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ABSTRACT

This paper describes the extent to which the Gender Expectations and Student Achievement (GESA) program has been disseminated at the national level, reports the findings of a validation study conducted in a California school district, and shares recommendations for further study and future plans. GESA was designed to reduce the disparity in the treatment received by boys and girls in the classroom and to improve curriculum, materials, and the learning environment to enhance student achievement for both sexes. Teachers' frequency of interactions with students, sex stereotyping, and stereotypical interactions were observed. GESA was developed in Los Angeles County (California) and has been well-received in other areas of the United States. A total of 537 facilitators, representing 31 states and four countries, have participated in the three-day training program. The validation study was conducted in the San Diego (California) Unified School District. Although achievement data were limited, both teachers and students indicated benefits from participating in GESA. (GDC)

EVALUATING THE IMPACT OF THE GENDER EXPECTATIONS AND STUDENT ACHIEVEMENT (GESA) PROGRAM

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Evaluating the Impact of the Gender Expectations and Student Achievement (GESA) Program

Introduction

Educational results for females and males of all cultural and ethnic groups and their economic consequences are determined by many factors, not all found in the school setting. But what happens in school is important. Bias and discrimination inhibit all girls and boys from realizing their potential as students and as contributing, productive and caring members of society. Discrimination has direct consequences for females who are all too often channeled into low-paying, traditional occupations.

As previous data analysis from studies on teacher expectations and student achievement (Kerman, Kimball, and Martin, 1980), GESA (Grayson & Martin, 1984), and other research (Sadker & Sadker, 1982 and 1984; Hall and Sandler, 1982) indicates, classroom teachers consistently interact more frequently with boys than with girls, and all groups in the educational setting still perceive boys as high achievers more often than girls. The results of literally thousands of teacher observations indicate repeatedly that the student with whom teachers interact the least on either a positive or negative basis is the perceived high achieving female.This is typically a quiet one who does her work and does not demand her share of attention, who starts to "shut down" and repress her academic skills in junior high and who is seldom encouraged, expected and/or counseled to achieve to her maximum potential or to the extent of her male counterpart. The one whose self-esteem, with regard to peer and social success, increases as her achievement, interest and participation in courses such as math and science decreases, due to a bombardment of societal values emphasizing appearance and "appropriate" behavior and pursuits. How ironic that none of the major studies addressing excellence and reform in education even mentioned the issue of gender disparity, totally ignoring issues related to gifted and other underachieving females.

Problems still exist with the representation of girls and boys in instructional materials. For example, boys continue to be represented more favorably or with greater frequency in stories. Over two decades of research has shown that differential treatment in classrooms causes differing achievement levels for males and females and for majority and minority students.

A review of the literature on which the GESA program was based indicated five major areas of disparity in classrooms. These include instructional contact, grouping and organization, discipline, enhancing self-esteem and evaluation of student performance. The GESA program was designed to counter these areas of disparity by encouraging teachers to utilize research-based supportive and motivational instructional strategies and resources. It is based on the premise that in order to ensure quality and excellence on an equitable basis, educators need to directly confront the issue of gender and ethnic bias in teachers' interactions with students. Once teachers have examined their biases, as demonstrated by their own behavior, necessary curricular and other changes can be accepted more easily.

The objectives are to reduce the disparity in the frequency distribution of interactions with students by teachers; to reduce stereotyping by teachers; to increase non-stereotypical interaction with students; to improve classroom climate; and to increase student achievement. The conceptual framework includes three factors generally accepted to influence academic achievement. These include the curriculum content and materials, the learning environment, and the classroom interactions.

The developmental and pilot phase of the GESA program was the topic of a previous paper (Grayson and Martin, 1984). The field-test, preliminary data analysis and implementation were discussed in a second paper (Grayson, 1985). A comprehensive handbook has been published to accompany the program (Grayson & Martin, 1985). In addition to the teacher workshops and the handbook, a three-day facilitator workshop has been developed in a trainer-of-trainers model. This is accompanied by a facilitator supplement (Grayson, Martin & Landrum,1984) and is designed to prepare participants to conduct the teacher workshops.

The purpose of this paper 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; and to share recommendations for further study and future plans.

National Dissemination

The GESA program was developed as a model to be disseminated at the national level. Los Angeles County, where the project is centered, forms a microcosm of the United States. It includes 95 school districts which serve over 1.2 million students and vary greatly in population characteristics.

Districts range in size from Los Angeles Unified with over 700 schools to Gorman with one. The county has urban, suburban, and rural districts. Some are dominantly white, others dominantly Hispanic, Black, Asian and Pacific Islander. A few are wealthy enclaves, such as Beverly Hills and San Marino, while others like Compton serve 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 are spoken by students.

Consequently, the GESA program was developed, piloted and field-tested to address the needs of a culturally diverse population and has been very well received in cities such as Seattle, Washington and San Diego, California, where districts are dealing with issues of disproportionality and high immigration rates.

A major vehicle for dissemination has been 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 federally funded programs. This approach has been utilized in such states as Montana, Washington, Nebraska, and South Dakota.

Frequently, a collaborative effort with the regional assistance centers resulted in participation from multiple states.This has been the case with thirteen midwest and southern states and the center at the University of Michigan; four states and the Northwest Regional Educational Laboratory; nine states with the New England Regional Exchange and three states and the Center for Educational Equity, American Institutes for Research.

A total of 537 facilitators have been trained, representing thirty-one states and four countries, in less than three years. Approximately two hundred more are scheduled to be trained by the conclusion of the third year (August, 1987).

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 1984, a comprehensive review of Title IX compliance issues corroborated the need for staff development programs. District staff were directed by the Board of Education to identify and implement inservice programs designed to:

1. Assist administrative, instructional and support staff in increasing awareness of attitudes, behaviors, perceptions and expectations that can be interpreted as gender biased and can lead to differential treatment of males and females; and

2. Assist administrative and instructional staff in utilizing techniques and strategies which support equitable access to the learning environment by both males and females.

In late June,1985, approximately 25 site administrators, contact persons, and central office staff participated in a GESA facilitator training. In late August, 1985, approximately 20 race/human relations facilitators participated in a three-day GESA facilitator training. This provided the support system 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, 1986), 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 at 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 is 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 ccompleted 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. Existing data was used. All schools do not test at every grade, limiting the amount of data. The data available came primarily from students who are in Chapter I or School Improvement programs and is not representative of the entire population of students. The number of students with matched pre-post data was 482 of a possible 1,445 students. This data is very limited.

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 I
INTERACTIONS BY MALE AND FEMALE

Interaction		Male		Female		Total
		Number	Percent	Number	Percent	
Response Opportunities	Pre	704	57	528	43	1232
	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:

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

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 overrepresentation 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 overrepresentation of that interaction by the group studied. Values less than 1.0 indicate underrepresentation. 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 overrepresented 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 to focus on gender interactions, the element of ethnicity has been stressed and coded during training sessions. The data collected pertaining to gender and ethnicity is dramatic, differing from prior studies and indicative of the strong impact of the Race/Human Relations and integration efforts in the San Diego City Schools. This data will be the focus of a future paper.

In addition to the coded data, changes in 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 two 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 misbehavior. 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."

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 continues to be conducted, but no such instruments have been found. This item is appropriate as a workshop activity; however, it appears to be invalid as a measurement tool. GESA training appears to sensitize teachers to their subtle biased behavior. Consequently, they assessed themselves more critically on the post assessment. This awareness is interpreted as a positive step in changing biased behavior.

Teacher Evaluation. Teachers who completed the GESA program were asked to respond to a written questionnaire during 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

Interaction	Rating	Unit
Response Opportunities	2.75	1
Acknowledgement	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

Scale: 3 = most important; 2 = important; 1 = not needed; 0 = undesirable, omit

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 recent district and media focus on child abuse. Reportedly, many teachers expressed conflict about touching during workshop discussions.

Item Two - Teacher Insights. Each teacher was asked to list the three most helpful things she/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 62 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 50 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.

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, 1985), the amount of data available for analysis was limited. Many teachers failed to return post student surveys. While the preliminary reports were substantiated, investigation of a more formalized nature with a more representative sample is needed. The developer anticipates replacing this item with a student 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 area 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 are considered as tentative. The results obtained appear to indicate a need for further study. Some of this is currently in process in other GESA districts and will be reported in the future. Most researchers agree that any achievement results from a six-month period are preliminary at best. GESA personnel will be conducting a follow-up longitudinal assessment on the target students studied in the pilot phase. According to the San Diego data, junior high students in grades 7 & 8 appear to have better outcomes. This is encouraging, since that level appears to be a "critical filter" for students and their academic pursuits.

Conclusions and Recommendations

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 was determined to be inappropriate as a measurement tool.

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 appear to have better outcomes, limitations due to time, funds and logistics in this evaluation prevent proving the relative merits of the program mathematically. However, 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 the rate of gender bias by students in grades 3-12. Participants report that the benefits of the program included an improvement in teaching and gender equity in the classroom. Observers report dramatic changes in the classroom ciimate of some teachers. It is concluded that the GESA program was worthwhile for the participants and an asset to their teaching. It is further concluded that their present and future students will reap on-going benefits.

Recommendations

1. Continue making the program available for district staff through Staff Development.

2. Develop a refresher course for staff who have taken the program.

3. If funding can be found, conduct further study into the academic and affective results of GESA training.

Additional Findings and Implications For Future

One concern addressed in the GESA program has been the inclusion of related issues such as the underrepresentation of minority students in teacher/student interactions. Under this premise, participating teachers have been encouraged to increase their interactions with these students. A portion of data collected indicates a major increase, especially for minority males. Majority females were underrepresented in all interactions, which supports prior GESA studies. As mentioned earlier, analysis of these interrelationships when addressing gender and ethnicity will be the focus of a future paper.

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. A formal comparative study is planned.

A survey has been 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 will be summarized in the "GESA Generation" newsletter and mailed to all trained GESA Facilitators.

A National GESA Facilitators Convention/Reunion is scheduled for July 14, 15, &16, 1987, in Long Beach, California. The purpose is 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 include developing criteria and certifying GESA Consultants to conduct the three-day facilitator training sessions across the country.

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.

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

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