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ABSTRACT

This paper presents the results of an evaluation study of a sex equity program designed to affect the achievement and attitudes of early adolescent students in the middle school. The Self-Concept and Decision-Making Middle School Curriculum Program at Florida State University developed sex equity curricular materials titled "Decisions About Roles" that can be infused directly into the middle school curriculum of math, science, language arts, physical education, and social studies. To determine the effectiveness of the program, both formative and summative evaluation procedures were used over two years. During the formative evaluation of the first year, all materials were field tested and student pre- and posttests were administered. The materials were revised as a result of the feedback. The summative evaluation of the second year employed a pre- and posttest design to contrast the gain scores of the students participating in the program (experimental group) and those not exposed to the materials (comparison group) for five dependent measures. Six hundred and thirty students in grades six, seven, and eight at two experimental site schools and 234 students in the comparison school participated. Evaluation instruments administered are described in the paper. Results indicated that the program which includes a substantial social studies component had a significant effect on pupils' achievement, sex-role perceptions, and decision making. Participants made achievement gains in content areas; gained more egalitarian perceptions of occupational, school, and family roles for females and males; expressed more androgynous self-concepts (girls only); and gained confidence in decision making.

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EVALUATION OF A MIDDLE SCHOOL CURRICULUM

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## IMPLEMENTATION OF SEX EQUITY IN THE SOCIAL STUDIES:

### EVALUATION OF A MIDDLE SCHOOL CURRICULUM<sup>1</sup>

Efforts to implement sex equity in K-12 classrooms have been directed at four major areas: (1) legal mandates, such as Title IX, (2) the development and revision of instructional materials, (3) sex-fair teacher practices and classroom interaction, and (4) increasing pupil performance in nontraditional areas of achievement. It is beyond the scope of this paper to discuss each of these strategies for change in the social studies. Some have been addressed in previous papers of this symposium. Instead I will present a case study of one program designed to affect the achievement and attitudes of early adolescent students in the middle school.

Funding by the Women's Educational Equity Act Program, the Self-Concept and Decision-Making Middle School Curriculum Program (1980) was developed at Florida State University in response to the need for instructional programs which fulfill the following four objectives:

(1) To provide teachers and pupils low cost, easily used curricular materials that can be infused directly into the middle school curriculum which typically includes instruction in math, science, language arts, physical education as well as social studies.

(2) To increase students' academic achievement by helping them

<sup>1</sup> This program was supported by a U.S. Office of Education grant (#600781145) from the Women's Educational Equity Act Program. The author wishes to acknowledge the contributions of project staff and three participating schools in Leon County, FL, the Developmental Research School of Florida State University, Fairview Middle School, and Griffin Middle School, without whose support this research would not be possible.

overcome stereotypic attitudes toward particular subject areas (e.g., "It's unfeminine for girls to excel in science.")

(3) To help students expand their self concept in relation to their identity as females or males including role behavior, personality traits, occupational aspirations, and expectations.

(4) To increase students' ability, confidence, and participation in making decisions.

#### METHOD

Evaluation Design. To determine the effectiveness of this program both formative and summative evaluation procedures were used over a two-year period. During the formative evaluation (1978-79), five groups of people working with project staff contributed to the development of the program materials: teachers, administrators, consultants, parents, and students. A group of twenty-seven middle school teachers and six administrators assisted project staff in determining the need for these materials, providing feedback on each pilot lesson and field-testing each unit in the classroom. They met with project staff periodically to give additional input into the program development. Consultants to the project reviewed materials and wrote lessons in their areas of expertise. A citizen's review board examined all materials and made recommendations for change. Participation students completed unit pre-tests and post-tests which assessed their mastery of the objectives for each subject area. As a result of feedback from these participating personnel, all lessons and texts were revised by the project staff. Each program text was

sent to a consultant for final review.

The summative evaluation during the second year (1979-80) employed a pre- and post-test design to contrast the gain scores of the students participating in the program (experimental group) and those not exposed to the materials (comparison group) for five dependent measures. In addition, scores on pre- and post-tests for each content area were compared for students participating in the program.

Participants. After a presentation about the program to faculties of three middle schools in Tallahassee, Florida, (described below), 27 teachers from two experimental schools agreed to participate by teaching the curricular program for their subject area specialty. Six teachers at a comparison school agreed to participate by assisting in the administration of pre-tests and post-tests to their students who did not receive the experimental program.

Six hundred and thirty students in grades six, seven, and eight at two experimental site schools and 234 students in the comparison school also agreed to participate in the program. Students at one experimental site, a university research school, had been carefully admitted to represent the socio-economic and ethnic (80% nonblack and 20% black) make-up of the state of Florida, an equal proportion of females and males, and a statistically normal curve of academic ability of students at each grade level. Students at the second experimental site school also reflect a mixed ethnic composition (60% white and 40% black) with a large proportion of middle and low socio-economic families represented. Students from the comparison school are similar with a composition of approximately 60% white and 40% black as well as the major proportion from middle and low socio-economic families.

Treatment Program. Six teacher guides, five student texts, and an Implementation Handbook were prepared to help teachers and students achieve the program objectives. First a prerequisite unit, Decisions and You, was designed for social studies classrooms to develop students' personal and group decision-making skills. Five other instructional materials were developed for students and teachers including the areas of social studies (Decisions about Roles), language arts (Decisions about Language), math (Decisions about Mathematics), science (Decisions about Science), and physical education (Decisions about Physical Activity).

Each subject text was designed to be teacher directed and to address the program objectives related to student self-concept, decision-making, and achievement by using basic content typically covered in the subject area. Lessons were sequenced to follow a four-step decision-making process: (1) statement of problem, (2) examination of knowledge, (3) examination of values, and (4) decision-making and social action. Activities for each lesson contained in the student books include readings, discussion questions, small group work, role play, and evaluation exercises. Annotated teachers' guides contain the student text for each lesson as well as information on the duration, purpose, objectives, vocabulary, background, and detailed explanation for each answer to questions for the lesson.

The primary text for social studies; Decisions About Roles, contains 20 lessons in which students find out how roles change over time and how people can choose and define their roles. Work, family and citizenship roles in the Progressive Era are compared to roles of today. Students are guided to explore their values and make personal and group decisions which they carry out.

Implementation. With only minimal training, an introduction to the goals of the program and content of the materials, each of the 27 teachers of the experimental schools completed the appropriate subject area text with at least one class of students. They taught the suggested number of lessons, with some lessons requiring two to three days, using the student text and detailed teacher's edition as a guide. Teachers had the choice of presenting the lessons on successive days (approximately four to six weeks) or interspersed throughout the school year at times convenient for each topic. Classrooms were observed by project staff at periodic intervals to assess implementation. All students who participated at the experimental schools received the unit on decision-making and at least one other content area. Most received a total of at least four units of instruction.

Performance pre-tests and post-tests for each subject area were administered before and after each unit by the classroom teacher under the supervision of the project evaluator and field coordinator. Instruments designed to measure the overall effectiveness of the program were administered to experimental and comparison pupils by project staff in September before students received the program and again in May at the completion of the program.

Instruments. Five of the seven instruments used to measure the impact of the program materials in relation to the program goals are reported here. Four of the five were developed specifically for the program. The content validity and the construct validity were obtained for all instruments developed. A panel of judges (n = 5) reviewed each instrument for content validity and a separate panel (n = 5) reviewed each instrument for construct validity. The



feedback from both panels, who were experts in decision-making and/or sex equity, was positive with only editorial revisions being suggested.

(1) Performance Tests. Each of the six teacher editions includes an achievement test developed using a criterion-referenced approach to measure pupil attainment of the specific objectives for each subject area. Each test was administered to experimental pupils before instruction and again at the completion of each subject area.

(2) Attitudes about Occupational, School, and Family Roles Inventory.

This instrument asks students to rate 53 jobs or activities traditionally associated with either females (23 items) or males (30 items) on the suitability of participation of females and males (e.g., "who should wash dishes?"). Responses were indicated on a five-point scale:

(1) only males, (2) mostly males, some females; (3) the same number of males and females; (4) mostly females, some males; and (5) only females.

(Scauu and Kahn, 1977). The purpose of this instrument is to measure changes in pupils' role flexibility in relation to sex stereotypes. Two subscales, one for traditionally female roles and one for traditionally male roles, were analyzed.

(3) Adolescent Sex Role Inventory (ASRI). Pupils were asked to describe themselves in relation to 60 personality characteristics by responding to a five-point Likert scale. Derived from the Bem Sex Role Inventory, the ASRI uses less difficult vocabulary and was designed for 10-14 year olds by Thomas and Robinson (1979). Reliability and validity measures have also been reported (Thomas and Robinson, 1981). This adjective rating scale of 60 items yields three scores relevant to self-concept: femininity, masculinity, and androgyny. The masculinity score is the mean of the 20 masculine items, the femininity



score is the mean of the 20 feminine items, and the androgyny score is the difference between the feminine and masculine scores. Data reported here are for the androgyny scores.

(4) Confidence in Decision-Making Inventory. Students were asked to express their agreement or disagreement on a five-point scale with 20 statements which related to confidence in making personal decisions at home, at school, and with friends. One item, for example, is "I usually try to do what's right for me, even if my friends disagree." Scores can range from 20 to 100 with a higher score indicating higher confidence in decision-making.

(5) Participation in Decision-Making Inventory. This self-rating instrument assesses students' participation in skills of group decision-making, such as observing, influencing, and organizing. Students respond to each of ten items twice by indicating their degree of participation in the present and degree of participation anticipated in the future on a three-point scale. Scores range from 20 to 60 with the higher score indicating a higher level of participation. (Copies of all instruments may be obtained from the author.)

## RESULTS

Performance tests. Pupil scores (paired samples) on the criterion-referenced pre- and post-tests for each subject area were compared using t-tests. For each area students made significant gains in mastery of the content objectives. Specifically, on the post-test at the completion of Decisions and You, students ( $M = 21.48$ ) scored significantly higher

than on the pre-test prior to instruction ( $M = 15.68$ ),  $t(1,249) = 9.15$ ,  $p < .01$ . Similarly students who completed Decisions About Roles ( $M = 17.45$ ) made significant gains from the pre-test ( $M = 12.04$ ),  $t(1,209) = 17.21$ ,  $p < .01$ .

#### Attitudes about Occupational, School, and Family Roles Inventory.

Using pretest scores as a covariate, a 2 (treatment condition) x 2 (sex of student) x 2 (race) analysis of covariance was performed on the post-tests for the traditional female roles (23 items) and traditional male roles (30 items). For the traditional female roles there was a significant difference for treatment with the experimental group ( $M = 3.28$ ) more likely to rate these roles as acceptable for the same number of males and females than the comparison group ( $M = 3.60$ ),  $F(1,855) = 39.53$ ,  $p < .001$ . There were no main effects for sex or race or interaction effects.

On the traditional male role items there was also main effect for treatment. Experimental pupils ( $M = 2.74$ ) were more likely to respond that the same number of females and males should perform the roles than were comparison pupils ( $M = 2.37$ ),  $F(1,855) = 71.29$ ,  $p < .001$ . In addition, there was a main effect for sex with females ( $M = 2.72$ ) more likely to express an egalitarian attitude than males ( $M = 2.55$ ).

However a significant two-way interaction effect for sex and treatment  $F(1,855) = 10.65$ ,  $p < .001$ , indicated that this difference can be partly explained by the less egalitarian scores of the comparison males ( $M = 2.43$ ) in contrast to the experimental males ( $M = 2.67$ ). Furthermore a significant three-way interaction among treatment, sex, and race  $F(1,855) = 23.17$ ,  $p < .001$  indicated that white males ( $M = 2.71$ ) and black females ( $M = 2.71$ ) in the experimental groups were significantly more egalitarian about traditional male roles than their counterparts

in the comparison group ( $M = 2.40, 2.55$  respectively).

Confidence in Decision-Making Inventory. A three-way analysis of covariance indicated a significant effect on the post-test with the treatment group ( $M = 44.63$ ) showing greater confidence in decision-making than the comparison group ( $M = 55.55$ ),  $F(1,855) = 154.96$ ,  $p < .001$ . No minor effects for sex or race or interaction were present.

Participation in Decision-Making Inventory. The results of a three-way analysis of covariance show that pupils in the treatment group ( $M = 29.12$ ) expressed significantly more participation than the control group ( $M = 32.15$ ),  $F(1,855) = 63.98$ ,  $p < .001$ . Again, no main effects for sex or race or significant interactions were present.

#### DISCUSSION

The results of this research indicate that this middle school curriculum program which includes a substantial social studies component, had a significant effect on pupils' achievement, sex role perceptions, and decision-making. In summary, the findings indicate that participants (1) made achievement gains in the content of the curricular components (math, science, language arts, social studies, language arts, physical education, and decision making); (2) gained more egalitarian perceptions of occupational, school, and family roles for females and males; (3) expressed more androgynous self-concepts (girls, only); (4) gained confidence in decision-making and (5) expressed more participation in decision making.

In comparison to previous research, the results of this study yield findings of note in two major ways. First, the effects of the intervention program on sex role perceptions and decision-making were discernible not only in terms of the specific content of each curricular component, but were generalized by participants to their overall sex role perceptions and decision-making attitudes. Second, both girls and boys of middle school ages had more flexible sex role perceptions, although girls made greater shifts in self-concept. Both of these major findings are discussed below.

While numerous curricular materials have been developed which have expanded sex role perceptions, their impact has usually been limited to the specific roles presented in the materials (Scott, 1980b). In this program significant gains occurred not only on the attitude scales for specific subject areas, but also on the general measures of sex role perceptions and decision-making.

Such a large amount of change may be attributed to the content of the teaching materials, extensiveness of the intervention, and/or support for materials by the participating teachers. First, the materials were designed to teach specifically about sex role stereotyping and its influences on people's behavior and the decisions they make. Case studies showing alternatives were presented and discussed. Other curricular materials may be less direct about role stereotyping and only eliminate obvious types of bias. Second, the intervention program included six components of study, most lasting four to six weeks. It was designed as a total school program and a substantial proportion of students at both site schools participated in a number of units. It is possible there was a spillover effect from such as extensive treatment. Third,

although the teachers received no specific training in the content of the curriculum components, they were either paid a small stipend to teach the materials and report their feedback to the program staff or they were expected to participate in a research project as part of their assigned duties. Therefore, they had an incentive beyond their regular teaching responsibilities to become involved with the materials and may have had a greater than average impact on the students in teaching the components.

A second major finding in contrast to previous research (e.g., Guttentag and Bray, 1976) is that on most measures boys as well as girls made significant gains in sex role flexibility and decision-making. This finding may be a result of the design of the curricular materials as well as the intensiveness of the treatment. Most curricular changes to eliminate sex bias have stressed the expansion of female roles (Scott, 1980a; 1981). Because of the difficulty reported in the literature of expanding boys' sex role perceptions, these curricular materials were developed to include an emphasis on nontraditional male roles as well as nontraditional female roles.

However, the strength of traditional notions of masculinity may be more powerful than this year-long intervention program in terms of boys' self-concepts, since boys in the program did not show gains on the ASRI (Adolescent Sex Role Inventory). As long as society supports androgynous behavior for females more strongly than for males, it may be difficult for schools to effect change in boys' self concepts in the direction of androgyny.

In conclusion, the gains of the students who participated in the program support the adoption by middle school educators of curricular materials described in this paper and others that may be developed which fuse traditional content already being taught in the middle school curriculum with content about sex role stereotypes.

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