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MODIFYING GENDER STEREOTYPES IN PRIMARY SCHOOL

Hugh Gash, Mark Morgan, and Ciaran Sugrue
St Patrick's College, Dublin

Primary school teachers taught a programme designed to reduce stereotyped beliefs about gender in pupils from infants class to fifth class (5 to 11 years of age) The programme developed on the basis of constructivist theory involved teaching strategies designed to lead pupils to question existing beliefs On measures administered before introducing the programme rural pupils were found to be more stereotyped than urban pupils and pupils in mixed sex schools differed from pupils in single sex schools in personal social stereotypes The programme was found to be effective in infants classes and in urban but not in rural classes There was also evidence that the programme diminished girls perceptions of gender stereotypes

Various approaches have been used to reduce stereotyped beliefs including counter-traditional television programmes (Williams, LaRose, & Frost, 1981), peer modelling (Katz & Walsh, 1991), and adult modelling (Raskin & Israel, 1981) In educational settings such approaches have not had clear-cut results and may even have served to increase rather than decrease stereotyping (e g , Guttentag & Bray, 1976) One reason for the difficulty in changing stereotypes in educational settings may be that the attitudes which individuals hold form part of their identity and may be needed to maintain their place in their social group (Gash, 1993a) Another reason is that environmental influences may be moderated by cognitive processes which affect children's receptivity to interventions (e g , Bigler & Liben 1990, 1992, Kohlberg, 1966, Martin & Halverson, 1981)

There were two aims to the present study The first was to examine pupils' perceptions of gender stereotypes in mixed and single-sex schools to see if attending these schools is associated with different stereotype patterns The second was to examine the effectiveness of educational interventions undertaken by teachers participating in the St Patrick's College TENET[1] project in its first year It was expected that the intervention programme, by providing children

1 The projects on Equality of Opportunity for Girls and Boys in schools which were funded as a result of the 1985 resolution by the Ministers of Education of the European Community were collectively called TENET projects The study reported in this paper is one result of the response of the Association of Teacher Education in Europe to the 1985 resolution that an action programme be implemented to ensure equal opportunities in education for boys and girls (Arnesen & Ni Charthaigh 1987)

with opportunities to question their understanding of gender stereotypes, would reduce their scores on a measure of gender stereotyping. Since it is possible that a curriculum about gender awareness will be interpreted by pupils in ways that reflect their own previous experience and understanding of gender issues, it seemed reasonable to take account in the design of our study of aspects of pupils' background that might be relevant to the development of gender awareness (Williams & Best, 1990). Thus, we included urban and rural samples of pupils in our sample. We also included pupils of different ages, since age and gender awareness are related (Huston, 1983).

The approach adopted, both in considering stereotyping and in the classroom interventions, was grounded in Piagetian or constructivist theories of cognition. Gender stereotyping was considered as a process by which children organize their understanding of the characteristics, behaviours, and aspirations of men and women, and of boys and girls. Thus it provides a basis for expectations about behaviour and also relates to an individual's identity in a group. For this reason, stereotypes are likely to be quite resistant to change. With this in mind, teachers were encouraged to proceed gently and to avoid trying to change pupils' thinking in ways that the pupils were not willing or ready to accept.

A measure of gender stereotyping, the Sex Stereotyping Measure (SSM), which had previously been used in Ireland by Best et al. (1977), was used to assess gender-related knowledge of social and personal characteristics. The measure requires children to identify as either male or female a series of male stereotypical adjectives such as aggressive, ambitious, stable, confident, cruel, and disorderly and a series of female stereotypical adjectives such as emotional, gentle, sensitive, complaining, and not making up one's mind. High scores on the measure indicate greater awareness of gender stereotypes and SSM scores increase with age (e.g., Best *et al*, 1977; Williams & Best, 1990). The aim of the experimental intervention was to lower the average scores for children who had undergone treatment. Thus, there was a paradoxical quality to our experimental intentions since the treatment, insofar as it raised awareness about gender stereotypes in class, was likely to facilitate the developmental process of learning about stereotypes. However, our aim was to facilitate flexibility in such thinking and, by so doing, to help children become less stereotyped.

METHOD

Procedure

Schools were invited to participate subject to the restriction that they served children from middle-class backgrounds and met other design considerations.

Boys' schools, girls' schools, and mixed schools were selected in two locations (urban and rural) In making this selection three schools were approached in each location (urban, rural), one for each school type (boys, girls, mixed) in which there were at least two classes (one for each treatment experimental and control), at three grade levels (infants, second, and fifth grade) Rural schools within a 50-mile radius of Dublin were avoided because they could be considered within commuting distance of Dublin Single-sex rural schools and a mixed rural school were selected in the south west of Ireland Having selected the six schools, teachers were invited to participate Both pretest and posttest data were collected in 1989 The Sex Stereotype Measure (SSM) was administered to pupils by their own teachers at the commencement of the study and again at its completion five weeks later Pretest data were provided by 1,016 pupils in 36 classrooms Of these, 923 pupils also completed the SSM at the end of the study (Table 1) Analysis of the influence of school type was restricted to an examination of the patterns of the 32 individual gender stereotypes for each gender in single and mixed sex schools

The designation of classes as experimental was made following discussion with teachers during which volunteers who agreed to implement the experimental treatment were identified Matched classes within the school were then designated as control

TABLE 1

NUMBERS OF PUPILS BY LOCATION SCHOOL TYPE, GRADE AND TREATMENT FOR WHOM PRETEST AND POSTTEST DATA WERE AVAILABLE

Location	School Type	Grade					
		Infants		Second		Fifth	
		Expt	Control	Expt	Control	Expt	Control
Rural	Boys	30	31	34	36	34	34
	Girls	39	41	19	29	30	29
	Mixed	11	14	19	15	16	26
Urban	Boys	21	22	30	35	29	28
	Girls	25	27	40	36	30	29
	Mixed	34	30	31	31	33	30

Children's Sex-stereotyping Measure

Children's gender related knowledge. The Sex Stereotype Measure (SSM) is a 32-item forced-choice test in which a child is required to identify items as either male or female. Half the items are female stereotypes and half male stereotypes. One typical item is: 'One of these people is emotional' and asks subjects to select a male or a female. The total score represents the number of gender stereotypes which a subject identifies correctly.

Treatment

Teachers in the experimental group were asked to teach in ways that raised the issues of gender stereotyping so that pupils would become more aware of gender issues. The teaching strategies were explained to the teachers in a workshop prior to the beginning of the intervention programme. They were asked to raise the issue of gender stereotyping in their lesson plans each day during a period of five weeks in whatever curriculum context they deemed appropriate. During the intervention period, all experimental teachers were visited in class to discuss the implementation of the programme. Teachers in the control group engaged in their normal class activities and were encouraged not to discuss gender stereotyping for the five-week duration of the study.

In the experimental group, the initial classroom practices or tactics which were recommended to teachers included asking questions, providing counter examples, and engaging the children in drama and role play. These tactics were presented as ways in which children could be given opportunities to reconsider how they thought about gender stereotypes. People who were counter stereotypically employed were used as examples. In some classrooms these included bringing people to meet the children, for example, female army officers, female Gardaí, female veterinary surgeons, and male nurses. The teaching strategies, which were based on Piagetian constructivist considerations, were indirect, child-centred, and sensitive to the child's identity, (Gash 1991, 1992, 1993b). In addition, teachers were given materials to help them in their classroom interventions.

RESULTS

Stereotype Patterns in Mixed and Single-sex Schools

The influence of school type on gender stereotyping was examined by contrasting each of the 32 gender stereotypes on the SSM for boys and girls separately in single-sex schools and in mixed schools. In these contrasts, statistically significant differences were found on 10 of the 32 stereotypes. For

example, boys in mixed schools (94%) were significantly more likely than boys in boys' schools (87%) to consider weak as a female stereotype ($\chi^2 = 4\ 44$, $df = 1$, $p < 05$), boys in boys' schools (70%) were significantly more likely than boys in mixed schools (57%) to consider talkative as female ($\chi^2 = 7\ 24$, $df = 1$, $p < 01$), boys in boys' schools (43%) were significantly more likely than boys in mixed schools (32%) to consider buying silly things as female ($\chi^2 = 5\ 60$, $df = 1$, $p < 01$), boys in boys' schools (74%) were significantly more likely than boys in mixed schools (34%) to see shy as female ($\chi^2 = 4\ 68$, $df = 1$, $p < 05$), and boys in mixed schools (80%) were significantly more likely than boys in boys' schools (71%) to consider rule making as male ($\chi^2 = 3\ 98$, $df = 1$, $p < 05$)

There are also differences in some cases for girls Girls in girls' schools (62%) were significantly more likely than their female peers in mixed schools (49%) to see fussy as female ($\chi^2 = 5\ 83$, $df = 1$, $p < 02$), girls in mixed schools (81%) were significantly more likely than girls in girls' schools (71%) to see boasting as male ($\chi^2 = 4\ 47$, $df = 1$, $p < 05$), girls in girls' schools (55%) were significantly more likely than girls in mixed schools (42%) to consider females as whining ($\chi^2 = 6\ 59$, $df = 1$, $p < 01$), girls in mixed schools (83%) were significantly more likely than girls in girls' schools (70%) to consider stern as male ($\chi^2 = 6\ 72$, $df = 1$, $p < 01$), and girls in girls' schools (73%) were significantly more likely than girls in mixed schools (59%) to consider being affectionate as female ($\chi^2 = 7\ 67$, $df = 1$, $p < 01$)

The Intervention Programme

Pretest analyses The effects of the variables location, grade level, treatment, and gender on pretest SSM scores were examined in an analysis of variance The purpose of the analysis was to establish the need to covary pretest differences in assessing the effects of the experimental treatment on the posttest SSM scores Rural pupils were significantly more stereotyped on the pretest (M 24 48) than urban pupils (M 24 14) ($F = 4\ 18$, $df = 1{,}998$, $p < 05$) As expected, there was a significant increase in SSM scores with increases in grade level (Table 2) ($F = 180\ 84$, $df = 2{,}998$, $p < 001$) This was qualified by a grade by gender interaction in which girls were slightly more stereotyped than boys at infants' and second classes, but the increases for boys between second and fifth classes were such that boys were more stereotyped at fifth class than girls ($F = 8\ 74$, $df = 2{,}998$, $p < 001$)

TABLE 2

MEAN PRETEST SSM SCORES BY GENDER AND GRADE

Grade	Boys		Girls		Total	
	M	SD	M	SD	M	SD
Infants	21.37	3.31	21.56	3.37	21.43	3.32
Second	23.66	4.92	24.70	4.22	24.14	4.62
Fifth	27.92	3.56	26.46	3.73	27.24	3.70
Total	24.11	4.79	24.55	4.27	24.29	4.58

Posttest analyses. Because of the differences on the pretest SSM scores, analysis of covariance was used to examine the effects of the intervention programme. Variation in the posttest SSM total score was examined by means of a four-factor (grade, gender, location, and treatment) analysis in which pretest SSM was used as a covariate.

Significant main effects were found for grade, gender, and location, but the difference between control and experimental groups was not significant (Table 3). There was a steady significant increase in SSM scores with increase in grade level ($F = 21.68$; $df = 2,906$; $p<.001$). Boys had significantly higher scores than girls ($F = 15.75$; $df=1,906$; $p<.001$) and rural pupils had significantly higher scores than urban pupils ($F = 4.88$; $df = 1,896$; $p<.05$).

These differences are qualified by a number of significant interaction effects. For example, the regular increases expected and found for grade interact with both gender and location. In the gender by grade interaction, boys score slightly higher than girls in infants' and second classes, a difference that is accentuated in fifth class (Table 4) ($F = 3.48$; $df = 2,906$; $p<.05$). In a location by grade interaction, rural children have higher SSM scores than urban children in infants' and fifth classes, whereas in second class there is no difference (Table 5) ($F = 3.08$; $df = 2,906$; $p<.05$). Finally, there is a significant grade by gender by location interaction (Table 6). Here the tendency for rural children to be more stereotyped than urban children in infants' and fifth classes is shown to be due to high SSM scores in rural boys' infants' classes and low SSM scores in urban girls' fifth classes ($F = 4.58$; $df = 1,906$; $p<.01$).

TABLE 3

MEAN POSTTEST SSM SCORES FOR MAIN EFFECTS

Grade					
Infants		Second		Fifth	
M	SD	M	SD	M	SD
22 60	4 90	25 51	4 51	27 57	4 75

Gender					
Boys		Girls		Mixed	
M	SD	M	SD	M	SD
25 55	5 09	24 84	5 12	25 24	5 11

Location			
Rural		Urban	
M	SD	M	SD
25 64	4 58	24 89	5 53

Treatment			
Experimental		Control	
M	SD	M	SD
25 06	5 53	25 41	4 69

TABLE 4

MEAN POSTTEST SSM SCORES BY GENDER AND GRADE

Grade	Boys		Girls		Total	
	M	SD	M	SD	M	SD
Infants	22 67	4 89	22 45	4 95	22 60	4 90
Second	25 86	4 20	25 21	4 74	25 55	4 47
Fifth	28 79	4 04	26 11	5 12	27 57	4 75
Total	25 55	5 09	24 84	5 12	25 25	5 12

TABLE 5

MEAN POSTTEST SSM SCORES BY LOCATION AND GRADE

Grade	Rural		Urban		Total	
	M	SD	M	SD	M	SD
Infants	23.34	5.47	21.83	4.12	22.60	4.90
Second	25.59	3.24	25.45	5.30	25.51	4.51
Fifth	28.25	3.10	27.01	5.70	27.57	4.75
Total	25.64	4.58	24.89	5.53	25.24	5.12

There are two additional significant interaction effects in the ANCOVA which provide conditional support for the hypothesis that the educational intervention lowered SSM posttest scores. First, there is a significant grade by treatment interaction, in which the treatment associated with lowered SSM scores in infants' class seemed less effective in second class, while in fifth class the control group has lower SSM scores (Table 7) ($F = 8.63$; $df = 2,906$; $p<.001$). Second, there is a significant treatment by location interaction, in which the effects of the treatment decreased SSM scores of urban pupils (Table 8). Rural experimental pupils, however, have slightly higher SSM scores than their controls, and the scores of rural and urban control pupils are very similar ($F = 5.39$; $df = 1,906$; $p<.05$).

TABLE 6

MEAN POSTTEST SSM SCORES, BY LOCATION, GENDER, AND GRADE

	Rural				Urban				Total	
	Boys		Girls		Boys		Girls			
	M	SD	M	SD	M	SD	M	SD	M	SD
Infants	23.70	4.92	22.52	6.55	21.54	4.62	22.39	2.91	22.60	4.90
Second	25.85	3.50	25.25	2.87	25.87	4.77	25.19	5.66	25.55	4.47
Fifth	28.82	3.05	27.48	3.04	28.77	4.78	25.10	6.04	27.57	4.75
Total	26.11	3.82	25.08	4.15	25.39	4.72	24.23	4.87	25.25	5.11

TABLE 7

MEAN POSTTEST SSM SCORES BY TREATMENT AND GRADE

Grade	Experimental		Control		Total	
	M	SD	M	SD	M	SD
Infants	21 95	4 10	23 26	5 54	22 60	4 90
Second	25 47	5 10	25 61	3 94	25 51	4 51
Fifth	27 81	5 67	27 34	3 62	27 57	4 75
Total	25 06	5 53	25 43	4 69	25 24	5 12

TABLE 8

MEAN POSTTEST SSM SCORES BY LOCATION AND TREATMENT

	Rural		Urban		Total	
	M	SD	M	SD	M	SD
Experimental	25 81	4 06	24 39	6 51	25 06	5 53
Control	25 47	5 04	25 40	4 39	25 41	4 69
Total	25 64	4 58	24 89	5 53	25 24	5 12

DISCUSSION

A number of clear differences were found in the patterns of stereotypes held by boys and girls in mixed and single-sex schools Negative stereotypes were found in both single-sex and mixed schools For example, there was a tendency for boys in boys' schools, compared to their male peers in mixed schools who had more opportunity to have their perceptions challenged, to see the female stereotypes of being talkative, buying silly things, and being shy as female However, boys in mixed schools, compared to boys in boys' schools, had also learned that they could make rules and that girls were weak Some stereotypes for girls were also found to be specific to the type of school attended Thus, girls in girls' schools, compared to girls in mixed schools, perceived girls as fussy, whining, and affectionate Girls in mixed schools, compared to girls in girls' schools, perceived being stern and boasting as male stereotypes

Analysis of data arising from the intervention programme failed to show reduced SSM scores in treatment groups across the whole sample. There was, however, some indication that the programme worked in parts of the sample. First, there were two interaction effects which indicated that the intervention reduced SSM scores in infants' classes (grade by treatment) and in urban classes (treatment by location). On the pretest, there was also a tendency for the urban sample and for younger children to score lower. In other words, one effect of this type of treatment has been to accentuate existing differences by the assimilation of information from the treatment matching expectations. This is one form of the moderation of environmental influences referred to by Bigler & Liben (1990, 1992), Kohlberg (1966), and Martin and Halverson (1981). Second, evidence of a similar moderation of intervention effect can also be found in the posttest differences for gender and for location. These differences existed on the pretest and were removed by the analysis of covariance. Their persistence as significant posttest differences can be attributed to the experimental treatment. Thus, despite the failure to show a difference between experimental and control group on the posttest, these results indicate qualified success for the experimental treatment.

A number of explanations can be offered for the failure to find a main effect for treatment in our study. First, since it was not possible to investigate the fidelity with which the experimental programme was put into operation, poor programme implementation cannot be excluded as a possible explanation. Second, the way the measure of sex stereotyping was scored may not have been sufficiently sensitive to register actual differences that may have occurred as a result of treatment. The sex stereotype measure requires a dichotomous choice (male or female) for each of the 32 stereotype items and change of choice a complete reversal of initial viewpoint. Because of such considerations in the following year (1990) of the TENET programme, the test was altered so that it allowed pupils use a 5-point scale: always a boy, usually a boy, either a boy or girl, usually a girl, and always a girl. With this more sensitive measure, it was possible to demonstrate the success of the intervention programme in reducing gender stereotypes (Gash & Morgan, 1993).

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