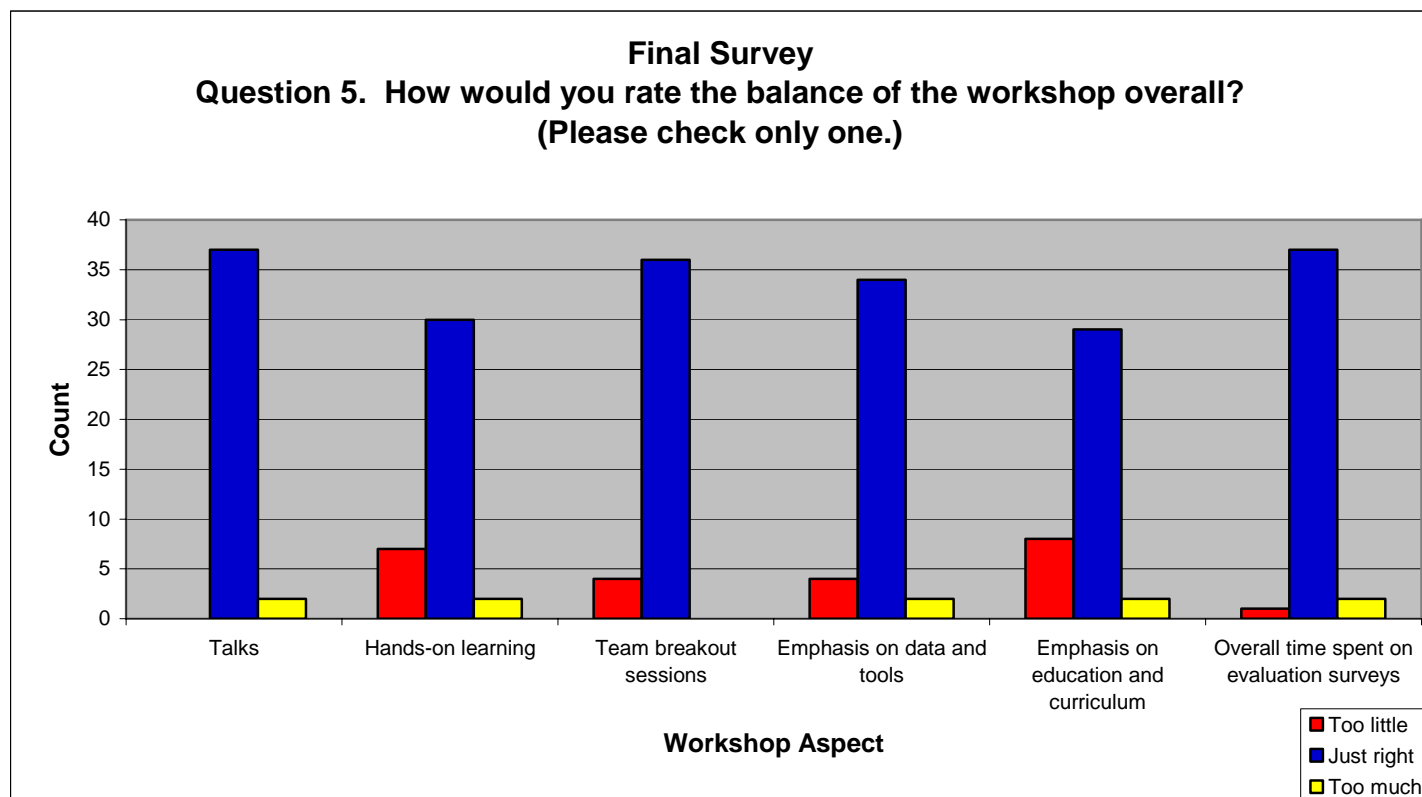
Figure 36. Overall balance of the workshop, by category.

Question 6 on the Final Survey asked what aspects of the workshop overall participants would have changed and how.   Seven respondents said they wouldn't change anything. Four wanted more information on education and curriculum issues. Three requested more team breakout time. Two asked for more inter-group interactions and two commented on network problems. Other responses were varied and are listed below; where team issues may be involved, the team designation appears at the end of the comment in brackets.

Comments on Food and Housing
- *Accommodations were a tad spartan :)…. But quite beautiful*
- *Accommodations at a hotel*
- *Would have been nice to have option to eat dinner on campus.*

Network Issues
- *More bomb proof connections to fast wireless*
- *Better technology support (network, wiki) - though it didn't bother me - we had to work around.*

Appreciative Comments
- *Seemed to be well balanced.*
- *It seems to have worked very smoothly overall*
- *Nothing*
- *None*
- *NA*
- *None- Everything was great!*
- *This workshop was incredibly well organized. I can think of very little room for improvement.*

Tool and Tool Time Issues
- *It would have been nice to have another session to be exposed to another tool. The ones I went to were great but it was difficult to choose one.*
- *Give the tool presenters time to get ready*
- *A brief survey of different tools beyond online descriptions.*
- *I changed my tool time. I cancelled my workshop on google earth and learned IDV*
- *Alleviate the frustration many felt in a couple of tool time sessions by adding a co-presenter to support participants.*

Team/Breakout Time
- *Additional time to work with team (but would need to extend meeting by one day)/keynote on curriculum development [EdGCM]*
- *Emphasize that teams must work with data to develop story. [NSIDC/NCAR]*
- *Less tool time, more team breakout time. [Ridge/ROSCOE]*
- *Even more time with breakout [UA-Fairbanks]*

Inter-Group Connections
- *Maybe forcing more inter-team interactions but overall I thought this workshop was a bit better balanced compared to 2007.*
- *More intergroup collaboration.*

Education/Curriculum Issues
- *I think a little more scaffolding about how to create useful content would be good.*
- *I would have valued more information on how to design good curriculum materials; as a scientist, I don't hear enough about such things outside of workshops.*
- *Keynotes that have developed, trained teachers on, and use EET chapters with students*
- *Data and Tools over emphasized*

Schedule Issues

- *I feel a little rushed with the two Saturday morning breakouts. Maybe reduce that to one and put something less intensive on Saturday morning.*
- *I wish I could have gone on the field trip. This is my fault not yours.*
- *More emphasis on the "posters" at the Wednesday evening opening session.*
- *Introductions of all participants at opening session - pm going into large group phase.*
- *Provide time for a session with Curriculum Developers to meet*

Question 8 asked how well the team worked together (see Figure 37). **There was almost complete agreement among participants that the teams worked well or very well together.** The only response of Moderately came from someone on the NSIDC/NCAR team.

Final Survey
Question 8. How well did your work team work well together? (Please check only one.)
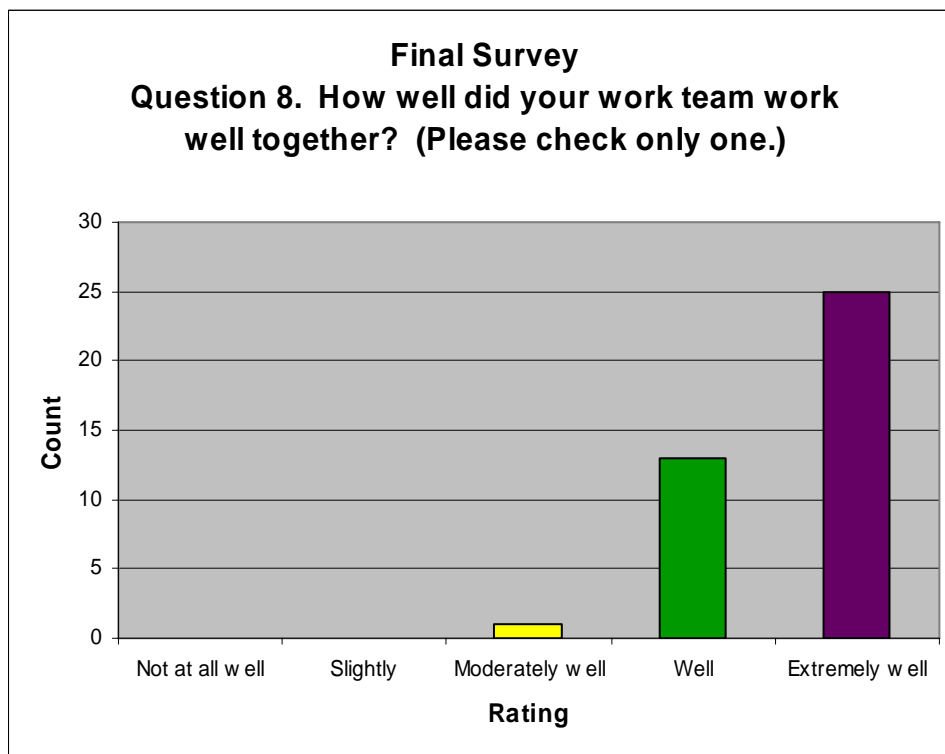
Figure 37. Rating of how well the team worked together.

Nineteen respondents provided comments when respondents were asked, Please comment on what did and didn't work in your team. **Most comments were about what worked in their teams, and were very positive.** One team didn't have any comments at all (CHRONOS). All other teams had at least one positive comment. **Negative comments weren't phrased as being catastrophic, but were more like minor hurdles;** two people on two teams reported problems of people getting off-task. One team had an educator who had not participated in pre-workshop interactions or the topic area, and may have had some limitations due to that situation. One team reported problems with one of their tools as well. Comments on what worked well or didn't work well in the teams were as follows (with teams listed in brackets after each comment):

What Worked Well
- *We worked well & were respectful of others experiences. [ANDRILL]*
- *Overall [a] great group. [EdGCM]*
- *Our team has been just great. [EdGCM]*
- *This team worked well together. [EdGCM]*
- *Knowing each other and setting goals before we got here. [GLOBE]*
- *Very good, diverse group [NSIDC/NCAR]*
- *We interacted well at developing an interesting "storyline" with regard to changing arctic permafrost. [NSIDC/NCAR]*
- *Face-to-face made us behave, work through differences, and get it done. [PLT]*
- *Reaching consensus & staying focused on activity. Being aware nature & structures of access data activity. [PLT]*
- *Good balance of roles demonstrated a thoughtful progression in developing our project. [PLT]*
- *Process took time, but everyone was patient [PLT]*
- *We had ups and downs in productivity, but came together really well.[Ridge/ROSCOE]*
- *Experience with previous DLESE/AccessData workshops was very useful. [UA-Fairbanks]*
- *I thought the team gelled remarkably well. There were complimentary strengths. [UA-Fairbanks]*
- *Everyone was willing to listen to everyone else's idea. A willingness to work as a team. [UA-Fairbanks]*

What Didn't Work Well
- *It took a while to narrow down the focus of our project. [ANDRILL]*
- *We had two scientists and sometimes they would get interested in the data and get off track for the activity. [ANDRILL]*
- *People checked out and looked at email or surfed web. Having something to present (ie a keynote or tool time) distracted members of our team at times. [EdGCM]*
- *Just needed more time [EdGCM]*
- *I feel bad that our assigned educator from overseas was not able to contribute very much because our chapter was not in her area of experience. [GLOBE]*
- *One tool didn't work out [NSIDC/NCAR]*

Question 9 asked whether the respondents participated in the pre-workshop preparation activities and, if so, how useful they thought they were. See Figure 38. All who participated found the activities at least somewhat useful and the majority found them very useful. Only four of thirty-six respondents had not participated in the pre-workshop activities.
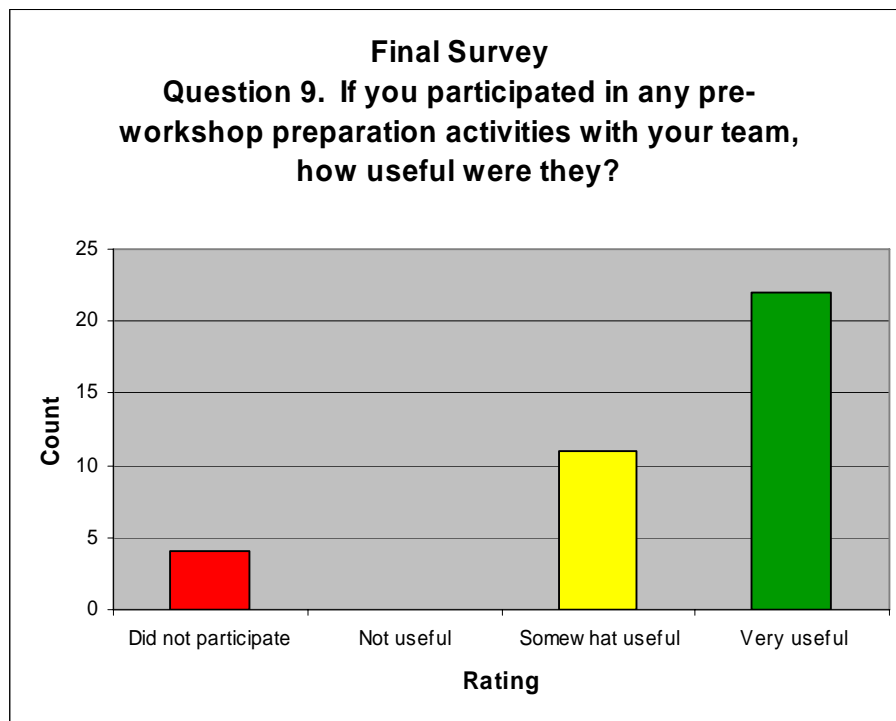
Figure 38. Pre-workshop activity participation analysis.

Results of these data were disaggregated by team to display any trends (Figure 39). Results were similarly positive for teams that did participate in pre-workshop activities.
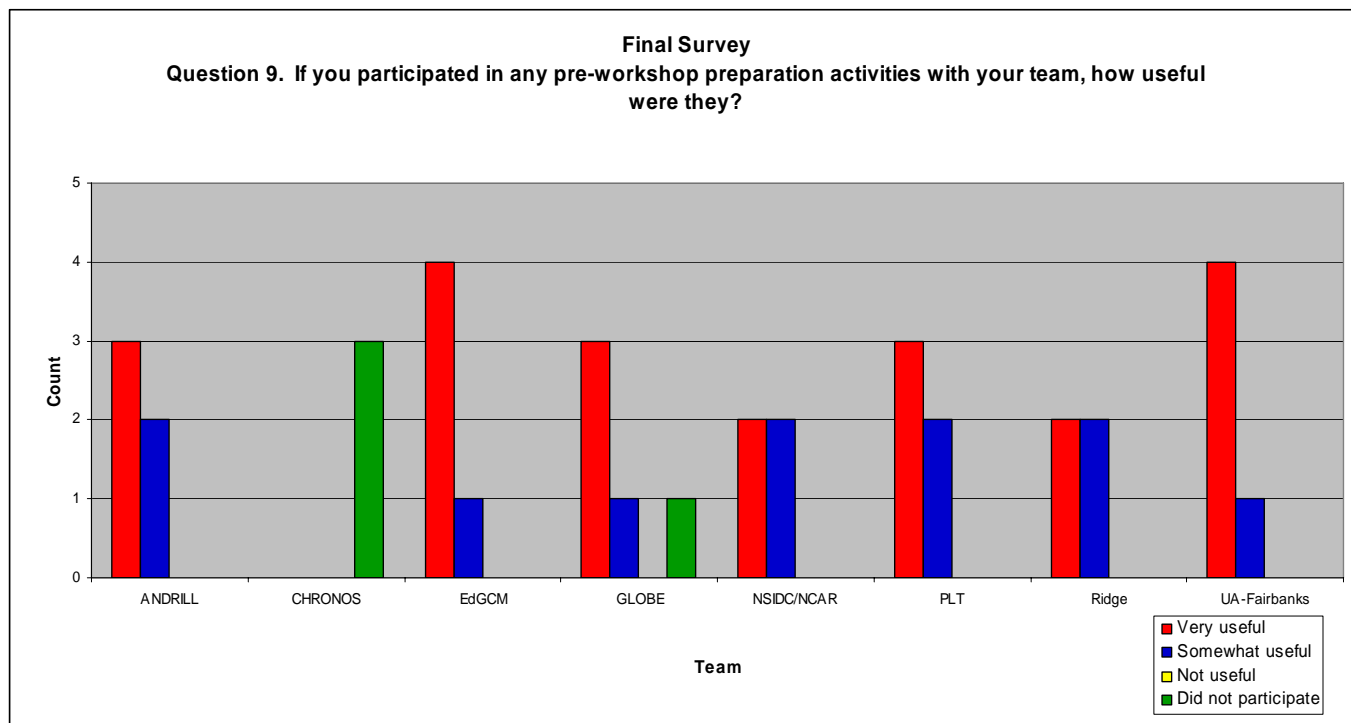
Figure 39. Usefulness and participation in pre-workshop activities, disaggregated by team.

Twenty respondents provided comments when respondents were asked, Please comment on what would be the most useful pre-workshop preparation activities. Twelve respondents mentioned the telecons as being useful. Five noted that it helped to have contact and planning opportunities. Three people made suggestions for improvements. Comments were as follows (with teams listed in brackets after each comment):

Telecons were useful
- *We skyped/conference called 3-4 times which was useful. [ANDRILL]*
- *Our last conference call was good for hashing out some thoughts prior to coming here. Also, we met informally here before the share fair, and that was great for starting to get to know each other personally. [EdGCM]*
- *The conference calls (2) were really helpful. [EdGCM]*
- *Teleconferencing [GLOBE]*
- *Telecon - data prep [NSIDC/NCAR]*
- *Several conference calls, but the team kept changing making cohesion difficult, we came from very different backgrounds. [PLT]*
- *Teleconferencing of team members, access data web-site & sample EET [PLT]*
- *The telecon was useful to bring everyone together. [UA-Fairbanks]*
- *The telecon with discussion of chapter idea & creation of draft data sheet. [UA-Fairbanks]*
- *Conference calls & email [UA-Fairbanks]*
- *As facilitator of the pre workshop telecoms I find it masks my job much easier at the workshop.[Facilitator]*
- *Conf calls were helpful [PLT]*

Team planning was helpful
- *It helped to have the beginning of a plan & the data chosen before we got here. [ANDRILL]*
- *Having a coherent idea of what exactly we will be producing - but this is from all of us being too busy to spend the time going through existing activities. [ANDRILL]*
- *We all arrive with the data sets & material that we needed. [ANDRILL]*
- *Important to hit the ground running. [EdGCM]*
- *Initial contact & preliminary discussions [PLT]*

What could have been improved
- *Add the web ex or other online desktop sharing tool. Just phone is not useful. [GLOBE]*
- *We could have used more preparation in advance to plan which specific or how data could be used. [Ridge/ROSCOE]*
- *Though unrealistic, it would have been great to have a fuller understanding of what we were going to create before arriving. [Ridge/ROSCOE]*

Other comments
- *I didn't have much time to engage. [GLOBE]*
- *This is a good idea! [GLOBE]*

Question 10 of the Final Survey asked, **What do you plan to do in your work as a result of this workshop that will facilitate the use of data? Ten respondents mentioned using data in their work or modifying data for educational use. Ten people described using information in education and professional development work. Six mentioned completing or using the EET chapters.** Responses were as follows:

Data plans
- *I do have a better idea of how that data can be used so will keep that in mind for future work. [ANDRILL]*
- *I am currently writing labs for an intro oceanography class. I plan to use data to build these labs.   [ANDRILL]*
- *More aware of usability of the tooling and the data. [ANDRILL]*
- *Some updates to how we present data. [CHRONOS]*
- *Work to modify data slightly to make it easier to use [EdGCM]*
- *Keep making data available as needed or modified to complete the project. [PLT]*
- *I will identify data that is appropriate for K-12 levels, incorporate to my undergrad courses. [Ridge/ROSCOE]*
- *I am a teacher and a grad student. I intend to use this data and others. [Ridge/ROSCOE]*
- *Easy access & format [NSIDC/NCAR]*
- *I will try to use the data mentioned in this workshop to enhance my teaching and scientific research. [GLOBE]*

Education and professional development plans
- *Disseminate it to K-12 teaches in state [CHRONOS]*
- *Incorporate this in my professional development technology trainings in my school. [CHRONOS]*
- *Use in teacher PD programs I run [EdGCM]*
- *Hope to utilize the EdGCM model in my classes. [EdGCM]*
- *Share the tools with the teachers I work with in our geospatial technologies [GLOBE]*
- *Use it in teacher workshops. [GLOBE]*
- *I will be using this chapter in ongoing teacher workshops on GLOBE and on GIS. [GLOBE]*
- *I am working with a team of h.s. teachers with an NSF grant. I plan to bring our project to that group during the school year 09-10. [PLT]*
- *I hope to develop new activities using this model. [ANDRILL]*
- *Continue to implement in courses. Continue to provide PD for 9-12 educators using data. [UA-Fairbanks]*

EET chapter completion and use plans
- *I hope we will continue to have team interactions that will not only generate a great EET chapter, but ideas for other projects as well. [EdGCM]*
- *Use our EET chapter and perhaps others in my classes [PLT]*
- *Explore & use EET lessons at secondary science level [PLT]*
- *I will be using more of the EET chapters in my geology course (high school level) [Ridge/ROSCOE]*
- *I will be using some of the EET data as tools in my undergrad lab. [UA-Fairbanks]*
- *Get the chapters & data sheets done [Facilitator]*

Other
- *NA [NSIDC/NCAR]*
- *I plan to introduce the IDV software to the training program in our center, the African Regional Center for Space Science and Technology Education CARCSSTE) located in Nigeria. This center, which is affiliated with the United Nations, serves English speaking African Countries. [UA-Fairbanks]*

Question 11 asked participants to rank the value of the printed materials distributed at registration. Results are summarized in Figure 40.

Printed materials received for the meeting were mostly ranked Above average or Excellent.
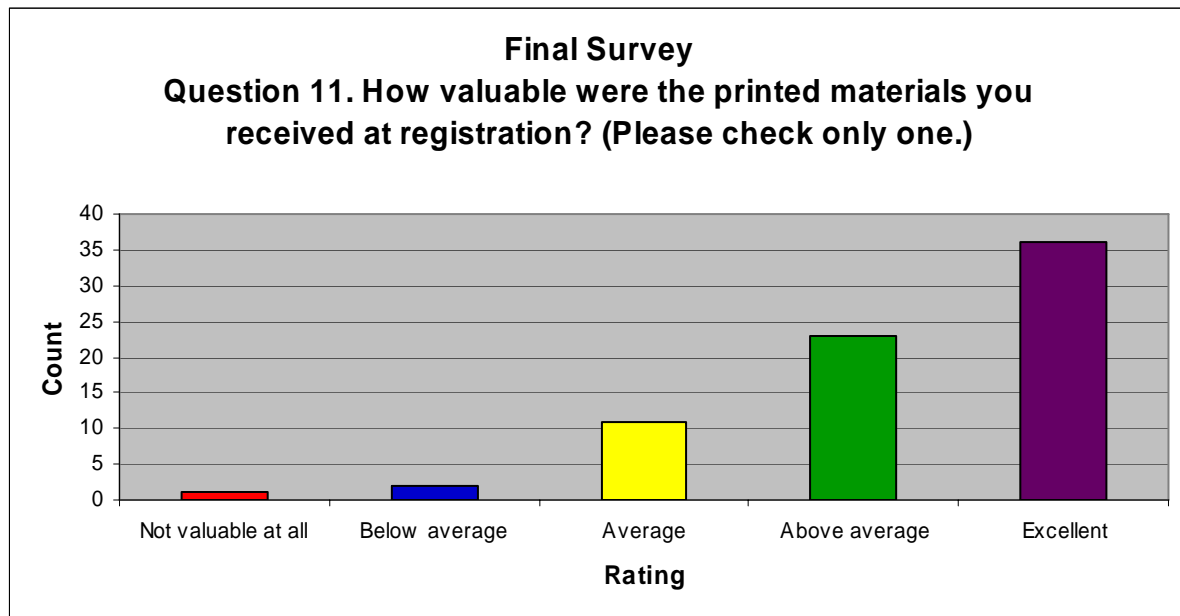
Figure 40. Rating of the printed workshop materials.

Ten people commented on the printed workshop materials. Five were appreciative. One person would have liked multiple copies of the Climate Literacy brochure. The comments were as follows:

- *Il liked the using data booklet.*
- *Agenda maps etc very helpful*
- *Didn't look at them*
- *Would like multiple copies of climate literacy.*
- *All were on Wiki*
- *All of the logistical information was very useful.*
- *The schedule and description of tool time sessions was very helpful.*
- *The materials at registration were good as well the information from mike ahead of time*
- *Only what was needed - but nothing missing*
- *Electronic copies prior to workshops could help save in printing.*

Questions 12, 13, 14, and 15 addressed the success of the workshop logistics and websites (see Figure 41).

Online registration was found to be easy to use by thirty-seven respondents (four ranked it Fair). The Wiki and information websites were considered to be quite useful overall. The meeting facilities were ranked well above average (all but two ranked them Above Average or Excellent). A roughly equal number of respondents ranked the housing and food Average, Above average, or Excellent, with only one person ranking it Extremely Poor.
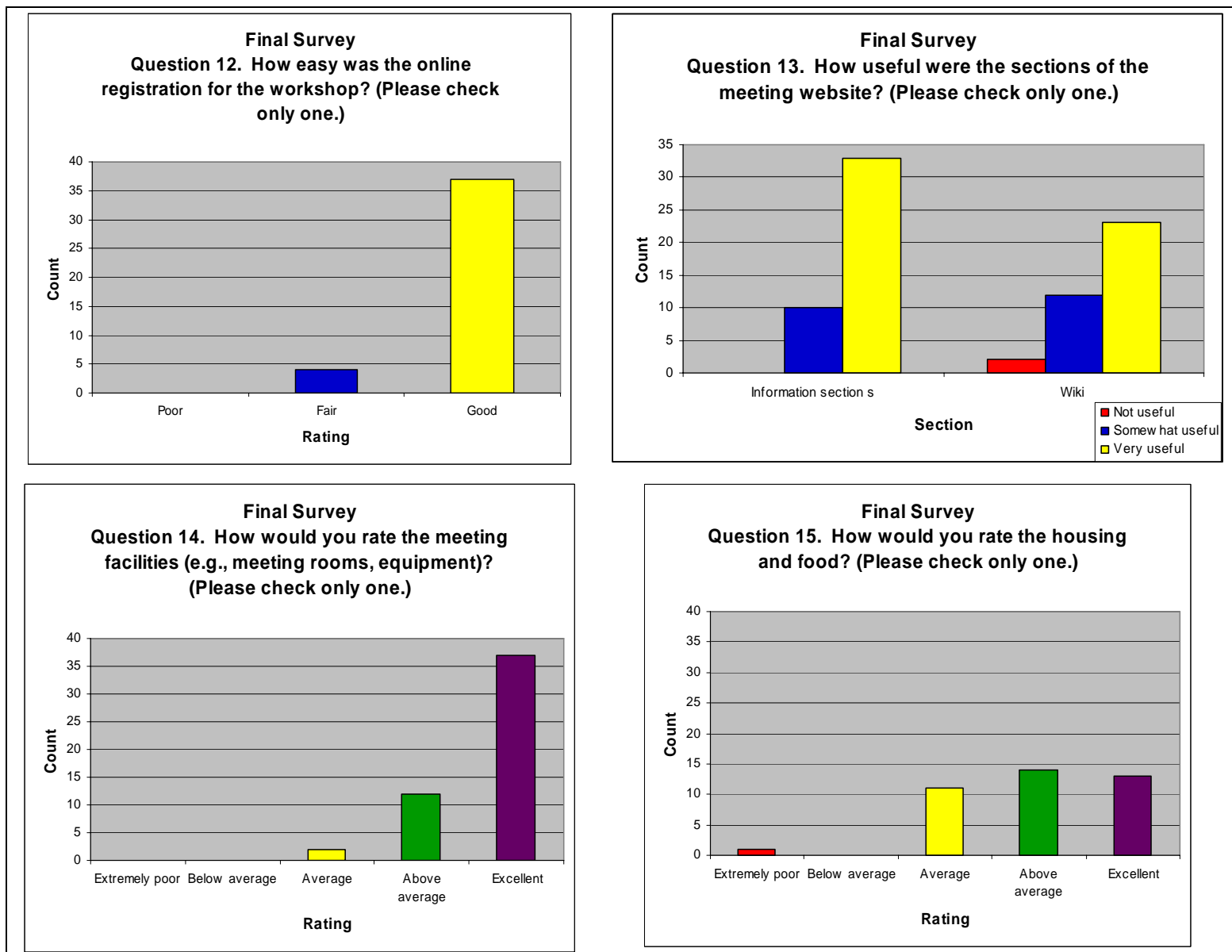
Figure 41. Ratings of online registration, website, facilities, housing, and food.

Comments on the online registration were appreciative and included the following:

- *Thank you fore everything you did to make it possible for me to attend with my disability.*
- *The online component of the workshop was excellent.*
- *Super Easy!*
- *Even we did a good job on this.*

There were no comments specifically addressing the informational section of the website; however, there were eight comments regarding challenges in using the Wiki and one positive comment about it. Comments on the website and Wiki were as follows:

Positive comment on the Wiki
- *I am finally comfortable and see value of the wiki. I would add some curriculum development resources to it…such as links to national standards and curriculum development ideas… like the 5e cycle of UBD.*

Challenges with the Wiki
- *I had a lot of problems with accessing/editing the Wiki. No idea why!*
- *Used the Wiki - and its really good compared to most I've used - but I still don't like Wikis. Google docs works better than any Wiki.*
- *The wiki is a bit of a pain. A simple discussion board would be easier, faster, and more effective.*
- *Could not log into Wiki, this needs to be available before the workshops as a [re-registration task.*
- *Formatting a little tricky at times (wiki)*
- *Editing wiki was difficult & frustrating. I had to recreate log on once, didn't have editing permissions.*
- *Once we get wiki login problems solved.*
- *It could have been useful. We just didn't use it.*

Other comments
- *JOB WELL DONE!*

All but one comment on the meeting facilities were positive; the negative comment (and one slight mention in another comment) was about the network problems. Comments were as follows:

Appreciative comments
- *Lovely venue - very nice accommodations & food.*
- *Very nice meeting rooms.*
- *Nice location, nice campus, good support for wiki, projectors, etc.*
- *Great! Loved our meeting rooms and all facilities*
- *I wish we had such facilities at home!*
- *Everything worked well.*
- *Excellent access to audiovisual and generally very well organized from a facilities standpoint.*
- *Some issues with tech lab, but overall great*
- *Campus Beautiful!*
- *WOW!*
- *They were good and having the extra power strips was great.*

Network problems
- *Internet access was beastly!*

All ten comments on the food were positive except for the quality and limited availability of coffee. Comments on the housing were largely tolerant of them being dorms (five comments), though several seemed pleased with them (four comments). Two people reported being cold in their dorm but that housing was able to supply them with an extra blanket.

- *Beautiful setting for a workshop.*
- *Nice facilities and good food.*
- *Food was very good*
- *I was expecting a single room and got a double but other than that it was fine - I think the dorm like was good for getting to know people.*
- *Food was good, thank god I don't have to live in dorms!*
- *Hey, they were dorms, but they were fine - food was good. Really impressed with vegetarian & vegan options.*
- *I didn't stay at the college. Food was fine.*
- *Food was great. Housing was very nice as well.*
- *Coffee earlier please. I was up 6am everyday and wished I could go get a cup of joe.*
- *Food great, housing a bit rough*
- *Except the cafeteria coffee!*
- *Roll of paper towels, box of tissues, a coffee maker that works!*
- *Food was great! Housing was adequate.*
- *Double Wow!*

- *I was amazed that they compost and after our request the coffee got stronger!*
- *Housing was fine and food was great*
- *The housing reception desk was very friendly & cooperative. First night room was really cold but after I got a blanket from the reception all was well.*
- *Having soap in the rooms would have been nice. I t was also cold in my room but I was able to get an extra blanket.*

Question 16 asked for any additional comments.

The twenty-four summary comments on the workshop included seventeen that were appreciative of the workshop. A few of these included suggestions as well. In the comments below, the suggestions are separated from the purely appreciative parts of the comments. Two people were pleased they had learned to use new software. In the suggestions for changes, there were very few common threads; most were individual suggestions different from the others.

Appreciative comments.
- *I thought the workshop ran very smoothly & was well organized. I feel good about my contributions to the project and about the new tools that I learned about. The workshop was very worthwhile.*
- *Very laid back yet productive*
- *- loved the simplicity of a college campus (and the facilities) - the smaller group (ie my team) was fantastic - I am excited to have learned a very cool software - I think these workshops should be every 6 months and more teachers invited!*
- *This was my 4th accessdata, and it is truly one of the best run, most productive things I'm involved with.*
- *A meeting like this is perfect - great mix of people & enterprise.*
- *Really enjoyed this meeting - appreciate the opportunity to work with educators in a focused setting.*
- *I really appreciate all your extra efforts on my behalf to accommodate my disability.*
- *Great experience.*
- *Everything is great.*
- *Excellent - great to work with folks from other programs around data*
- *I had never done anything like this before, and really had no idea what to expect. I was impressed.*
- *Workshop was good. We were productive.*
- *I am so glad I had the opportunity to participate this year. I am really excited about finishing out work on this chapter and getting it LIVE for teachers and students to use.*
- *Fantastic Workshop! I learned a lot, made some great connections.*
- *Outline of module was very helpful.*
- *Very well done. Shame that this the last workshop, I hope that what AccessData has learned on how to facilitate productive meeting will be captured and passed on to other groups through SERC.*
- *Very good.*

Increase curriculum emphasis
- *A keynote speaker on curriculum development in particular would be very helpful.*
- *Would like to have a bit more instruction or discussion on the basics/fundamentals or curriculum development.*

Wiki problems
- *Only suggestion for improvement is to not use the wiki. It adds a level of confusion that is unnecessary.*

Teacher perspective
- *Perhaps a case story of how these tools are used by teachers and what their impressions are.*

Age group for chapters unclear
- *We are still uncertain, as a group, the age group we are supposed to be targeting - so perhaps that could be make clearer… but this is not such an important thing.*

Tool time tutorial
- *It would have been helpful if there was a pre-workshop tutorial for the tool time that we chose so that there weren't as many frustrations going into the workshops and we could move ahead from the basics.*

Group report-out
- *I think it would be better to listen to all groups but they would have to be limited to less time. I would like to hear about what the other teams wrote down.*

Future of data in education
- *Friday keynote was a great overview of Roberta's worth at NCAR. It was affirming to teachers to some extent, but didn't provide ideas on motivation for future efforts in using data in education. Per our team's discussions following the presentation.*

- *Preparation should be made under the guide of team leader*
- *Disappointed with lack of diversity. Attendees very heavy to 1-focus researchers and educators at college level.*
- *On the evaluation form question four there is only 1 most*

Interviews

Four months after the workshop, telephone interviews were conducted with one representative from each of the teams. The interview questions were the following:

> **How many AccessData or Data Services Workshops have you been to over the years?**

> **What difference has attending the workshop made to you and your work?**

> **What features of the workshop do you consider the most valuable?**

> **What makes the breakout sessions valuable?**

> **How productive were team interactions before and after the workshop?**

> **How can we improve the productivity and communications among your team members before and after the workshop?**

The results of these interviews are summarized below:

How many AccessData or Data Services Workshops have you been to over the years?

Two of the interviewees had been to four previous workshops and one had been to two. This was the first workshop for the other five. Primary workshop roles for these participants were Data Specialist (2), Scientific Researcher (2), Curriculum Developer (2), Tool sSpecialist (1), and Educator (1). The following section summarizes the responses to each of the questions.

What difference has attending the workshop made to you and your work?

Three of the respondents appreciated how attending the workshop has enhanced their opportunities and abilities to make their resources (data, tools) available and effective for educators to use in the classroom. Three people were enthusiastic about bringing the resources they developed in the workshop to teachers they interact with as part of their work.

One Data Provider said the workshops have been important because they have made him more aware of what educators go through when they try to use scientific data in the classroom. Another person said the workshop brought a team together with a common goal of getting a particular data tool available to teachers in an organized way, encouraging technology use in the classroom; this team has already given a presentation on their chapter to a science teacher conference and plan to do more. Another interviewee emphasized that the workshop provided the time to get something important done, which wouldn't have happened otherwise.

A four-time attendee commented that the workshops have given valuable experience in being a good facilitator, which enhances productivity in a group setting.

Two people said they had made good contacts at the meeting from the networking opportunities.

What features of the workshop do you consider the most valuable? (and if breakout sessions are mentioned, What makes the breakout sessions valuable?)

All eight participants interviewed said that the breakout sessions were one of the most valuable things about the workshop. Two people also mentioned the keynote talks as especially valuable, and one mentioned the Tool Time sessions (from the point of view of a presenter—he appreciated the opportunity to present their tool and get feedback on it during the session). Two people didn't think the Tool Times were valuable; one said they already knew about all the tools beforehand so it was wasted for them; the other didn't think the Tool Times were as good as in past years—they said the instructors didn't seem as experienced.

One scientist emphasized how rare an opportunity it was to get together with educators and prepare materials that can be used to enhance science education on a broad scale. He commented, *I can't be in every classroom, but this is a way for my information to get into many classrooms.*

Characteristics of the breakout sessions that were considered especially important were the following:
- how rewarding it is to create a completed chapter
- being able to work through questions with the whole team focused on the process; being face-to-face is much more productive than trying to do it via telecon, email, or other remote method
- the setting was superb
- the small group size with each person having an area of expertise encourages each person to contribute (even if they feel a little bit intimated by the expertise of others in the group)
- having an experienced facilitator in each group is very helpful
- "the gift of time" to accomplish the task; it wouldn't happen without this workshop providing the time
- the focused structure of the workshop allows work to proceed without distractions
- the opportunity for scientists to work with educators in person to develop quality materials for the classroom
- having deadlines was very productive; if they hadn't had deadlines they could have debated the entire time
- one respondent noted that it was essential to make a lot of progress at the workshop, because then it would make everyone realize what a shame it would be to not complete it—if it's nearly done, everyone will be motivated to wrap it up

How productive were team interactions before and after the workshop?

Overall, the team interactions seem to have been more effective than in past years, especially during the time since the end of the workshop. Everyone interviewed had some idea of what stage the chapter was in and what remained to be done. This is an enormous improvement over results from interviews after previous workshops.

Four of the respondents described a great deal of interaction with fellow team members before the workshop. Three of them were friends or colleagues already with their fellow team members so it was easy to meet often and get the ball rolling on the chapter. One person described the poster that their team created for use at the Share Fair the first night; they also worked together after the workshop to present their project at a science teacher conference.

Three people specifically mentioned how helpful it was to have telecons with the workshop facilitators before and after the workshop to keep them on track and enable their progress. Four commented on how their Curriculum Developer is busy working on wrapping their chapter up. One Scientist noted that because of the high degree of competence of their Curriculum Developer and the Scientist's own drive to complete the chapter, they were very productive. Only one team seems to have some difficulties moving ahead with their chapter, but they noted that post-workshop telecons from workshop facilitators was getting things moving again. One participant expressly asked for additional deadlines; this would be effective motivation in his opinion.

How can we improve the productivity and communications among your team members before and after the workshop?

Three people said how very helpful the telecons with workshop facilitators were before and after the workshop. These telecons got them back on track, gave them guidance in the next steps to follow, and gave them ideas when they were stuck. For some teams, more telecons with the facilitators would have been even more helpful.

Three respondents mentioned online resources their groups have been using. One uses live chats and feels that they are very effective for meetings like those needed by the chapter teams; another uses a group hub site. Another person commented that the workshop Wiki was very difficult to use (e.g., one described it as *the most annoying thing I've ever had to work with*) and much better resources were available—two suggestions were WebEx and DimDim. One participant offered to set up a searchable intellectual commons site for continued communication among all workshop teams for posting of resources, uploading files, and discussions about the progress on the chapters.

Another multiple-year attendee noted that the Content Management System for the chapters is difficult to use; it drove away one of their Curriculum Developers and they had to find someone else to put things together. Perhaps there should be a session in using the CMS at the workshop itself for the Curriculum Developers.

Other Interview Comments

During the workshop, one team was perplexed about the final report-out; they felt they were at a disadvantage because nobody on their team had done this before and they needed more guidance on how to do it.

One past-participant noted that the productivity of the group can depend on the individuals involved; during one year, their team spent too much time trying to get one member come through on the work they said they would do.

One respondent mentioned a challenge their team had, which was to find the best language to use in developing their activity for high school.

A Tool Time presenter noted that there was a problem with the lab setup for the session, but overall the venue at Colorado College was great.

Every person interviewed said how much they enjoyed the workshop and several hoped that somehow they could be continued. Three noted how effective the model of the workshop is and lamented that there isn't anything else like this available. One pointed out that what made it possible was that it was fully funded; there would be no way their group could have participated without full funding.

Some comments were made that also appeared a few times in the survey responses, as follows:

- the dorms were a little rough to stay in (especially for tall people).
- it would be nice to see the completed chapters that other teams have created.
- one concern is the dissemination of the final product; one participant suggested that part of each team's task would be to promote the finished chapter (and the EET in general) at conferences, etc.

Appendix I—Evaluation Instruments
AccessData Workshop 2009
Data Use Questionnaire

We are interested in attendees' perspectives on the use of data in education. We hope to improve our understanding of the ways in which data are being used and the ways in which data use may be made easier. This information may be used to help define future projects that focus on bringing data into the classroom. Any identifying information will be kept confidential. Thank you for your help.

1. Which is your work team?
_____ANDRILL
_____CHRONOS
_____EdGCM
_____GLOBE
_____NSIDC/NCAR
_____PLT
_____Ridge
_____UA-Fairbanks
_____I'm not on a team

2. What is your primary professional role at this workshop? (Please check only one.)

_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

3. Please check any other professional activities you participate in:

_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

4. For which learning goals have you successfully used data *within educational contexts*? (Please check all that apply.)

____Understanding weather
____Understanding the ocean
____Understanding geology/seismology
____Interpreting satellite imagery
____Understanding the scientific method
____Pattern recognition
____Meeting science standards
____Personal exploration and learning
____Climate
____Environmental science
____Other; please describe_____

5. Which of the following data have you used successfully? (Please check all that apply.)

____Sea surface temperature
____Tree ring data
____Climate/weather model simulation output
____Weather and climate observations:
      ____Precipitation
      ____Temperature
      ____Humidity
      ____Winds
      ____Cloud cover
      ____Drought indices
      ____Hurricanes
      ____Tornados
      ____Other weather and climate observations; please list_____
____Census
____Earthquake/volcano
____Satellite imagery (e.g., GOES, Landsat, MODIS, SeaWiFs)
____Topography data
____Other; please list_____

6. Which of the following data *formats* have you used successfully? (Please check all that apply.)

____GIS (Geographic Information System)
____Image data (e.g., JPEG, GIF, TIFF)
____Text/ASCII (e.g., tab-delimited text for spreadsheet use, .xls)
____Google Earth (KML, KMZ)
____NetCDF (Network Common Data Format)
____HDF-EOS (Hierarchical Data Format-Earth Observing System)
____GeoTIFF (Georeferencing Tagged Image File Format)
____Other; please list_____

7. Which of the following data *sources* have you used more than once? (Please check all that apply.)

____DOD (Department of Defense)
____EPA (Environmental Protection Agency)
____GLOBE (GLobal Observations to Better the Environment)
____NASA (National Aeronautics and Space Administration)
____NCAR (National Corporation for Atmospheric Research)
____NOAO (National Optical Astronomy Observatories)
____USGS (United State Geological Survey)
____NSIDC (National Snow and Ice Data Center)
____IRIS (Incorporated Research Institutions for Seismology)
____EarthScope
____UNAVCO
____NGDC (National Geophysical Data Center—NOAA)
____NCDC (National Climatic Data Center—NOAA)
____NODC (National Oceanographic Data Center—NOAA)
____NWS (National Weather Service—NOAA)
____Ridge
____ANDRILL (ANtarctic geological DRILLing)
____CHRONOS
____EdGCM (Educational Global Climate Modeling)
____FIG (Forest Inventory Growth)
____Other; please list _____

8. Are the tasks of reformatting and subsetting data significant obstacles to your use of data?

_____ Yes   _____ No

If yes, what would be helpful in overcoming these obstacles?

_____

_____

9. What data analysis procedures have your end-users/learners performed on the data?   (Please check all that apply.)

____Statistics
____Basic math
____Graphs
____Visualization/Imaging
____Queries
____Classification
____Plotting/Mapping
____Quality control
____Combine data from different sources
____Other; please describe _____

10. Have you made any attempts to obtain and use data sets that were NOT successful?

_____ Yes   _____ No   _____ No opinion

If yes, what barriers did you encounter?   (Please check all that apply.)

____Couldn't locate data
____Data set was incomplete
____Broken links
____Poor documentation
____Did not have access to required software
____Required computer hardware was not available
____Insufficient bandwidth/connection
____Unusable format/unknown file extensions
____Software too difficult to use
____Terminology/acronym problems
____Dataset too large
____Proprietary restrictions
____Prohibitive costs
____Training on use is not available
____Too much time required to use effectively
____Other; please describe_____

_____

11. What types of instruction or support are most helpful to you when using specific data sets? (Please check all that apply.)

____Email assistance
____Phone support
____FAQ
____Glossary of terms
____Examples
____Step-by-step instructions
____Face-to-face training workshops
____Online tutorial
____Live demos
____Videos
____Reference manual/documentation
____Blogs
____Facebook
____Webinars
____Online workshops
____Other; please describe_____

Thank you for your feedback. Please return this form to a workshop staff person or to the drop-box at the registration table.

AccessData Workshop 2009
Thursday Feedback Questionnaire

Please answer the following questions for us so that we can determine what we did well and what we can improve. Any identifying information will be kept confidential.

1. Which is your work team?
_____ANDRILL
_____CHRONOS
_____EdGCM
_____GLOBE
_____NSIDC/NCAR
_____PLT
_____Ridge
_____UA-Fairbanks
_____I'm not on a team

2. What is your primary professional role at this workshop? (Please check only one.)
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

3. Please check any other professional activities you participate in:
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

4. What aspect(s) of the workshop today and yesterday evening did you find the most valuable? (Please check all that apply.)
_____Wednesday evening's demo session and share fair
_____Keynote talk – Steve Ackerman – Using Data To Improve Learning and Improve Teaching
_____Team breakout sessions
_____Tool Time – Hands-on lab session
_____Networking with others in my field
_____Networking with those in other fields
_____Other; please describe _____

5. Which Tool Time Session did you attend?
_____EdGCM
_____GeoMappApp
_____PSICAT

6. How would you rate the balance of the workshop today?

	Too much	Just right	Too little
Talks			
Hands-on learning			
Team breakout sessions			
Emphasis on data and tools			
Emphasis on education and curriculum			

7. What aspects of today's session would you have changed and how?

_____

_____

_____

8. Did you attend last night's demo session and share fair?

____Yes, I was a presenter
____Yes, I attended, but I was not a presenter
____No, I did not attend

If yes, in what ways was it valuable to you?

_____

_____

9. Did you attend the field trip?

____Yes   ____No

If yes, what are your impressions of the trip?

_____

_____

Thank you for your feedback. Please return this form to a workshop staff person or to the drop-box at the registration table.

AccessData Workshop 2009
Friday Feedback Questionnaire

Please answer the following questions for us so that we can determine what we did well and what we can improve. Any identifying information will be kept confidential.

1. Which is your work team?
_____ANDRILL
_____CHRONOS
_____EdGCM
_____GLOBE
_____NSIDC/NCAR
_____PLT
_____Ridge
_____UA-Fairbanks
_____I'm not on a team

2. What is your primary professional role at this workshop? (Please check only one.)
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

3. Please check any other professional activities you participate in:
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

4. What aspect(s) of the workshop today did you find the most valuable? (Please check all that apply.)
_____Keynote talk – Roberta Johnson, Bringing Climate Change to the K-12 Classroom: Approaches at NCAR and Lessons Learned
_____Team breakout sessions
_____Tool Time - Hands-on Lab Session
_____Networking with others in my field
_____Networking with those in other fields
_____Other; please describe _____

5. Which Tool Time Session did you attend?
_____Google Earth
_____IDV
_____My World GIS

6. How would you rate the balance of the workshop today?

	Too much	Just right	Too little
Talks			
Hands-on learning			
Team breakout sessions			
Emphasis on data and tools			
Emphasis on education and curriculum			

7. What aspects of today's sessions would you have changed and how?

_____

_____

Thank you for your feedback. Please return this form to a workshop staff person or to the drop-box at the registration table.

AccessData Workshop 2009
Final Day Questionnaire

Please answer the following questions for us so that we can determine what we did well and what we can improve. Any identifying information will be kept confidential.

WORKSHOP CONTENT
1. Which was your work team?
_____ANDRILL
_____CHRONOS
_____EdGCM
_____GLOBE
_____NSIDC/NCAR
_____PLT
_____Ridge
_____UA-Fairbanks
_____Not on a team

2. What is your primary professional role at this workshop? (Please check only one.)
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

3. Please check any other professional activities you participate in:
_____Curriculum Developer
_____Data Representative
_____Educator
_____Scientific Researcher
_____Software Tool Specialist
_____Other; please describe _____

4. What aspect(s) of the workshop overall did you find the most valuable? (Please check all that apply.)
_____Field trip
_____Opening night demo session and share fair
_____Thursday Keynote—Steve Ackerman – Using Data To Improve Learning and Improve Teaching
_____ Friday Keynote— Roberta Johnson, Bringing Climate Change to the K-12 Classroom: Approaches at NCAR
_____Tool Time—EdGCM
_____Tool Time—GeoMappApp
_____Tool Time—PSICAT
_____Tool Time—Google Earth
_____Tool Time—IDV
_____Tool Time—My World GIS
_____Team breakout sessions
_____Final report out of teams
_____Networking with others in my field
_____Networking with those in other fields
_____Other; please describe _____

5. How would you rate the balance of the workshop overall?

	Too little	Just right	Too much
Talks			
Hands-on learning			
Team breakout sessions			
Emphasis on data and tools			
Emphasis on education and curriculum			
Overall time spent on evaluation surveys			

6. What aspects of the workshop overall would you have changed and how?

_____

_____

7. To what extent did the opening night demo session and share fair facilitate your learning about data access, tools, and educational uses of data?   (Please check only one.)

Not at all	Slightly	Moderately	Well	Extremely well

Additional comments:

_____

_____

8. How well did your work team work together? (Please check only one.)

Not at all well	Slightly	Moderately Well	Well	Extremely well

Please comment on what did and didn't work in your team:

_____

_____

9. If you participated in any pre-workshop preparation activities with your team, how useful were they?

Not Useful	Somewhat Useful	Very Useful	Did Not Participate

Please comment on what would be the most useful pre-workshop preparation activities:

_____

10. What do you plan to do in your work as a result of this workshop that will facilitate the use of data?

_____

_____

WORKSHOP LOGISTICS

11. How valuable were the printed materials you received at registration? (Please check only one.)

Not Valuable At All	Below Average	Average	Above Average	Excellent

Additional comments on the printed materials you received at registration:

_____

_____

12. How easy was the online registration for the workshop? (Please check only one.)

Poor	Fair	Good

Additional comments:

_____

_____

13. How useful were the sections of the meeting website? (Please check only one.)

	Not useful	Somewhat useful	Very useful
Information sections			
Wiki			

Additional comments:

_____

_____

14. How would you rate the meeting facilities (e.g., meeting rooms, equipment)? (Please check only one.)

Extremely Poor	Below Average	Average	Above Average	Excellent

Additional comments:

_____

_____

15. How would you rate the housing and food? (Please check only one.)

Extremely Poor	Below Average	Average	Above Average	Excellent

Additional comments on housing and food:

_____

_____

GENERAL IMPRESSIONS OF WORKSHOP

16. Please use the space below to add any other comments you have, suggestions for improvements at future workshops, or any other ideas you would like to share with us.

_____

_____

_____

_____

17. If we may contact you further about your experience, please provide your contact information here:

_____

Please complete and turn in this form to a workshop staff person or to the drop-box at the registration table during your final day. Your feedback and comments will help to shape future AccessData workshops. Thank you for your participation!

Appendix II—Agenda

Agenda

2009 AccessData Workshop
Colorado College, Colorado Springs, CO

Tuesday, June 2, 2009

Pre-workshop registration upon arrival. Loomis Hall Lounge (Maggie Reinsvold)

Wednesday, June 3, 2009

7:45 am - 3:00 pm Meet at Loomis Lounge at 7:45 AM for pre-workshop field trip to Garden of the Gods, a trip up Pikes Peak on the Cog Railway, and Manitou Springs. (Requires advanced registration by April 1, 2009 using the workshop registration page. Guests are invited at a cost of $35/each. Contact Mike Taber, mike.taber@coloradocollege.edu, for more information.)

3:00 - 9:00 pm Workshop Registration, Loomis Hall Lounge (Maggie Reinsvold)
6:00 - 9:00 pm Demo Session and Share Fair, McHugh Commons, hosted bar and hors d'oeuvres

Thursday, June 4, 2009

7:00 - 8:30 am Workshop Registration, Loomis Lounge (Maggie Reinsvold)
(Turn in Data Use Questionnaires-yellow by 8:30 am)
7:00 - 8:30 am Breakfast available in Rastall Dining Hall, Worner Center
8:30 am Workshop Begins Gaylord Hall, Worner Center
8:30 - 8:45 am Welcome, Review of Logistics - Mike Taber, Maggie Reinsvold
8:45 - 8:55 am Overview of AccessData Workshop Goals - Mike Taber
8:55 - 9:40 am Keynote Presentation - Steve Ackerman, Using Data to Improve Learning and Improve Teaching
9:40 - 10:00 am Break
10:00 am - 12:00 pm Team Breakout - Session 1
Meet your team members, Learn about the data, tools, and expertise represented on your team
TEAM BREAKOUT ROOMS:
(All rooms in Worner Center)
Rm 211 (Edwards Room) - ANDRILL
Rm 212 (Gregg Room) - CHRONOS
Rm 213 (Hayes Room) - EdGCM
Rm 215 (Hershey Room) - GLOBE
Rm 216 (Howbert Room) - NSIDC/NCAR
Rm 218 (Peabody Room) PLT
Rm 235 (East side of 2nd floor) RIDGE
Gaylord - UAF

12:00 - 1:00 pm Lunch in Rastall Dining Hall, Worner Center (Sign up for dinner)
1:00 - 2:30 pm ToolTime Session 1 - Armstrong Hall
Featured Tools and Rooms
Rm 301 - spare lab
Rm 326 - PSICAT, Josh Reed

Rm 353A - GeoMapApp, Vicki Ferrini
Keck Lab EdGCM - Mark Chandler

2:30 - 2:45 pm Break
2:45 - 4:20 pm Team Breakout - Session 2
4:20—4:30 pm Day 1 Evaluation Survey - Complete and submit in breakout rooms
5:00-7:00 pm Dinner on your own (Select restaurants with pre-reservations available for sign up - free shuttle to downtown Colorado Springs)

Friday, June 5, 2009

7:00 - 8:30 am Breakfast available in Rastall Dining Hall, Worner Center
8:30 - 8:45 am Welcome, Daily Logistics Overview - Mike Taber, Gaylord Hall, Worner Center
8:45 - 9:30 am Keynote Presentation - Roberta Johnson, Bringing Climate Change to the K-12 Classroom: Approaches at NCAR and Lessons Learned
9:30 - 9:45 am Break (Check in with Maggie on Departure Shuttle Schedule)
9:45 - 10:50 am Team Breakout - Session 3
Brainstorm possible storylines for educational activities
10:50 - 11:00 am Break as needed
11:00 am - 12:00 pm Team Breakout - Session 4
Evaluate suggested storylines and perform proof-of-concept checks, select one workable data-use scenario for development
12:00 - 1:00 pm Lunch in Rastall Dining Hall, Worner Center
1:00 - 2:30 pm ToolTime Session 2 - Armstrong Hall
Featured Tools and Rooms
Rm 301 - Spare lab
Rm 326 - MyWorld, Mike Urban
Rm 353A - Google Earth - Steve Kluge
Keck Lab - IDV, Jeff Weber

2:30 - 2:45 pm Break
2:45 - 3:30 pm Team Breakout - Session 5
Develop the case study and outline procedures for data access and analysis.
3:30 - 3:45 pm Break
3:45 - 4:20 pm Team Breakout - Session 6
Flesh out access and analysis procedures with info that will build users' knowledge about the data and tools; suggest ideas for going further.
4:20—4:30 pm Day 2 Evaluation Survey - Complete and submit in breakout rooms
5:00-7:00 pm Dinner on your own (Select restaurants with pre-reservations available for sign up - free shuttle to downtown Colorado Springs)

Saturday, June 6, 2009

7:00 - 8:30 am Breakfast available in Rastall Dining Hall, Worner Center
8:30 - 8:50 am Overview, Logistics, and Thank-yous (last time everyone is all together) - Mike Taber, Gaylord Hall, Worner Center
8:50 - 9:35 am Team Breakout - Session 7
9:35 - 9:50 am Break
9:50 - 11:00 am Final Team Breakout Session
Finalize activity outline. Upload summary PowerPoint Slides and all documents to team Wiki page.

11:00 - 11:15 am Move to report out rooms, make certain team slides are available on projected computer.
Group 1: ANDRILL, CHRONOS, PLT - Gaylord Hall
Group 2: EdGCM, RIDGE, UAF - Rm 213
Group 3: NSIDC/NCAR, GLOBE - Rm 216
11:15 - 11:45 am Team Report Out Sessions
11:45 am - 12:00 pm Complete and submit Final Evaluation Survey-blue

Workshop ends
12:00 pm - Lunch, Rastall Dining Hall