

THEMIS—TIME HISTORY of EVENTS and MACROSCALE INTERACTIONS during SUBSTORMS

2004 SACNAS Workshop

SUBMITTED—August 2005

BACKGROUND

The Society for Advancement of Chicanos and Native Americans in Science (SACNAS) has as its primary aim to promote careers in science and engineering to under-served minorities, particularly Chicanos and Native Americans. Its annual conference offers an educational component for K-12 teachers, providing professional development opportunities for participants teaching minority students.

The foremost aim of the THEMIS E/PO effort is to reach such under-served minority children. Thus, SACNAS's annual meetings serve as an excellent forum for providing professional development opportunities to teachers working with these students.

At the October 2004 SACNAS conference, a total of twenty teachers attended a workshop offered in two similar sessions by the THEMIS staff. This workshop focused on teaching magnetism and exploring the earth's magnetic field. Across the twenty teachers, they reported that they would reach upwards of 1,700 students with these materials and share this information with some 80 other teachers. In the 'Findings' section that follows, the data from all twenty teachers are analyzed in total.

FINDINGS

Workshop Quality—By Components

The end-of-workshop questionnaire asked SACNAS teachers to use a 5-point scale to rate the quality of the various aspects of the session...

- Presenters' knowledge
- Relevance of information
- Presenters' ability to communicate
- Availability/configuration of seating
- Cutting edge information
- Knowledge and skills acquired

Participants' mean responses are graphed in Figure 1.

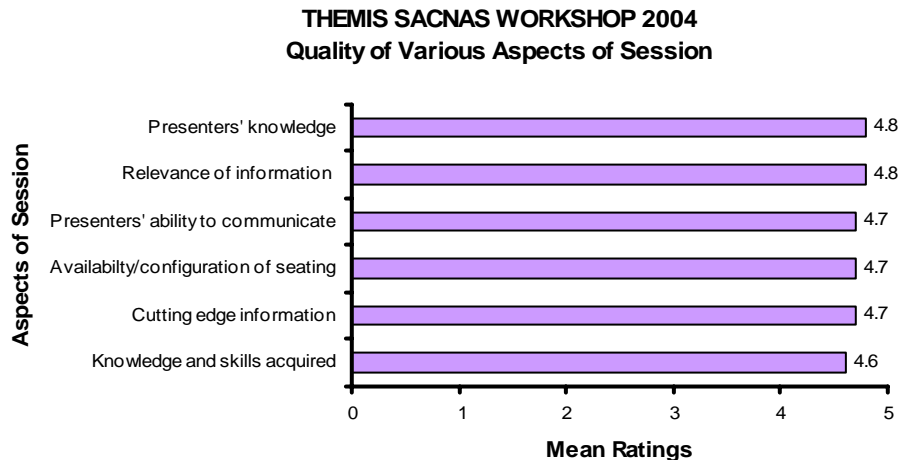


FIGURE 1. THEMIS SACNAS Workshop 2004—Quality of Various Aspects of Session. Teachers' mean ratings (5-point scale) for various aspects of session at the THEMIS SACNAS Workshop 2004 (N=20).

Rating Scale Values Assigned

1=Poor
2=Fair
3=Good
4=Very good
5=Excellent

The teachers rated all aspects of the session very highly—Teachers' mean ratings for the quality of various aspects of the session ranged between 4.6 and 4.8, very nearly the highest rating they could have given, 'excellent—5'.

The presenters' knowledge and relevance of information edged out the other aspects of the session—Teachers' mean ratings for presenters' knowledge and relevance of the information presented (both at 4.8) were the highest among all of the aspects rated—edging out the others by 0.1 and 0.2 of a rating-point.

Teachers reveal that their biggest concern is with the knowledge and skills they acquired—Teachers' indicated that they were slightly less enthusiastic (4.6) about the quality of the knowledge and skills that they hoped to acquire at the workshop. Perhaps a short session is insufficient for building extreme confidence about what teachers feel they know and can 'do'. Nonetheless, a rating of 4.6 is still very positive—but relatively speaking, it is the lowest rating of all session components.

Workshop Quality—Overall Session

The end-of-workshop questionnaire also asked SACNAS teachers to rate the overall quality of the session from a choice of...

- Not as good as other sessions
- About the same as other sessions
- Better than most sessions

Nineteen of the twenty teachers attending the session responded to this question.

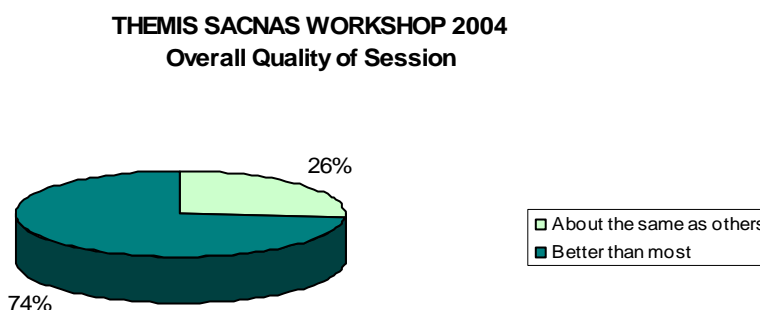


FIGURE 2. THEMIS SACNAS Workshop 2004—Overall Quality of Session. Teachers' ratings of the overall quality of the session from the THEMIS SACNAS Workshop 2004 (N=19).

Nearly three-quarters of the teachers said that this session was better than most—Most of the teachers, 74%, indicated that this session was better than most of the other conference sessions that they had attended.

A little more than a quarter of the teachers rated the session about the same as others—Teachers indicating that this session was about the same as other conference sessions represented 26% of those responding.

None of the teachers said that the session was not as good as others—There were no teachers who said that this session was not as good as others they had attended.

Workshop Usefulness—Career Development

The end-of-workshop questionnaire presented open-ended queries asking SACNAS teachers to indicate how useful this workshop was for their career development. Table 1 summarizes participants' comments.

These comments are clustered according to themes that emerged in content analysis. For each thematic cluster, the percentage of teachers offering a comment in that cluster is provided. Because teachers may have listed more than one way in which the workshop was useful, the percentage of teachers who provided responses totals more than 100%.

Of the 20 teachers attending the workshop, 15 provided responses to this question.

THEMIS SACNAS WORKSHOP 2004 Usefulness of Workshop For Career Development	Teachers (N=15)
Materials/lessons ready to use —Great materials—readily used in classroom; loved the resource guides; thanks for the guides to take home and use immediately; will use these as soon as I can	60%
Positive comments —Excellent; please bring these people back; powerful stuff; the best yet; great ideas for our school	40
Integrate ideas/materials into teaching situation —I plan to use this in my Saturday Science to Upward Bound students of Oklahoma; I will incorporate this information in my ninth grade Science class; I can use this in my classroom to teach Space Science	20
Hands-on activities —Loved the hands-on lessons; learned a lot of hands-on activities about GEMS	13

TABLE 1. THEMIS SACNAS Workshop 2004. Percentages of teachers offering various responses to an open-ended question about how useful the workshop is in their career development. (N=15).

Nearly two-thirds of the teachers cited the materials/lessons as being most useful—Materials and lessons that are ready to use drew the comment of 60% of the teachers, all of whom agreed about their usefulness.

Two-fifths of the teachers took the opportunity to recount their positive comments about the workshop—Teachers taking the opportunity to share their positive comments about the workshop totaled 40% of those responding.

A fifth of the teachers indicated that they will be able to integrate ideas/materials into their teaching situations—A full 20% of the teachers indicated that they will be able to integrate ideas and materials from the workshop into their respective teaching situations.

Hands-on activities from the workshop were seen as most useful by over one-tenth of the teachers—Thirteen percent of the teachers specifically mentioned 'hands-on' activities as the most useful aspect of the workshop—this is clearly a subset of the first category 'materials', but is presented separately in order to distinguish 'hands-on' activities from the more generic pool of teaching materials provided.