

Selected Information From National Research Reports **Dolores A. Grayson, Ph.D.**

The developmental and pilot phase of the GESA program was the topic of a paper (Grayson & Martin) delivered at the American Education Research Association (AERA) in New Orleans in 1984. The field-test, preliminary data analysis and implementation were discussed in a second paper (Grayson) presented to AERA in Chicago in 1985. This comprehensive teacher handbook was published to accompany the program (Grayson & Martin). In addition to the teacher workshops and the handbook, the three day GESA facilitator workshop was developed in a trainer-of-trainer model. This was accompanied by a GESA facilitator supplement (Grayson, Martin & Landrum) designed to prepare participants to conduct the teacher workshops.

A major portion of the following information was compiled for a third paper presented at AERA in Washington, DC, in 1987 (Grayson) and a fourth paper presented at AERA in San Francisco in 1992 (Grayson). The purpose of this section is to briefly describe the extent to which the program has been disseminated at the national level; to report the findings of a formal validation study conducted in a California district; to share recommendations and suggestions for future assessments; and, to provide additional findings and follow-up information.

Dissemination

The GESA program was developed as a model to be disseminated at the national level. It was piloted in Los Angeles County, California, which forms a microcosm of the United States. In 1983-84, the county included 95 school districts which served over 1.2 million students and varied greatly in population characteristics.

Districts ranged in size from Los Angeles Unified with over 700 schools to Gorman with one. The county had urban, suburban, and rural districts. Some were dominantly white, others dominantly Hispanic, African American, Asian and Pacific Islander. A few were wealthy enclaves, such as Beverly Hills and San Marino, while others like Compton served mostly low-income populations.

The 1986 public school population was 44.3% Hispanic; 31.1% White; 14.8% Black; 8.0% Asian, Pacific Islander; 1.5% Filipino; and 0.3% American Indian. 512,839 students claimed a "primary language other than English" in April, 1986. Eighty-seven different languages were spoken by students. Consequently, the GESA program was developed, piloted and field-tested to address the needs of a culturally diverse population and was very well received in cities such as Seattle, Washington; Portland, Oregon; San Diego, California; and Prince George's County, Maryland, where districts were dealing with issues of disproportionality and high immigration rates.

A major vehicle for dissemination was the combination of the three day facilitator training coordinated for multiple district representatives by personnel in the state departments of education through the Title-IV Civil Rights Act and Vocational Education federally funded programs. This approach was utilized in such states as Montana, Washington, Nebraska, South Dakota, Iowa, Kansas, Alaska, Missouri, Arkansas, Hawaii, Pennsylvania, New Jersey, New Mexico, Maryland, Oregon, Washington, Wisconsin, North Dakota, Idaho, Utah, Colorado, Ohio and Wyoming. In some instances, individual school districts opted to host their own trainings. These included, but were not limited to Minneapolis, Minnesota; Tucson, Arizona; Dekalb County, Georgia; Des Moines, Iowa; and San Diego, California. A number of trainings have been funded from grants from the National Science Foundation and the Statewide Systemic Initiatives (SSI). The Eisenhower funding for mathematics and science improvement has been instrumental in providing training in Texas and North Carolina and frequent collaboration with the regional equity assistance centers have resulted in representatives from multiple states. Additional participants have come from the Netherlands, Australia, Canada, England and Israel.

Over 10,000 facilitators have been trained, representing forty-seven states (all but Alabama, Oklahoma and West Virginia) and five countries, in less than 15 years.

Summary of Formal Validation Study

During the 1985-86 school year, the GESA program was implemented in the second largest district in California, San Diego Unified. In late June, 1985, approximately 25 site administrators, contact persons, and central office staff participated in a GESA facilitator training. This provided the support systems and trainers for a series of GESA teacher workshops in each of the district's four areas, involving 80 teachers from 12 school sites. The developer of the GESA program sub-contracted with the district to conduct a formal validation study of the effectiveness of the program and receptivity by the teachers. The Title IX office and the Evaluations Department combined efforts to produce the report (Baca, Busse & Seitz), in collaboration with the developer. The report is the source of the following information.

Methodology

- Pre/post classroom observations
- Pre/post teacher attitude surveys
- Pre/post student attitude surveys
- Pre/post achievement test data

Pre/post measures were used to determine the amount of growth in teacher interactions with students, changes in attitudes of teachers and students, and student achievement gains.

Teachers volunteered or were recruited by their site administrators to participate in the GESA program; students in their classrooms became the treatment group. Teachers of comparison groups were recruited from the schools with GESA teacher participants. Every effort was made to recruit comparison teachers from the same grade levels as GESA teachers.

Classroom Observations

These were conducted prior to GESA instruction and the completion of the program. Data for teachers were combined and analyzed using the formula cited in the findings to determine disparity in teacher/student interactions by gender and ethnicity.

Teacher Survey Analysis

A "Teacher Self-Assessment of Non-Sexist Behaviors" was administered during the first and last sessions. Surveys were matched by teacher name. Data were entered on an IBM-PC and analyzed using the Statistical Package for the Social Sciences (SPSS). Respondents marked whether they "always", "often", "sometimes", or "never", exhibited behavior deemed to be non-gender based. Statistical analysis was based on combining "sometimes" and "never", and "always" and "often".

A Post-Training Questionnaire consisted of six items designed to elicit teacher reaction to program content, outcomes for students, and curriculum resources recommended during the training.

Student Survey Analysis

Teacher administered surveys were completed by students. Surveys were matched by classroom teacher. Response options to individual survey questions include "male," "female", and "both". With "both" assumed as the non-gender biased response, data were analyzed focusing on the rate of gender bias rather than non-gender bias.

The tests of statistical significance were applied to surveys to determine significant differences between pre-post survey responses. Oneway analysis was conducted to determine statistical differences between pre-post survey responses and student groups. Analysis of variance was done to determine which factors were most important in distinguishing between student responses on pre-post surveys and between groups of students.

Test Data Analysis

Testing information for both the treatment and comparison groups of students in grades 3,4,6,7,8,9, and 10 was collected from spring 1985 (pre) and spring 1986 (post) CTBS test results. Individual scale scores on the following subtests were used: Vocabulary, Reading Comprehension, Total Reading, Mathematics Computation, Mathematics Concepts and Applications, and Total Mathematics.

To obtain total gains or losses for each gender at each grade level and for the total group at each grade level, scale scores for each group were averaged. These mean scores were then weighted and converted to Normal Curve Equivalents (NCE's). The NCE's were then converted to a percentile to be used in comparing gains and losses. This was done because individual student scores can not be directly compared for gain or loss of the group.

The data were also analyzed across the total treatment groups and across the total comparison group for each of the six subtests. For this analysis, the percentile for the total group at each grade was converted to an NCE. These NCE's were then weighted across all of the grade levels to

obtain an aggregate total for each of the six subtests. The weighted NCE's were averaged and then converted to a percentile. Percentiles from the pre-data were subtracted from percentiles from the post-data to provide gain or loss figures.

Limitations

Reportedly, the prevailing limit to the evaluation was the amount of funding available for conducting the study. Another major limit was the lack of available achievement data. The data available came primarily from students who were in Chapter I or School Improvement programs. The number of students with matched pre-post data was 482 of a possible 1,445 students.

Summary of Findings

Observations - three interactions were selected from the training matrix to be observed: response opportunities, physical closeness, and higher level questions.

Table 1 displays the number of pre-post interactions observed for males and females. The table displays the frequency with which males and females received each response or interaction from the teacher. As indicated, the total number of responses and interactions between students and teachers increased for every item.

**TABLE 1
INTERACTIONS BY MALE AND FEMALE**

| <u>Interaction</u> | | <u>Male</u> | | <u>Female</u> | | <u>Total</u> |
|------------------------|------|---------------|----------------|---------------|----------------|--------------|
| | | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> | |
| Response Opportunities | Pre | 704 | 57 | 528 | 43 | 123 |
| | Post | 895 | 55 | 725 | 45 | 1620 |
| Physical Closeness | Pre | 473 | 46 | 548 | 54 | 1021 |
| | Post | 610 | 49 | 630 | 51 | 1240 |
| Higher Order Questions | Pre | 122 | 55 | 99 | 45 | 221 |
| | Post | 148 | 56 | 118 | 44 | 266 |

Presentation of the number and percent of student responses by gender, minority /majority, or ethnicity does not accurately represent the disparity or equity of responses for groups. The following formula was used to determine the equity of responses for groups:

$$\frac{M \times (1-X)}{(T - M)} \times 100 - 100 = I$$

T = Total Responses

X = Percent of the population for each group

M = Number of responses for each group

This formula accounts for the under - or over representation of each population in terms of the interactions received by each student group. It assumes that students are exactly represented in the number of interactions received, when I = 1. The I value is a representation of that group’s response in relationship to their representation in the population.

The closer the answer is to 1.0 the more equitable the number of interactions received for each group. Values greater than 1.0 indicate an over representation of that interaction by the group studied. Values less than 1.0 indicated under representation. Positive or negative numbers indicate that a particular student group was over - or underrepresented respectively, for that particular interaction. For ease of interpretation, results were then converted to percents. **Table 2** presents the disparity of interactions by gender.

**TABLE 2
SHARE OF RESPONSES BY MALE AND FEMALE**

| Interaction | | Male Percent | Female Percent |
|---------------------------|------|-----------------|-------------------|
| Response Opportunities | Pre | +24 | -29 |
| | Post | +07 | -07 |
| Physical Closeness | Pre | -20 | +25 |
| | Post | -16 | +19 |
| Higher Order Questions | Pre | +14 | -13 |
| | Post | +09 | -08 |

This table demonstrates that males are over represented in Response Opportunities and Higher Order questions, with a marked improvement between pre-post observations. Females continued to be underrepresented in these two categories, but to a lesser degree in the post observations. Teachers demonstrate higher incidence of physical closeness with females in their classes than males. Physical closeness was coded when a teacher stopped within arms reach of a student.

While the GESA program was originated primarily to focus on gender interactions, the element of ethnicity has been stressed and coded during training sessions from the beginning. The data collected pertaining to gender and ethnicity was dramatic, differing from prior studies and indicative of the strong impact of the Race/Human Relations and integration efforts in the San Diego Schools.

In addition to the coded data, changes in the classroom climate were also noted by the observers. The following comments illustrate the quality of the changes which occurred in the classroom of teachers who completed the training.

The changes in the classroom climate from the pre to the post observation were dramatic. I especially saw differences at the secondary level. In two classes during the pre observations, the teachers had very stilted and limited interaction with their students. The whole "feel" of the classroom changed. During the post observations, these same teachers seemed relaxed and comfortable in their interactions with students. Even in the secondary classrooms where the pre observation showed a lot of interaction, the amount and quality of the interactions were greatly improved by the post observation. To me, the effect of GESA training seemed to be an improvement in the classroom climate as much as in the equitable treatment of students.

I was particularly impressed by the improvement in classroom tone from pre- to post-observations. In one class, during the pre-observation, the teacher stood behind a podium and spent the majority of class time threatening students about their behavior. Teacher and students were much more comfortable and respectful during the post-observation. Everyone seemed to enjoy themselves and the entire period was spent on instruction.

Teacher Evaluation

Survey of Teachers - A "Teacher Self-Assessment of Non-Sexist Behaviors" was administered during the first and last training sessions. A search for appropriate instruments for pre/post measuring of teacher attitudes and behaviors continued to be conducted, but no such instruments had been found. This item was appropriate as a workshop activity; however, it appeared to be invalid as a measurement tool. GESA training appeared to sensitize teachers to their subtle biased behavior; consequently, they assessed themselves more critically on the post assessment. This awareness was interpreted as a positive step in changing biased behavior. (Note: The instrument has been revised and validated. See "Conclusions".)

Teachers who completed the GESA program were asked to respond to a written questionnaire during the sixth workshop. Sixty-five teachers completed the evaluation. The questionnaire was designed to elicit teacher reaction to program content, outcomes for students, and curriculum resources made available during the training.

- **Item One - Importance of Interactions.** Teachers were asked to evaluate the importance of each interaction studied. Table 3 demonstrates the average rating for each of the ten interactions in the five workshop units.

TABLE 3
Participant Evaluation of GESA Interactions

| <u>Interaction</u> | <u>Rating</u> | <u>Unit</u> | |
|------------------------|---------------|-------------|---|
| Response Opportunities | 2.75 | 1 | Scale: 3 = most important 2 = important 1 = not needed 0 = undesirable, omit |
| Acknowledgment | 2.52 | 1 | |
| Listening | 2.49 | 4 | |
| Probing | 2.32 | 4 | |
| Wait time | 2.27 | 2 | |
| Higher Level Questions | 2.22 | 5 | |
| Physical Closeness | 2.19 | 2 | |
| Reproof | 2.03 | 3 | |
| Analytical Feedback | 1.95 | 5 | |
| Touching | 1.94 | 3 | |

While analytical feedback (AF) and touching (T) were rated comparatively low, teachers rated all interactions as important. None were suggested for deletion. The rating for AF may be related to the complexity of the interaction and the fact that it is combined with higher level questioning in the unit five workshop. Previous GESA data have indicated that AF is used the least and the most exclusively with students from whom we expect the most. It has been suggested that the rating for touching may be due to district and media focus on child abuse and policies regarding touching.

- **Item Two - Teacher Insights.** Each teacher was asked to list the three most helpful things s/he learned about herself/himself as a result of GESA. Twenty-four of the 63 teachers who responded to this question noted at least one specific interaction as an important teaching technique that had improved her/his ability to work with students. Some linked the interaction to student or teacher self-esteem.

Fifteen responses included discussion of awareness of the teacher’s own bias in relating to students and fourteen spoke directly about their own growth as a result of GESA.

- **Item Three- Advantages for Students.** Many of these responses paralleled those they had noted about themselves. Thirty-five out of 58 respondents discussed students’ positive reactions to one or more of the specific interactions. Many commented on self-esteem. (eg. “The strategies we learned can be powerful tools to enhance self-esteem.”)

Additionally, teachers noted improvements in classroom climate and group interactions, an increase in students’ desire to participate and in respect for each other. (eg. “Appreciation of

each other...Respect for the individual...They love to be treated alike, in terms of gender...The classroom atmosphere has improved since my training in GESA!")

- **Item Four** - Teacher Recommendations for GESA. Teachers were asked if they would recommend that their colleagues participate in GESA. Fifty seven of sixty-two respondents indicated that they would. Thirty of these teachers indicated that their recommendation would be "very strong."
- **Item Five** - Use of Curriculum Resources. Forty-seven of the fifty teachers who responded to this item said that they had used one or more of the curriculum resources shared with them during GESA. Curriculum infusion was noted in mathematics, science, history and art.
- **Item Six** - Additional Evaluative Comments. This item invited teachers to share additional comments that would be useful in evaluating GESA.

Over half of the 47 respondents spoke only of their positive experiences with GESA and had no constructive criticism to offer. The following are examples of these comments: " I think GESA is a wonderful way to improve teaching and a wonderful way to encourage children to thrive in our society," and " it was a learning, growing, expanding experience. The opportunity to learn from people teaching at different levels has been valuable. I have more insight into younger children in terms of what they may become: the attitudes and behaviors they may exhibit later. I am more convinced than ever that there is no more important job than working with young children."

Overall, teachers felt strongly that GESA improved their teaching abilities, classroom climates and students' abilities to learn and relate well to others. Repeatedly, teachers indicated that GESA provided them with a strong tool for self-evaluation of their teaching strategies and behaviors. Additionally, participants were pleased by the increased learning responses and changes in behavior of their students, and with the opportunities they had to observe other professionals at work during GESA training.

Survey of Students.

To determine attitude changes in students as a result of teachers participating in this program, students completed a teacher-administered survey. Just as in the preliminary findings published earlier (Grayson) the amount of data for analysis was limited. Note: The developer suggests replacing this item with a student self-esteem inventory such as the Piers-Harris Children's Self-Concept Scale (Joyner) or the Coopersmith Self-Esteem Inventory.

It is interesting to note that in the data collected, treatment students benefited from their teacher's GESA training in every instance. The most gender biased responses by students were in the areas of tasks at home. When rate of gender bias is examined by gender of the students, both treatment and comparison females demonstrated lower rates of gender bias than their male counterparts.

Achievement Data.

A description of the analysis performed was provided in the methodology section of this paper. All of the results of student achievement were considered as tentative, since most researchers agree that any achievement results from a six-month period are preliminary at best. According to the San Diego data, junior high students in grades 7 & 8 appear to have better outcomes than at the other levels. This was encouraging, since that level appears to be a “critical filter” for students and their academic pursuits. (Note: In the time period since this validation study, numerous districts have tracked the achievement results for students in GESA classes. Reportedly, in instances where the program has been implemented as designed in the original model, personal mean gains are experienced by students across grade levels and subject areas. This includes a five year data collection comparison compiled by Saltrick in Prince George’s County, Maryland, where students identified in greatest need gained at a more rapid pace than others and narrowed the achievement gap which existed prior to GESA.)

Conclusions

The conclusions presented here are based on the data presented. The limitations of the study, discussed earlier, must be taken into consideration.

Observation data demonstrate gains in the number of teacher/student interactions and a reduction in disparity. In evaluating the training, teachers report many benefits of the program and recommend it highly to their peers. The pre/post teacher survey has been revised and validated as a more appropriate measurement tool (See Appendix). Reported analysis of grades 3-12 student surveys indicated that treatment students benefited from their teacher’s training in every instance.

While preliminary data indicate that grades 7, 8, & 10 appeared to have better outcomes, limitations due to time, funds and logistics in this evaluation prevented proving the relative merits of the program statistically. However, the benefits could be measured by teacher support of the program, an increase in the number of teacher/student interactions, a reduction in the degree of disparity, and a decrease in the rate of bias by students in grades 3 - 12. Participants reported that the benefits of the program included an improvement in teaching and equity in the classroom. Observers reported dramatic changes in the classroom climate of some teachers. It was concluded that the GESA program was worthwhile for the participants and an asset to their teaching. It was further concluded that their present and future students would reap on-going benefits.

Recommendations from the Evaluators

1. Continue making the program available for district staff through Staff Development. (Based on book orders, representatives from the district continue to offer GESA workshops.)
2. Develop a refresher course for staff who have taken the program. (Contact the national GESA office for suggestions)
3. If Funding can be found, conduct a further study into the academic and affective results of GESA training and share the results with the national GESA office.

General Guidelines for Assessment of Implementation of GESA

Suggested Methodology for Measuring Program Effectiveness

- Pre/post classroom observations
- Pre/post achievement test data
- Post training questionnaire

Pre/post measures are used to determine the amount of growth in teacher interactions with students, changes in attitudes of teachers and students, and student achievement gains.

Classroom Observations:

These are conducted prior to GESA instruction and at the completion of the program. Data for teachers can be combined and analyzed to determine disparity in teacher/student interactions by gender and ethnicity. A Post-training questionnaire included in the final workshop section consist of six items designed to elicit teacher reaction to program content, outcomes for students, and curriculum resources recommended during the training.

Test Data Analysis:

Individual scale scores on the following subtests can be used from Basic Skills Tests: Vocabulary, Reading Comprehension, Total Reading, Mathematics Computation, Mathematics Concepts and Applications, and Total Mathematics.

Sample of Findings:

Results over the past several years have indicated that teachers feel strongly that GESA improves their teaching abilities, classroom climates and students' abilities to learn and relate well to others. Repeatedly, teachers indicate that GESA provides them with a strong tool for self-evaluation of their teaching strategies and behaviors. Additionally, participants are pleased by the increased learning responses, changes in behavior of their students and with the opportunities they have to observe other professionals at work.

Achievement Data

The two most exciting and consistent findings related to achievement have been as follows:

1. All students gain.
2. The students identified in greatest need are the students who gain the most.

Consequently, the learning gap narrows between specific populations. (See Transparency Master "Reduction in Gap" from data collected in Prince George's County.)

Conclusions and Recommendations

Repeatedly, as in the previous study, observation data demonstrate gains in the number of teacher/student interactions and a reduction in disparity. In evaluating the training, teachers report many benefits of the program and recommend it highly to their peers. The benefits can be measured by teacher support of the program, an increase in the number of teacher/student interactions, a reduction in the degree of disparity, and a decrease in bias. Participants report that the benefits of the program include an improvement in teaching and equity in the classroom. Observers report

dramatic changes in the classroom climate. In summary, the GESA program has proven to be a successful model, both in the scope and rate of dissemination and in the content analysis of its effectiveness. It demonstrates an approach to educational excellence which utilizes equity as a criterion.

Persistent Problem Areas

- Issues pertaining to educational equity are still not perceived to be of critical concern to large numbers of educators, researchers and policy makers;
- Lack of willingness to invest the time, money and effort needed to implement an effective approach to achieving success for all students;
- Time and trained personnel to meet all of the requests for services and materials;
- Need to move beyond first level consciousness and expand research;
- Need for collaborative, longitudinal research on the international level; and
- Need for ongoing monetary and collaborative support to sustain GrayMill and dissemination efforts for GESA and additional programs and publications.

Additional Findings and Follow-up Information

One concern addressed in the GESA program has been the inclusion of related issues such as the under representation of students from diverse racial and ethnic backgrounds in teacher/student interactions. Participating teachers have been encouraged to increase their interactions with these students. A portion of data collected during the formal validation study indicated a major increase, especially for minority males. Majority females were underrepresented in all interactions, which supported prior GESA studies. Analysis of these interrelationships when addressing gender and ethnicity have been the focus of other papers.

The GESA program office has accumulated preliminary reports from several field sites which indicate that teachers trained in GESA make fewer referrals to special education classes, report fewer discipline problems and record a lower rate of student absences.

In 1987 a survey was mailed to 537 GESA Facilitators from thirty-one states. When asked to estimate the number of people each had influenced as a result of their three-day facilitator training, a 10% respondency rate (57) estimated over 30,000. Results from the survey was summarized in the newsletter and mailed to all trained GESA Facilitators.

A National GESA Facilitators Convention/Reunion was held on July 14, 15, & 16, 1987, in Long Beach, California. The purpose was to share successes and concerns, provide updated research reports and curriculum resources, solidify the network, coordinate the data collection, and cooperate on action planning. Future plans included developing criteria and certifying GESA Consultants to conduct the three-day facilitator training sessions across the country. This became a reality in 1994 with the formation of the GESA National Training Team (GNTT).

In the 90's, state and regional GESA Facilitator Reunions and/or Advanced GESA Facilitator sessions have been convened in California, Oregon and Montana. We encourage all local and state GESA coordinators to consider co-sponsoring a follow-up Advanced GESA session with GrayMill for all previously trained teachers.

A number of studies have been conducted on the effects of GESA in specific settings. The following examples were all in partial requirement for doctoral degrees.

- A. The purpose of this study was to determine the effects of the GESA program on students' self-concept. Students were randomly selected from classes taught by GESA trained teachers and from control classrooms representing the elementary, middle and high school levels. Pretest and post test measures of the Piers-Harris Children's Self-Concept Scale were administered and analyzed. ANCOVA results indicated that GESA training made a difference in student scores at the .05 level of confidence. In addition, the mean scores of control students at the middle and high school levels indicated a decrease in self-concept indicating that GESA not only resulted in an increase, it countered the decrease as well. (Joyner 1994)
- B. A second study compared GESA and non GESA-trained 5th grade teachers and found GESA-trained teachers to be more effective in increasing student reading achievement. Low achieving students of GESA teachers made greater gains than comparable non GESA students in reading and self-perception. (Feeney and Romain 1992)
- C. One study looked at the impact of GESA training on secondary teachers and found that, after GESA training, teachers were more aware of gender issues and had more interactions with female students. Unfortunately, this study proceeded to be conducted under adverse conditions with questionable methodology and a very limited population. The author then leaped to conclusions about the lack of impact on self-esteem and achievement and generalized the findings to the overall effectiveness of GESA. Based on the methodology, the results only proved the ineffectiveness of the implementation of GESA in this particular setting. (Leavitt 1992)
- D. In contrast, Malloy and Penta incorporated GESA as part of their efforts with the University of North Carolina Mathematics and Science Education Network (MSEN) project to increase the number of historically underrepresented students...females, African Americans, Native Americans, and Hispanic Americans...to pursue mathematics and science fields at the university level and to move into careers in science, mathematics, technology, engineering and teaching. One of the goals for the teachers workshops was to remove subtle cultural and gender biases displayed in many teacher's classroom behavior. An article published in Current Issues in Middle Level Education in Spring, 1996, reports the success in meeting the goal with GESA as the vehicle for change. A valuable outcome of this effort is a validated instrument which can be used to pre/post survey teachers' attitudes toward equity issues. (See Appendix)

In the MSEN study, the findings indicated that teacher attitudes improved at all six sites and the attitude gains were statistically significant at four sites. In addition, the researchers concluded the following:

The process that teachers experienced in the GESA program encouraged them to change their behaviors. Because they were aware, during peer observations, of behaviors their colleagues were looking for, teachers purposefully included GESA recommended practices in their instruction. They reported that students responded positively to these modifications in instruction and that academic performance improved. The use of instructional tools provided through GESA, as well as changes in student achievement, fostered changes in teachers' attitudes about their instruction and about the capabilities of their students. The attitude changes teachers reported on evaluation instruments were, we believe, influenced by the positive response from their students. (Malloy & Penta 1996)

Other studies have incorporated GESA concepts and techniques into expanded or new research endeavors:

- This research effort resulted in the development of an Assessment Regarding Classroom Practices (the Pryor ARCP) instrument, a true/false/unsure response survey of Knowledge of gender-equitable classroom practices developed by a GESA Facilitator in Michigan. The developer of GESA was a member of the jury for this piece of work. (Pryor 1996)
- Another dissertation by a GESA Facilitator generated knowledge particular to female students and the teaching of middle school science. The use of journal writing made the study of science more accessible and helped the students feel more confident. The results suggested the significance of classroom activity designed to include experiential learning, collaboration with peers, and opportunity for individualistic response. The developer of GESA was a member of the doctoral committee for this study. (Sears 1995)

In addition to these examples, numerous studies, conference presentations, papers and journal articles have addressed the effects of GESA and/or aspects of GESA in a variety of settings. We encourage results from the field to be shared with GrayMill and others in the GESA network and use many of these for ongoing evaluation purposes.

Good teachers know some students can learn; GESA teachers know all students can learn...and how to help them!

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Grayson, D.A. and M.D. Martin, *Generating Expectations for Student Achievement - Teacher Handbook*. GrayMill, 25101 Bear Valley Rd., PMB 130, Tehachapi, CA 93561

