A STUDY OF CHANGES IN SELF-REPORT CONCERNING CULTURAL BIAS AND OPENNESS TOWARD CHANGE AMONG DESEGREGATION WORKSHOP PARTICIPANTS

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SUMMARY

The sixty five teachers who attended a desegregation workshop were administered two instruments which attempted to measure cultural bias and openness toward change. Upon factor analysis the Curriculum Change Measure yielded 14 factors. Comparisons of pre-test and post-test results showed that small changes had occurred in the desired direction, as measured by the Cultural Differentiation Measure and the Curriculum Change Measure.

INTRODUCTION

During the summer of 1970 a six-week workshop was held for approximately 65 teachers who taught at six newly integrated secondary schools. This bi-racial group of teachers was involved in small group, problem-centered discussions, in the reading of pertinent books, in role play of inter-racial student-teacher interactions, in small group encounter discussion, and in large group presentation-discussions. The goals of the workshop were essentially two-fold.

1) To help teachers become more accepting of people from other cultures and races,

2) To help teachers accept and plan for teaching in open-space instructional areas.

A review of relevant literature revealed that a number of attempts to assess teacher readiness for curriculum change have been reported in doctoral studies.

Trumbo (1961) studied the attitudes toward change of 278 employees of an insurance company with a nine-item, Likert-type scale he leveloped. He reported an odd-even reliability of .79, astonishngly high for such a short instrument.

Dempsey (1963) investigated relationships between teacher's judgment of barriers to curriculum change and scores on the Trumbo Readiness to Change Scale and reported that those with higher scores on the Change Scale tended to perceive fewer barriers than those with lower scores.

Childs (1965) investigated the relationship between belief systems of school administrators and teachers and the adoption of new educational practices. He sampled eight school districts, four relatively innovative and four relatively non-innovative. Using an innovativeness scale of his own and a cost factor index he reported a significantly greater proportion of teachers in the innovative schools and open belief systems than was the case with teachers from non-innovative schools.

Duncan (1954) devised the Curriculum Improvement Measure (CIM) to measure readiness of school faculties for curriculum change. The 24-item, Likert-type instrument contains six questions each on attitudes toward groups, pupil and school problems, curriculum improvement, and modern social problems. The CIM has a reported internal consistency reliability of .65. This relatively low reliability makes it an inadequate instrument for identifying individuals or assessing small groups. But the instrument may be used to assess attitude changes for relatively large faculties or teacher groups. Its validity was established by showing that school faculties rated by faculty members working with them as high on curriculum change tended to score higher as a group than school faculties judged to be doing relatively little curriculum change.

Leas (1965) compared academic-area traditionalists and innovators on his own questionnaire, the Gough-Sanford Flexibility Scale, and the Rokeach Opinionation Scale. The Opinionation Scale differentiated in degree of conservatism between traditionalists and innovators, and the Flexibility Scale indicated greater flexibility or the innovators. Leas found some other differences which might ave relevance in constructing a scale.

An attempt to measure teacher attitudes which are relevant to the teaching of underprivileged children was reported by Edwards (1966). Factor analysis of responses to the Cultural Differentiation Questionnaire (CDQ) revealed a far more complex factor structure than the original six dimensions would have indicated. In this study the instrument did detect some expressed changes in participants' responses while participating in workshop sessions dealing with the education of the underprivileged.

PROCEDURE

As a result of this review of the literature, the 72 item questionnaire reported by Edwards (1966) was used to measure changes that might occur in reference to the acceptance of people from other cultures and races.

Another questionnaire was created by editing Duncan's (1954) CIM items, and by editing Trumbo's (1961) Work Related Change Scale items and by selecting some items from Rokeach's d-scale (1960), and then by merging them into a single instrument labeled the Curriculum Change Measure (CCM). A six-point Libert-type agree-disagree response mode was provided for all but one of the items. This 55 item instrument was used to measure changes that might occur in reference to the acceptance of open-space instructional area and the needed curricular changes which must occur in order to utilize these open-space areas.

The CDQ and the CCM were administered to the workshop participants early on the second day of the workshop and on the next to last day of the workshop. This is a pre-test, post-test, one group design. This type of design cannot show that any changes that were observed are the result of workshop participation. However, if changes are or are not observed in the desired direction, we may conclude that desired changes in the group were or were not expressed regardless of the cause.

The participants were instructed to use the last four or five digits of their phone numbers or social security numbers or to make up a number which they could easily remember to use on the post-questionnaire. The numbers used by the participants on their pre-questionnaires were displayed by an overhead projector during the post testing session. Of the 62 people who responded on the pre-questionnaire, 52 of the 58 post-questionnaires were matched with identically numbered pre-questionnaires. It was explained to the participants that the numbering procedure was necessary for the use of certain types of statistical data analysis.

Edwards (1966) reported the factor structure for the CDQ. Since no such information was available for the CCM it was necessary to factor analyze it in order to be able to develop subscale scoring.

The pre-test and post-test responses of all participants on the CCM were pooled and factor analyzed using a computer program from Guertin and Bailey (1970). This computer program, EEL 503 produces orthogonal varimax solutions. The 14 factor solution was chosen as the solution that produced the most easily reationalized factors. This 14 factor solution accounted for 59.75 percent of the total score variance and for 75.65 percent of all common variance. Table 1 presents the factor labels, item statements, item numbers, factor loadings, row sum of squared loadings, and communality estimates (h^2).

TABLE 1

The Fourteen Factor Solution for the CCM

Items and Factor Labels	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 1 Curricular Traditionalist			
19. In a curriculum improvement program regular lectures on curriculum and curriculum theory should be given by a consultant	0.67	0.58	0.73
24. It is essential in a curriculum improvement program that the teachers thoroughly study a good text on curriculum	0.62	0.66	0.82
27. It would take a sizeable raise in pay to get me to voluntarily transfer to another position	0.49	0.39	0.62
22. To be a good group leader in our school a person must be able to control the people in the group	0.40	0.56	0.75
38. Learning is essentially a process of increasing one's store of information about various fields of knowledge	0.37	0.71	0.85
33. Intelligent self-direction can be developed best through participating in experiences for which the individual feels a direct concern	0.33	0.53	0.82
20. I like a work situation where I know that I will be doing my work about the same way one week to the next	0.31	0.61	0.75

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 2 Experimentalism			
50. Controversial issues should be taught in schools because they help the student better determine his role in society	0.75	0.87	0.98
54. Discussing controversial issues in the classroom is a good way of helping youth develop their judgment	0.71	0.63	0.82
43. Existing knowledge is tentative and is subject to revision in light of new facts	0.70	0.63	0.77
42. Teachers and pupils should become involved in the problems and issues of our time	0.68	0.64	0.79
52. Teachers and school administrators have the same duty to take an active part in the political affairs of the community as any other citizen	0.60	0.56	0.74
48. When the school remains silent on social issues, it is not meeting its responsibilities	0.59	0.68	0.82
37. By continuous experimentation with new materials, teachers can gradually improve the program of instruction	0.55	0.51	0.76
47. We will give the best education to each child if we emphasize purpose, activity, freedom, and all-around development	0.52	0.55	0.83
1. The intelligence of the people should be relied upon for governing themselves	0.51	0.48	0.72
2. The best form of democratic decision making is by majority vote	0.44	0.65	0.75
36. The traditional moral standards of our culture should not just be accepted; they should be examined and tested in solving the present problems of students	0.42	0.65	0.84
44. To learn means to devise way of acting in a situation for which old ways are inadequate	0.41	0.74	0.86
55. The work situation that you would consider ideal for you would be one where the way you do your work: (check one) ____Is Always the Same ____Is Usually the Same ____Undecided ____Changes to Some Extent ____Changes a Great Deal	0.38	0.57	0.80

		Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 3	**Impunity from Criticism**			
8.	The solutions for classroom curriculum problems should be given to teachers from sources outside this school, because the teachers here are too busy to write complex curriculum plans	0.76	0.67	0.81
10.	Bad classroom situations are generally caused by students who misbehave	0.73	0.67	0.83
9.	The trouble with most teaching positions is that you just get used to doing things in one way and then they want you to do them differently	0.56	0.81	0.93
7.	Individuals lose their effectiveness when they work in faculty groups having 10 to 12 members	0.56	0.57	0.79
23.	When I get used to doing things in one way it is disturbing to have to change to a new method	0.50	0.46	0.66
4.	It is characteristic of educational problems that if you try to solve one you find two more and end up by doing little about any of them	0.46	0.60	0.73
12.	I would prefer to stay with a teaching position that I know I can handle than to change to one where most things would be new to me	0.42	0.70	0.86
11.	Our school committees are most effective when a strong leader controls the committee	0.40	0.43	0.70
6.	One can never feel at ease on a job where the ways of doing things are always being changed	0.35	0.68	0.80

		Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 4	**Endorsement of Competition**			
30.	Schools should emphasize competition and self-reliance more than cooperation and adjustment	0.59	0.47	0.65
14.	Society operates pretty much on a "dog-eat-dog" basis	0.45	0.66	0.76
51.	You should teach a student what he ought to know rather than what he wants to know	0.44	0.67	0.78
40.	There are too many social activities in school today	0.36	0.57	0.79
31.	Grade schools should stick to the three R's	0.32	0.49	0.73

	Factor Loadings	Row Sum of Squared Loadings	h^2

Factor 5 Moral Relativism

	Factor Loadings	Row Sum of Squared Loadings	h^2
41. Moral learning is experimental; the child should be taught to test alternatives before accepting any of them	0.68	0.69	0.85
53. In the interest of social stability, the youth of this generation should be brought into conformity with the enduring beliefs and institutions of our national heritage	0.64	0.74	0.85
34. The teacher must teach his or her students the correct moral principles in order to bring about their healthy moral development	0.34	0.55	0.68
29. As a member of a small group I feel a responsibility to participate whether I am interested in the matter or not	0.34	0.56	0.77
26. The goal of curriculum improvement efforts is the revision of old courses or the introduction of new courses	0.31	0.58	0.77

	Factor Loadings	Row Sum of Squared Loadings	h^2

Factor 6 Sense of Responsibility to Small Groups

	Factor Loadings	Row Sum of Squared Loadings	h^2
25. As long as I am a member of a group I am responsible to abide by the decisions the group makes	0.64	0.52	0.66
29. As a member of a small group I feel a responsibility to participate whether I am interested in the matter or not	0.35	0.56	0.77
26. The goal of curriculum improvement efforts is the revision of old courses or the introduction of new courses	0.34	0.58	-.77

	Factor Loadings	Row Sum of Squared Loadings	h^2

Factor 7 Traditionalism

	Factor Loadings	Row Sum of Squared Loadings	h^2
46. The curriculum should contain an orderly arrangement of subjects that represent the best of our cultural heritage	0.61	0.59	0.81
17. The trouble with many people is that when they find a job they can do well, they don't stick with it	0.51	0.41	0.55
49. The best preparation for the future is a thorough knowledge of the past	0.51	0.61	0.80
39. Learning is a process of mastering objective knowledge and developing skills by drill, trial and error, memorization and logical deduction	0.46	0.65	0.83
45. The primary aim of instruction is mastery of knowledge	0.34	0.58	0.76

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 8 Resistance to Curriculum Change			
5. In a curriculum improvement program a specialist should devote a good deal of time to demonstration teaching	0.75	0.64	0.76
9. The trouble with most teaching positions is that you just get used to doing things in one way and then they want you to do them differently	0.48	0.81	0.93
4. It is characteristic of educational problems that if you try to solve one you find two more and end up by doing little about any of them	0.46	0.60	0.73
55. The work situation that you would consider ideal for you would be one where the way you do your work: (check one) ____Is Always the Same ____Is Usually the Same ____Undecided ____Changes to Some Extent ____Changes a Great Deal	0.42	0.57	0.80
12. I would prefer to stay with a teaching position that I know I can handle than to change to one where most things would be new to me	0.36	0.70	0.85

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 9 Educational Isolationism			
18. As far as our school is concerned there is wisdom in the adage "let well enough alone"	0.60	0.50	0.76
13. The activities of such different groups as schools, business, and government are quite interdependent	0.60	0.45	0.66
39. Learning is a process of mastering objective knowledge and developing skills by drill, trial and error, memorization and logical deduction	0.48	0.55	0.83
38. Learning is essentially a process of increasing one's store of information about the various fields of knowledge	0.45	0.71	0.85
33. Intelligent self-direction can be developed best through participating in experiences for which the individual feels a direct concern	0.32	0.53	0.82
26. The goal of curriculum improvement efforts is the revision of old courses or the introduction of new courses	0.31	0.58	0.77

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 10 Activity Oriented School Program			
32. School sports, folk games, clubs, and activities such as these should be an important part of the school program	0.79	0.77	0.90
47. We will give the best education to each child if we emphasize purpose, activity, freedom, and all-around development	0.42	0.65	0.83
33. Intelligent self-direction can be developed best through participating in experiences for which the individual feels a direct concern	0.40	0.53	0.82
36. The traditional moral standards of our culture should not just be accepted; they should be examined and tested in solving the present problems of students	0.35	0.65	0.84
40. There are too many social activities in schools today	0.31	0.57	0.79
31. Grade schools should stick to the three R's	0.30	0.49	0.73

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 11 (Unlabelled)			
28. School problems are usually caused by faulty administration	0.63	0.46	0.67
14. Society operates pretty much on a "dog-eat-dog" basis	0.50	0.66	0.76
48. When a school remains silent on social issues, it is not meeting its responsibilities	0.40	0.68	0.82
6. One can never feel at ease on a job where the ways of doing things are always being changed	0.33	0.68	0.80

	Factor Loadings	Row Sum of Squared Loadings	h^2
Factor 12 Subject Matter and Control Orientation			
16. The main reason that instruction should be individualized is because pupils differ in intelligence	0.64	0.56	0.76
22. To be a good group leader in our school a person must be able to control people in the group	0.56	0.56	0.75
21. Discipline problems are best handled by locating the culprit and properly punishing him	0.53	0.48	0.65
35. The backbone of the school curriculum is subject matter; activities are useful mainly to facilitate the learning of subject matter	0.53	0.64	0.83

Factor 12 Subject Matter and
Control Orientation (cont.)

		Factor Loadings	Row Sum of Squared Loadings	h^2
40.	There are too many social activities in schools today	0.49	0.57	0.79
38.	Learning is essentially a process of increasing one's store of information about the various fields of knowledge	0.44	0.71	0.85
45.	The primary aim of instruction is mastery of knowledge	0.36	0.58	0.76
12.	I would prefer to stay with a teaching position that I know I can handle than to change to one where most things would be new to me	0.36	0.70	0.85
34.	The teacher must teach his or her students the correct moral principles in order to bring about their healthy moral development	0.31	0.55	0.68

		Factor Loadings	Row Sum of Squared Loadings	h^2
	Factor 13 Preference for Work Related Change			
3.	If I could do as I pleased, I would change the kind of work I do every few months	0.71	0.54	0.65
20.	I like a work situation where I know that I will be doing my work about the same way one week to the next	0.47	0.61	0.75
26.	The goal of curriculum improvement efforts is the revision of old courses or the introduction of new courses	0.39	0.58	0.77
6.	One can never feel at ease on a job where the ways of doing things are always being changed	0.38	0.67	0.78
51.	You should teach a student what he ought to know rather than what he wants to know	0.37	0.67	0.78
12.	I would prefer to stay with a teaching position that I know I can handle than to change to one where most things would be new to me	0.31	0.70	0.85

		Factor Loadings	Row Sum of Squared Loadings	h^2
	Factor 14 Authoritarianism			
44.	To learn means to devise a way of acting in a situation for which old ways are inadequate	0.66	0.74	0.86
15.	A difficulty with group work is that the able people get outvoted by the average	0.64	0.59	0.80
45.	The primary aim of instruction is mastery of knowledge	0.41	0.58	0.76
35.	The backbone of the school curriculum is subject matter; activities are useful mainly to facilitate the learning of subject matter	0.38	0.64	0.83
51.	You should teach a student what he ought to know rather than what he wants to know	0.37	0.67	0.78

RESULTS

CDQ factors from Edwards (1966) that would seem relevant to teacher acceptance of the underprivileged along with item numbers are:

Factor 3:: Protection of students from unnecessary restrictions.
7, 20, 36, 41, 51, 57, 61

Factor 5: Belief in the ultimate goodness of human beings.
4, 10, 15, 41, 53, 59, 65

Factor 9: Identification with animals and rejection of peers.
5, 7, 14, 33, 44, 51, 56

Factor 10: Teacher concern for underprivileged.
29, 35, 41, 44, 50, 52, 61

Factor 15: Teachers main concern with those who want to learn.
4, 27, 28, 41, 48, 58, 68

Factor 16: Judging children on an individual basis.
10, 38, 42, 62, 66, 70, 72

Factor 18. Objection made by self-made man to behavior science.
7, 11, 15, 26, 50, 58, 64

Factor 24: Identification with less successful members of society.
10, 11, 12, 34, 50, 53, 59

Factor 25: Rejection of physical intimacy.
13, 14, 22, 44, 47, 51, 71

An inspection of the factor labels of the CCM and the items loading on these factors indicated that the following factors have relevance concerning teachers' attitudes towards curriculum changes:

Factor 3, Impunity from criticism.
Factor 4, Endorsement of competition
Factor 5, Moral relativism.
Factor 7, Traditionalism.
Factor 8, Resistance to curriculum change
Factor 9, Educational isolationism.
Factor 10, Activity oriented school program.
Factor 12, Subject matter and control orientation.
Factor 13, Preference for work related change.
Factor 14. Authoritarianism.

TABLE 2
Paired Difference t-ratios for Variables Measured by the Cultural Differentiation Questionnaire

Factor Number	Pre Mean	Post Mean	S. E. of Difference	t Ratio	Con- clusion	Change in Desired Direction ?
3	6. 917	6. 367	0. 161	-3. 42	Sign.	No
5	10. 377	10. 791	0. 193	2. 14	Sign.	Yes
9	10. 159	9. 875	0. 209	-1. 36	N. S.	Yes
10	6. 705	6. 712	0. 155	0. 04	N. S.	Yes
15	13. 042	13. 770	0. 204	3. 57	Sign.	Yes
16	11. 007	10. 898	0. 217	-0. 51	N. S.	Yes
18	10. 793	10. 719	0. 259	-0. 29	N. S.	Yes
24	12. 304	12. 955	0. 205	3. 17	Sign.	Yes
25	7. 787	7. 489	0. 245	-1. 22	N. S.	Yes

df = 51 $t.05 = 2.008$ $t.01 = 2.678$ two-tailed test

As estimates of factor scores for a subject his response to an item was multiplied by the validity weight for the item (squared factor loading). All the products were accumulated for items relevant for that factor. These weighted totals are the factor loading index values which give the group means in Tables 2 and 3 that were examined with t-ratios.

The following table reports the results of the t-testing (differences in paired scores) changes between pre and post performances measured by the CDQ. These variables appear to have labels closely related to the acceptance of the underprivileged. The desired direction of change is indicated in the last column of Table 2. The desired direction of change was determined after an inspection of the nature of the items loading on the factors and the size and sign of the factor loadings.

The following table reports the t-testing of changes occurring on the CCM variables which are most closely related to readiness for curriculum change. The information presented in Table 3 for the CCM is analogous to the information contained in Table 2 for the CDQ.

TABLE 3

Paired Difference t-ratios for Variables Measured
by the Curriculum Change Measure

Factor Number	Pre Mean	Post Mean	S. E. of Difference	t Ratio	Con-clusion	Change in Desired Direction ?
3	14.666	13.281	0.503	-2.76	Sign.	Yes
4	6.154	5.833	0.198	-1.63	N.S.	Yes
5	8.242	8.408	0.222	0.75	N.S.	Yes
7	10.705	10.076	0.299	-2.10	Sign.	Yes
8	7.429	7.178	0.259	-0.969	N.S.	Yes
9	5.874	5.828	0.232	-0.201	N.S.	Yes
10	7.026	7.621	0.199	-2.981	Sign.	Yes
12	16.390	14.766	0.392	-4.135	Sign.	Yes
13	8.819	9.758	0.230	4.073	Sign.	Yes
14	7.438	6.487	0.223	-4.254	Sign.	Yes

df = 51   t.05 = 2.008   t.01 = 2.678   two-tailed test

The direction of changes in this self-report all occurred in the desired direction, an event unlikely to occur by chance. Statistically significant differences were found for factor variables 3, 7, 10, 12, 13, and 14. The direction of all self-report changes, except that for factor 3, "Protection of students from unnecessary restrictions," occurred in the desired direction. Statistically significant differences were found for the following variables:

1.) Factor 3; "Protection of students from unnecessary restrictions,"

2.) Factor 5; "Belief in the ultimate goodness of human beings,"

3.) Factor 15; "Teachers main concern with those who already want to learn,"

4.) Factor 24; "Identification with the less successful members of society."

The fact that 8 out of 9 differences occurred in the desired direction is, according to the Chi-square statistic, a significantly non-random event beyond the 0.05 level of confidence. The fact that 4 out of 9 differences were significant at or beyond the 0.05 level of confidence is, according to the Chi-square statistic a significantly non-random event beyond the .001 level of confidence.

CONCLUSIONS

With regard to goal number one of the workshop, which was concerned with helping teachers to become more accepting of people of other races and cultures, small gains were made during the period of the workshop. This is evidenced by the fact that 8 of the 9 relevant measures of the CDQ had post group mean shifts in the desired direction away from the pre group mean positions. This small gain in acceptance is also evidenced by the fact that 3 of the 8 desired changes were statistically significant.

With regard to goal number two of the workshop, which was concerned with helping teachers to accept the curriculum changes necessitated by open-space classrooms and integration, small gains were made during the period of the workshop. This is evidenced by the fact that all 10 of the relevant measures of the CCM* had post group mean shifts in the desired direction away from the pre group mean positions. The small gain in openness towards curriculum change is also evidenced by the fact that 6 of the 10 desired changes were statistically significant.

We then conclude that modest changes in self-reported attitudes did occur, and that these changes in self-report occurred for the most part in the desired directions as indicated by the workshop goals.

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*Copies of the CCM may be obtained from this author. Edwards (1966) provided a copy of the CDQ and item factor loadings as a part of his discussion.

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