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# **THEORY AND RESEARCH**

*in Social Education*

**Volume VII**

**Number 4**

**Winter 1980**

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*a journal to stimulate and communicate systematic thinking and research in social education*

# **THEORY AND RESEARCH**

## *in Social Education*

*the official journal of the college and university faculty assembly of the national council for the social studies*

**Volume VII**  
**Number 4**  
**Winter 1980**

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*H. Michael Hartoonian*

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**INFLUENCE OF SOLICITATION PATTERN, TYPE OF  
PRACTICE EXAMPLE, AND STUDENT RESPONSE ON  
PUPIL BEHAVIOR, COMMITMENT TO  
DISCUSSION AND CONCEPT ATTAINMENT**

**Bruce D. Smith**  
University of Cincinnati

Regardless of grade level, a common instructional pattern in social studies is composed of teacher questions followed by student answers (Bellack, 1966; Sie, Baker, and Vgelkner, 1973; Napier and Klingensmith, 1977). In such teacher-led discussions, an important question is how to hold the attention of all students in the classroom, not just that of the one who answers aloud. Rosenshine (1977) identified "student attention to relevant academic activities" as one of the two most significant variables to emerge from teacher effectiveness studies conducted since 1973. Rosenshine (1979) reviewed correlational studies by Block and by Stallings and Kaskowitz in which student attention to academic activities was a significant positive predictor of learning. Block found correlations of student attention with gain in achievement to run between .40 and .52; Stallings and Kaskowitz found student attention to academic tasks yielded higher correlations (.30 to .60) with achievement gains than any of the other behaviors or interactions of teachers or students that were studied. Instructional behaviors which stimulate student attention to academic activities appear to be important for effective teaching.

The relevant academic activities in teacher-led class discussions are (1) intellectual involvement with the problems reflected in teacher questions and (2) consideration of the ideas expressed by classmates who answer aloud in comparison to one's own thoughts. This experiment investigated the effects of solicitation pattern, type of practice example, response mode, and response sequence on three student variables. These variables, which are related to student attention to relevant academic activities, were pupil classroom behavior, commitment to discussion, and concept attainment.

## **Solicitation Pattern**

Instructional theorists (Anderson and Faust, 1973; Gagne, 1974; Good and Brophy, 1977; Hudgins, 1971) speculate that teachers who exhibit an unpredictable pattern in soliciting respondents will be more successful in maintaining the intellectual involvement of students than teachers who show a predictable pattern. Unpredictable solicitation means that students are unable to anticipate whether or when they will be selected to respond aloud. A predictable pattern permits students to foresee or to control whether they will respond overtly during a discussion. Predictable patterns include such common teachers practices as (1) relying excessively on volunteers and callouts; (2) calling frequently on a select group of pupils (e.g., high ability pupils), while seldom or never selecting other members of the class (e.g., low ability pupils); and (3) selecting students to respond in some obvious order (e.g., up and down the rows). Kounin (1970) reported that teachers who were successful classroom managers maintained pupil attention to academic activities partially by use of an unpredictable solicitation pattern. Yet Hughes (1973), who studied three types of solicitation pattern (predictable, unpredictable, and voluntary) experimentally, found no significant influence on student learning. The experiment reported here investigated the effect of teacher solicitation pattern (unpredictable compared to predictable) on student behavior and learning.

## **Type of Practice Example**

Concepts are frequently discussed in social studies classes. A crucial part of concept instruction is the application phase, a segment of instruction in which students practice using ideas previously presented to them. In concept instruction appropriate practice involves application of the concept rule to instances and non-instances of the concept. During the application phase a teacher may direct students to practice with either new examples, presented to students for the first time during the application phase, or old examples, instances that were presented to and classified for students at a prior time in an instructional sequence. When a teacher presents old examples, students practice only memory level use of the concept. But when new examples are presented, students are required to practice meaningful processing of the concept rule.

Presentation of new examples should enhance transfer (Ellis, 1972). Martorella (1977) cited empirical studies which suggest that increasing the number of examples improves concept learning. Anderson and Kulhauy (1972) found that practice which required meaningful processing of a concept contributed more to learning than did rote practice. The use of new examples should increase student attention to the flow of ideas in an application lesson. Processing new examples requires higher levels of thinking, and McKeown (1975) found that higher level questions contribute to positive student attitudes toward content studied. Despite the acknowledged importance of type of practice exam-

ple, no empirical studies were located that directly compared the influence of discussing new rather than old instances on student behavior and learning. This inquiry examined the influence of type of practice examples on student attention and learning.

## Response Mode

One of the most important features of instruction is the way that students are called upon to manipulate, act upon, or respond to the content to be learned. Since instruction involves the design of situations that require students to interact with instructional stimuli, the mode (overt compared to non-overt) by which students respond should be related to learning. Many research studies have examined this variable.

Overt response opportunities are unequally distributed in many classrooms. Teachers tend much more frequently to nominate for overt responding students perceived to have high ability than either middle or low ability pupils (Brophy and Good, 1974). Differential response opportunities increase with grade level: the higher the grade, the more uneven the distribution of overt responding within a classroom (Rist, 1970). Although uneven response opportunities are well documented, much less is known about the consequences of different response modes.

Research in programmed instruction indicates that overt responding is superior to other response modes only when the material to be learned is either technical, difficult, or unfamiliar (Tobias, 1973). In a major review of laboratory research about concept learning, Clark (1971) concluded that most studies which examined student response mode showed that the greater the involvement of the learner in the verbal or physical manipulations of the concept, the greater the degree of concept learning. Correlational studies, conducted in school settings, also suggest the importance of response mode. In a study that examined the relationship between student responding the concept learning, Armento (1976) concluded that the more students were able to practice with and verbally manipulate a concept, the stronger was their gain. Epstein and McPartland (1976) found a significant, positive, moderate correlation between student self-reported frequency of opportunity to participate overtly in class and scores on the commitment to class work subscale of the quality of school life measure.

Four experiments about the effects of response mode have been conducted in classroom or quasi-classroom discussions. Two of them (Michael and Macoby, 1961; Travers *et al.*, 1964) found a significant advantage for overt responding over observing others interact with the teacher. But two other studies (Kester and Letchworth, 1972; Hughes, 1973) reported no significant difference between overt and non-overt responders.

A contextual difference might explain these conflicting findings. In the Travers study, which reported a significant advantage for overt responders, the teacher used a predictable solicitation pattern, notifying

some students that they would not be selected to answer aloud. In the Hughes study, which found no significant difference, the teacher used an unpredictable solicitation pattern and pupils were uncertain as to whether they would be called upon to respond overtly. It was impossible to determine the solicitation pattern used in the other two experiments. The effect of overt responding in classroom discussions may depend upon the type of solicitation pattern used, and this experiment was designed to examine that possibility.

### **Response Sequence**

The effects of overt responding can be clarified further by considering the impact of response sequence on concept learning. In this experiment two students were nominated to respond overtly for each case study discussed during the application lesson. Overt responders can be compared in terms of their response sequence, a variable with two levels. A primary responder is the first student to answer a question about a case study; a secondary responder is the student to whom the same question is redirected.

Response sequence is of interest because it is related to the effects of redirection. Redirection, withholding teacher feedback after a pupil has responded to a question and instead asking another pupil to elaborate or comment upon the original question, may enhance attention and achievement gains. Redirection increases the number of overt responders during a discussion. It also encourages students' attention to the ideas expressed by their classmates because, if they know they may be selected to comment upon the answers given by their fellow students, pupils have an incentive to remain involved intellectually with those ideas. Wright and Nuthall (1970) reported that frequency of redirection is correlated positively with student learning. However, in an experimental study, Gall *et al.* (1978) found that redirection had no significant influence on learning. To the author's knowledge no studies had considered whether it makes a difference if a student is the first one to answer rather than the one who responds to the redirected original question. This study examined differences between primary and secondary responders.

### **Research Problem**

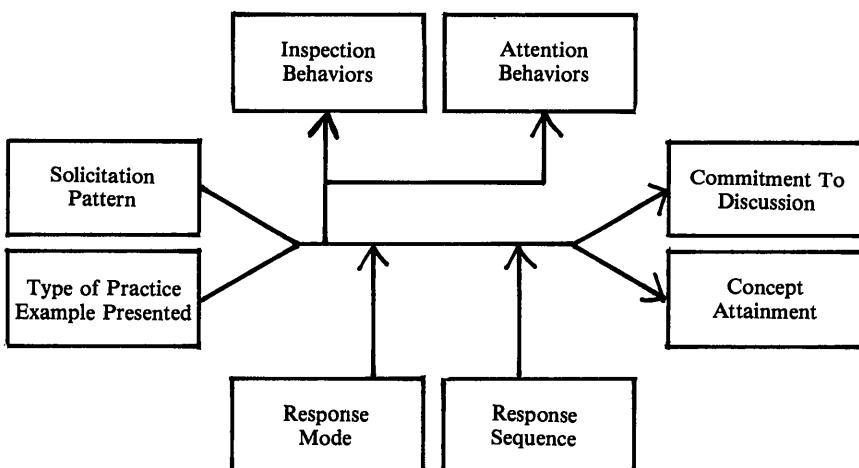
This experiment investigated the effects of four independent variables—solicitation pattern (predictable versus unpredictable), type of example (new versus old), response mode (overt versus non-overt), and response sequence (primary versus secondary)—on three dependent variables: pupil classroom behavior, commitment to discussion, and concept attainment. Figure 1 depicts the relationship among the variables.

## Methods

### Subject Assignment in Research Design

An available group of 589 eleventh and twelfth grade social studies students whose teachers volunteered for the study participated in the research, conducted in twenty-four classrooms in five Indiana schools. Two research designs were used. Commitment to discussion and concept attainment were analyzed in a split-plot factorial design (Kirk, 1968) in which solicitation pattern and type of practice example were between-block variables and student response was a within-block variable. Intact class units were randomly assigned to the between-block treatments. One half of the classrooms were randomly assigned to each level of the solicitation pattern variable (unpredictable, predictable), and within those levels classes were randomly assigned to type of practice example (old, new). Individual students within each classroom were randomly assigned to overt to non-overt response modes. Primary and secondary responders were also determined randomly. Two concept lessons were taught in each class and randomization to the student response variables occurred independently for each lesson.

**Figure 1: Variables and Relationships Investigated**



Data on pupil classroom behaviors were analyzed in a two-way ANOVA, with solicitation pattern and type of example as factors. This design was used because of the way data on classroom behavior were collected. For the classroom behaviors the researcher was able to count the frequency of occurrence in each class but did not attempt to record individual students by name, so it was impossible to link the classroom behaviors with response mode. Consequently, a simple two-way ANOVA was used to analyze classroom behavior variables.

## **Experimental Procedures**

Data for each class were collected over a four day sequence, Monday through Thursday. On Monday students were tested on verbal ability, using form Am, level one, of the Quick Word Test (Harcourt Brace Jovanovich, 1964). The QWT provides a quick, reliable measure of general verbal ability (Nunnally, 1972). QWT scores were used to calculate residual gain scores to reduce the effects of individual differences in verbal ability on concept learning. Pupils were not informed of the exact nature of the experiment, but instead were told that the researcher was field testing the social studies filmstrips that were used in the lessons. Two lessons were taught during the experiment. One concerned the concept of consensus and was taught on Tuesday; the other dealt with role conflict and was presented on Wednesday.

Since the experiment concerned the operation of the independent variables in the context of concept application instruction, the phase of lessons in which a concept was initially presented to students needed to be constant across treatment combinations. Each concept was initially presented on a short filmstrip (Woodley, 1975), which insured that all students were exposed to the same information for an identical length of time. The filmstrips used a rule-example instructional mode, but they contained no application exercises. After each filmstrip an application lesson was taught by the regular classroom teacher according to detailed plans provided by the researcher, which minimized extraneous variation across treatments.

In all classes discussion was based on a series of case studies contained in a concept application packet. The packets used in some classes contained old examples of the concept which were case studies substantively identical to those presented in the filmstrip. Thus, students in this treatment practiced using the concept at a recall level of thinking. For the new examples treatment the researcher wrote new case studies to which the concept could be applied. Hence students in this treatment practiced using the concept at an interpretation level. The packet for the consensus lesson contained one case study divided into five parts, a format dictated by the way the concept was presented in the filmstrip. The packet for the role conflict lesson contained six discrete case studies. Two students were randomly selected before each lesson to respond overtly to questions about each case study. Hence, there were ten overt responses in each class for the consensus lesson, and twelve in the role conflict lesson. The order in which overt responders answered questions was randomly determined.

At the beginning of the application phase each teacher announced the type of solicitation pattern operating in the class. These are described as follows:

1. Unpredictable Solicitation Patterns: "Now I'm going to ask some questions about (name of concept presented in the filmstrip) because I want you to practice using those ideas. I'm

going to skip around in selecting students to answer the questions aloud. After one person answers I will randomly pick someone else to explain whether they agree or disagree with the first answer." (In fact, the researcher had already randomly selected overt responders and listed their names on the teacher's lesson plan.)

2. Predictable Solicitation Pattern: "Now I'm going to ask some questions about (name of concept presented in the filmstrip) because I want you to practice using those ideas. I will tell you now which students I'm going to call on so everyone will know when their turn to answer will come." (The teacher then named which students would be selected and the order in which they would be called upon.)

The solicitation pattern was announced twice, once at the beginning of the application phase and again midway through it.

To reaffirm the solicitation pattern, each teacher followed a particular solicitation structure each time a case study was discussed. An unpredictable solicitation structure is described as follows: (1) ask a question before naming a respondent, (2) pause briefly before naming the student selected to answer overtly, (3) after that student answers redirect the question to another student following steps 1 and 2 again, and (4) furnish appropriate feedback and ask probing questions addressed to both respondents. A predictable solicitation structure is described as follows: (1) name two respondents before directing students to read the application case study, (2) name the student to answer before stating the question, (3) pause until the nominated student answers and then redirect the question to the second student, and (4) provide appropriate feedback and ask probing questions addressed to both respondents. By phrasing questions in these ways teachers continually reaffirmed the prescribed solicitation pattern.

Teachers were asked to probe until each responding student not only classified a practice example but also explained the reasons for the classification. Students who responded overtly were encouraged to make elaborate answers. Teachers were requested to avoid long monologues about the concept because students could then ignore the answers given by classmates but attend to the teacher's comments and still acquire the concept. Teachers were permitted to make short clarifying comments whenever they were necessary. No teachers lapsed into long monologues.

One other condition was imposed. Teachers were requested to avoid reprimanding students who were inattentive, unless their behavior threatened to disrupt the entire class. Hence, any differences in inspection and attention behaviors due to treatments could be manifested. In no case did a teacher reprimand students who failed to pay attention.

Immediately after the role conflict lesson on Wednesday, commitment to discussion during that lesson was measured on a successive in-

tervals scale. The test of concept learning, which contained questions only about role conflict, was given on Thursday. Student comprehension of the consensus concept was not tested. That lesson was included as a sensitizing treatment. It provided teachers with an opportunity to practice the instructional treatments, and it accustomed teachers and students to the presence of an observer in the classroom. Measures of inspection and attention behaviors were recorded for both the consensus and role conflict lessons, the first and second lessons respectively.

Two methods were used to verify the presence of the treatments. The researcher observed every lesson and completed a checklist to insure tht the appropriate treatments occurred. After each lesson pupils responded to two agree-disagree items to assess their perceptions of (1) whether old or new examples were discussed and (2) whether students were selected predictably or unpredictably. These reports clearly showed that students were aware of the treatments.

## **Dependent Variables and Measures**

*Classroom Behaviors.* Two student classroom behaviors were studied: inspection and attention behaviors. Both were observable indicators of pupil involvement with relevant instructional activities. Inspection behavior refers to observable actions taken by students as they examine stimulus material in preparation for subsequent discussion. In application lessons students are usually presented with some stimulus material (e.g., case studies, problem situations, statistical data) to which the concept to be learned can be applied. Familiarity with that content is a basic requirement to follow and, therefore, to benefit from discussion. Students who maintained eye focus on the case study stimulus material for a specified time during the inspection period were counted as thoroughly inspecting stimulus material. Students who engaged in visual wandering during this period were categorized as not thoroughly inspecting the relevant stimulus.

The other classroom behavior investigated was attention behavior during the discussion. Attention refers to concentration on the substance of a discussion. Inattentive behaviors are those which distract a student from concentrating on the ideas exchanged. Only blatant actions were counted as inattentive behaviors: talking to another student, writing notes or papers, sleeping, reading other material, doing assignments for another course, or making unusual facial gestures at other students. Behaviors such as doodling, day dreaming, fiddling with a pencil, or looking bored were not counted as inattentive because they required an overly subjective judgment by the observer. Attention behavior is a residual category that included all actions not counted as inattentive.

A sign system, which counts an event only once regardless of how often it occurs within a specific time period, was used to record the frequency of the classroom behavior variables. They were coded as they occurred by the researcher on a low inference observation instrument.

Whenever a single observer records live data no method exists to assess the accuracy of the observations. However, since the variables were low-inference concepts and were objectively observable, and since measurement of student process variables sheds light on the influence of the independent variables, it was decided to include inspection and attention behaviors as dependent variables.

**Table 1: Analyses of Inspection and Attention Behavior**

Variable	Inspection Lesson 1	Inspection Lesson 2	Attention Lesson 1	Attention Lesson 2
Type of df	1	1	1	1
Example F	4.18	3.52	.46	.20
p	NS(.054)	NS(.075)	NS	NS
Solicitation df	1	1	1	1
Pattern F	18.26	5.48	4.84	7.83
p	.001	.03	.04	.01
Example df	1	1	1	1
By F	2.43	.42	.58	.12
Pattern p	NS	NS	NS	NS
Error df	20	20	20	20
Total df	23	23	23	23

*Commitment to Discussion.* Commitment to classroom discussion refers to the degree to which students are cognitively involved in the substance of a discussion. Unlike the concept of attention behavior, commitment refers to internal mental conditions and not to overt behaviors. It refers to the degree of intellectual involvement of students in the flow of ideas exchanged during a discussion. Such involvement seems necessary for learning to occur.

Commitment was measured on a seven-item successive intervals scale (Edwards, 1957), ranging from low commitment, 1.40 (The discussion was just noise in the back of my mind), to high commitment 10.28 (I prepared an answer in my mind for nearly every question asked during the discussion). The absolute average deviation, a measure of internal consistency, of the twenty-five judges who rated the value of scale items was .04, indicating a highly consistent instrument. A successive intervals scale was selected because it was desirable to measure commitment during the same class period as the discussion occurred, while taking minimal time from the discussion itself.<sup>1</sup>

*Concept Attainment.* Concept identification tasks served as the criterion measure of learning. Items for the test, which were developed for this experiment, were selected from high school and college sociology texts that dealt with the concept (role conflict) to be learned or else were written by the researcher. There was an approximately even number of

positive and negative instances of the concept. Since no text instances had been previously used in the instructional sequence, the dependent measure assessed pupil ability to apply a concept and not pupils' rote recall. Items were constructed so that pupils had not only to classify instances correctly but also had to select the correct critical attributes to justify their classifications. Each item consisted of a detailed case study followed by a question of whether the person involved faced a role conflict situation. Students were given six choices to the question. The first three choices indicated that the person faced a role conflict, but each gave a different reason; the last three choices indicated that the case was not a role conflict situation, and again each gave a different reason. Hence pupils had to learn to recognize instances and to be aware explicitly of the concept's critical features. The Cronback<sup>a</sup> alpha reliability measure for the seventeen item test was .70.

## Results

### **Analyses of Classroom Behaviors**

Data for each classroom behavior, inspection and attention, were analyzed on a two-way ANOVA with solicitation pattern and type of practice example as factors. Since classes varied in absolute number of students, statistical analyses are based on mean proportions for each of the 24 classrooms. The classroom was used as the statistical unit of analysis, and each lesson was analyzed separately to assess stability across occasions. The results of the analyses are reported in Table 1.

**Table 2: Mean Proportion of Pupils Displaying Inadequate Inspection and Inattentive Behaviors By New and Old Examples By Solicitation Pattern for Two Lessons**

Solicitation Pattern	Inadequate Inspection Behavior				Inattentive Behavior			
	Lesson 1		Lesson 2		Lesson 1		Lesson 2	
	New	Old	New	Old	New	Old	New	Old
Unpredictable	2.73	3.79	3.26	11.67	8.38	6.85	5.83	8.56
Predictable	8.66	16.52	13.23	17.30	14.42	19.26	16.67	17.01

Solicitation pattern had a significant main effect on inspection behavior in both lessons (lesson one:  $F = 18.26$ ,  $df = 1, 20$ ,  $p = .001$ ; lesson two:  $F = 5.48$ ,  $df = 1, 20$ ,  $p = .03$ ). Cell means, reported in Table 2, indicate that a larger proportion of students displayed inadequate inspection of stimulus material under a predictable solicitation pattern than under an unpredictable one. Although the relationship was statistically significant across both lessons, the strength of the relationship appears unstable. The proportion of the variance in inspec-

tion behavior, as indicated by eta<sup>2</sup>, explained by solicitation pattern was .41 and .19 for the first and second lesson respectively. The large decrease in the strength of association between the variables suggests that the impact of solicitation pattern fluctuates. It should be noticed that the decrease is largely due to the dramatic increase of inadequate inspection displayed by students in the unpredictable pattern with old

**Table 3: Analyses of Commitment to Discussion and of Concept Attainment**

Source of Variation		Commitment to Discussion	Concept Attainment
Solicitation Pattern	df	1	1
	F	9.97	.012
	p	.005	NS
Type of Example	df	1	1
	F	.45	.15
	p	NS	NS
Pattern by Example	df	1	1
	F	3.25	.15
	p	NS(.086)	NS
Classrooms Within Pattern by Example	df	20	20
Response Mode	df	1	1
	F	2.13	2.51
	p	NS	NS
Mode By Pattern	df	1	1
	F	8.69	2.90
	p	.008	NS(.10)
Mode By Example	df	1	1
	F	.65	.49
	p	NS	NS
Mode by Pattern By Example	df	1	1
	F	.08	.07
	p	NS	NS
Residual	df	20	20
Total	df	47	47

practice examples treatment. For that treatment 3.79% of the students exhibited faulty inspection in the first lesson, but in the second lesson the number jumped to 11.67%. The proportion in the unpredictable pattern with new examples remained low and stable across lessons. Perhaps in the long run the power of an unpredictable solicitation pattern to maintain thorough inspection behavior depends partially upon content.

The findings for attention behavior are reported in Table 1. Solicita-

tion pattern had a significant main effect on both lessons (lesson one:  $F = 4.84$ ,  $df = 1, 20$ ,  $p = .04$ ; lesson two:  $F = 7.83$ ,  $df = 1, 20$ ,  $p = .01$ ). The cell means reported in Table 2 indicate that significantly fewer students displayed inattentive behaviors when teachers used an unpredictable pattern in comparison to a predictable solicitation pattern. The strength of association ( $\eta^2$ ) between solicitation pattern and attention behavior was .19 for the first lesson and .28 for the second. The relationship between these variables appears to be relatively stable and moderately strong across occasions.

A limitation in the study should be noted. For both inspection and attention behaviors the researcher was able to count the frequency of their occurrence in a class but did not attempt to record individual student by name. Consequently, it is impossible to link these variables to other dependent variables or to response mode.

### **Analysis of Commitment to Discussion**

Data for student commitment to discussion were analyzed in a split-plot factorial design (Kirk, 1968) in which solicitation pattern and type of practice example were between-block variables and response mode was a within-block variable. Findings are reported in Table 3.

**Table 4: Mean Commitment to Class Discussion by Response Mode  
By Type of Example by Solicitation Pattern**

Solicitation Pattern	Type of Example	Response Mode	
		Overt	Non-Overt
Unpredictable	New	8.34	8.81
	Old	7.58	7.81
Predictable	New	7.20	6.44
	Old	7.85	6.58

Although the main effect of solicitation pattern was significant ( $F = 9.97$ ,  $df = 1, 20$ ,  $p = .005$ ), that finding is of little interest since there was a significant interaction between solicitation pattern and response mode ( $F = 8.69$ ,  $df = 1, 20$ ,  $p = .008$ ). Inspection of cell means in Table 4 indicates that when teachers used an unpredictable solicitation pattern there was little difference in the level of commitment reported by overt as compared to non-overt responders, but under a predictable solicitation pattern there was a large difference in favor of overt responders over non-overt responders. All other relationships were insignificant, although the interaction between solicitation pattern and type of example approached but failed to reach a statistically significant level ( $F = 3.25$ ,  $df = 1, 20$ ,  $p = .086$ ). In general, this finding suggests that a random solicitation pattern holds the commitment of overt and non-overt

responders alike, and that response mode is a significant factor only when students are aware that a defined and limited number of pupils will be selected to participate publicly in a discussion.

### **Analysis of Concept Attainment**

Mean percentage residual gain scores were computed for concept learning, using the Quick Word Test score as a predictor. Data on concept learning were analyzed on a split-plot factorial design, and results are reported in Table 3 and cell means in Table 5.

Neither solicitation pattern nor type of example nor response mode had a significant effect on concept attainment. However, the interaction between solicitation pattern and response mode approached but failed to reach statistical significance ( $F = 2.9$ ,  $df = 1, 20$ ,  $p = .10$ ). There is no evidence in this study that either type of example, solicitation pattern, or response mode affects concept learning in the short run.

**Table 5: Mean Percentage Residual Gain Scores of Concept Attainment  
By Response Mode By Type of Example By Solicitation Patterns**

Solicitation Pattern	Type of Example	Response Mode	
		Overt	Non-Overt
Unpredictable	New	.11	-.36
	Old	.67	1.50
Predictable	New	3.19	-3.13
	Old	2.20	-1.27

However, when response sequence rather than response mode was used as an independent variable, there was a significant interaction between response sequence and type of practice example on concept learning ( $F = 5.73$ ,  $df = 1, 20$ ,  $p = .02$ ). The cell means reported in Table 6 indicate that primary responders achieved more than secondary responders when new examples were discussed, but secondary responders achieved more than primary responders when old examples were discussed. When engaged in practice tasks that required higher-level thinking, the first student to answer learned more than the student to whom the original question was redirected. Yet, when engaged in practice tasks that required memory level thinking, the student to whom the question was redirected learned more than the original responder. No satisfactory explanation for this finding is immediately apparent.

### **Conclusions**

Given the frequency with which teacher-led discussion is used in social studies instruction, and given the significance of pupil attention for achievement, the effects of solicitation pattern on pupil involvement

with relevant learning tasks is important. Solicitation pattern appears to influence the involvement of students with relevant learning tasks during teacher-led classroom discussions. When involvement is measured overtly, by counting inspection and attention behaviors, an unpredictable pattern maintains pupil involvement to a greater degree

**Table 6: Mean Percentage Residential Gain Scores of Concept Attainment By Response Sequence By Type of Example By Solicitation Pattern**

Solicitation Pattern	Type of Example	Response Primary	Sequence Secondary
Unpredictable	New	2.01	-2.00
	Old	-3.56	3.30
Predictable	New	5.25	2.15
	Old	.27	3.00

than a predictable method of nominating students. The ability of an unpredictable pattern to maintain on-task involvement of students even when old examples were discussed in a lesson attests to its power.

The failure of type of practice example to influence student inspection and attention behaviors is surprising. Since studying new examples provides variety and challenges, one would expect students to inspect new examples more thoroughly than old ones and to pay closer attention to a discussion based on new instances than one based on old ones. Yet these data fail to support that expectation. In general, the results of this experiment suggest that the perceived opportunity to participate overtly in a discussion exerts more influence on student task involvement than does content.

The results of this study clarify the effects of response mode on student attention, and they are suggestive of effects on achievement. In general, this study indicates that an unpredictable solicitation pattern holds the intellectual involvement of overt and non-overt responders alike, and that response mode is a significant factor only when students are aware that a defined and limited number of pupils will have an opportunity to participate overtly.

This finding is particularly important in relation to the well-documented tendency of some teachers to nominate, systematically and predictably, high ability pupils to the near exclusion of low ability students. Teachers who consistently provide inequitable response opportunities, and in effect establish a predictable solution pattern, encourage inattention from the very students who are more in need of intent concentration on the learning environment. Further, as is consistent with Kounin's studies, teachers who use a predictable solicitation pattern may create a climate that increases the frequency of minor discipline problems, which not only distract students but which also distract the teacher's attention and behavior from academic instruction. Social studies teachers who want to maintain the active intellectual in-

vovement of all students during class discussion should use an unpredictable solicitation pattern, taking care to insure equitable response opportunities over time.

Despite the interaction effect of solicitation pattern and response mode on cognitive commitment, there was no corresponding effect on concept learning. The study does, however, provide sufficient grounds to warrant future research about the influence of these variables on learning. The interaction relationship approached statistical significance, and it may be that these variables affect learning in the long run but not in the short. Future studies should consider response mode and solicitation pattern in combination to allow for possible interaction effects.

The interaction effect of response sequence and type of practice example on concept learning is quite puzzling and inexplicable to the researcher. Why should primary responders gain more than secondary responders when a teacher presents new practice examples, but secondary responders gain more when old examples are presented? This finding does suggest a need for further investigation of redirection. Future studies should examine the effects of being the primary as opposed to the secondary responder.

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## **POLITICAL RESTRAINT IN THE SOCIALIZATION OF STUDENT TEACHERS**

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Schools are political as well as educational institutions. Among their political activities is the control of knowledge. This can occur through the selection of what is to be taught, in what context, by whom and for what purposes. The agents for control include curriculum, state laws, boards of education, school administrators and faculty. The processes of control include, among others, the selection and retention of faculty and the preparation of those who will become teachers.

Studies of schools suggest that their responses to political situations are typically conservative, i.e., toward preservation rather than change or even critical examination. There is considerable historic evidence that schools have acted to restrict their staffs in overt and covert ways. Beale (1941) notes the long history of such restraints upon teachers and provides multiple examples of legal, social, political, economic and professional constraints. Others have found strikingly similar instances of censorship and other limitations on academic freedom in American schools (Pierce, 1933; Gellerman, 1938; Robinson, 1962; Nelson and Roberts, 1965; Nelson, 1976; Breasted, 1970).

Studies of restraints in the schools show that topics considered controversial are often viewed as outside the realm of teacher and student business. Naylor (1973) suggests that teachers hold views about nationalism and patriotism apart from those held by the school and are thereby inhibited in the expression of their views. He contends that the public school is not hospitable to open inquiry in these areas and less hospitable than teachers believe it should be. Most researchers, however, find teachers to be nearly as conservative as the schools in which they teach. Schuman (1977) examined social studies teachers' perceptions of the treatment of controversial topics and found that

regardless of self-identified political views teachers tended to choose "centrist" or middle-of-the-road responses to school scenarios depicting controversy. In a review of three National Science Foundation studies into the nature of social education, Shaver, Davis and Helburn (1979) claim that teachers view their role as one which "preserves and perpetuates the values of society." In addition, they find that there is little concern among social studies teachers for teaching controversial issues.

The preparation of individuals for positions as teachers in the schools involves more than the accumulation of discrete course credits and the selection of a major. Teacher education also requires that those who hold positions of authority in public education (university professors of education and public school teachers and administrators) teach the appropriate norms of professional behavior. Given the social purposes of education, the institutional nature of schools, and the political role of teachers, the setting is established for the socialization of teacher education students into teaching roles.

Political socialization may be defined as the process which inculcates political information, practices and attitudes in individuals by selected agents (Greenstein, 1968, p. 55). When it takes place in school settings, it involves not only the transmission of cognitive information (e.g., procedures of government such as the role and function of the Electoral College and the legislative process) but also the development of attitudes and value positions (e.g., "The 'good citizen' votes in all elections for public office"; and, "Democracy and capitalism are more desired than totalitarianism and socialism").

In New Jersey, not unlike other states, the agent charged with the responsibility of political socialization of public school students is the teacher. The teacher of social studies is particularly involved because of the subject matter of that field. In a review of New Jersey statutes which guide the social studies curriculum, Nelson (1977) writes,

Required courses, under state law, include United States history for two years in high school, civics, geography and history of New Jersey in elementary school; alcohol and drug education. The American history course must include instruction on the "high standard of living and other privileges enjoyed by the citizens of the United States..." and other historical events that "tend to instill, into every boy and girl, a determination to preserve these principles and ideals (of American form of representative government)." (NJSA 18:35-2) The New Jersey civics course has the stated objective of "producing the highest type of patriotic citizenship." (NJSA 18A:35-3)

States typically mandate courses and prescribe content on the assumption that schooling and social studies coursework produce "good citizens." There is, however, a lack of research evidence which finds a causal relationship between specific social studies courses and various

measures of political socialization. In a review of these studies, Massialas (1972) writes,

What appears to be more important than the number of courses offered is whether or not controversial issues are discussed in a classroom climate that is conducive to critical inquiry. When students analyze issues objectively and are given the opportunity to generate and defend their own ideas about social events, they perform relatively high on all important political socialization measures. (p. 7)

Hosen (1978), in a limited quasi-experimental study of students in a beginning political science course, found that teacher methods which emphasize consequences and personal choice are positively related to an increase in student political involvement. A stronger case for the presentation of controversial material in social education is made by Goldensohn (1978) in a field-experimental study of civil liberties attitudes. He found that positive attitudes toward civil liberties increased substantially for an experimental group given controversy in the classroom, and he argues that it is the quality and type of classroom climate, not the amount of time spent, that are related to changes in political views of youth. This would suggest that the inclusion of controversy is important in preparing citizens, and would argue against censorship or political restraint in teacher education and in student teaching.

New Jersey, like most states, is willing to specify the content and sequence of courses but is not willing to prescribe process or encourage methodology. The method of instruction is left in the hands of the classroom teacher. Pre-service social studies teachers in New Jersey take the majority of their coursework in history with a smattering of social science courses. In addition, they take three courses in "teacher education" including the Materials and Methods of Social Studies. This course is designed to enable students to apply their academic specialty within the guidelines established by the state. The Methods Course may be considered as part of a process of "anticipatory socialization" toward the role of teacher in which the individual is expected to exhibit appropriate norms of behavior in order to perform in a satisfactory manner.

After three years of academic instruction and some preliminary socialization in university courses, pre-service social studies teachers experience additional role socialization while "student teaching" during their senior year. The students have learned their academic content in a university setting where they were exposed to the norms of the historical profession; they have taken a series of education courses which often encourage process over content; they must then respond to the demands of their cooperating teachers and the organizational norms of the school bureaucracy. Entering the field of teaching may be viewed as a process of assimilation whereby the pre-service teachers transfer their membership from one or more university subcultures to the teacher subculture (Coulter and Taft, 1973, p. 681).

It seems apparent that a certain amount of role conflict is inevitable. The fact that this process takes place within a formal organizational setting exacerbates the problem. Basic to the literature of organizations is the belief that they are never neutral but rather exert a strong influence on the behavior of individuals. Recent studies of public high schools have indicated that these institutions are designed to reward routine and conformity and to make a conscious effort to avoid conflict (Palonsky, 1974; Cusick, Martin, and Palonsky, 1976).

Wilensky (1964) contends that in modern organizations the role conflict in the socialization of "professionals" is inevitable, and he suggests that role orientations appropriate to both the norms of the profession and the norms of the organization eventually merge producing a "mixed role orientation" which must be accommodated by the individual.

Most researchers have not reported this "mixed orientation" and the development of role congruence in new teachers. Kulman and Hoy (1974) found that high school teachers did not develop a dual role orientation but adopted the norms of the organization and abandoned the norms of the "profession" in areas where they were perceived to conflict. The research evidence seems to indicate a gradual internalization of the appropriate behavior norms of the school and the abandonment of the norms of behavior the individual had before entering teaching (Gibson, 1972; Coulter and Taft, 1973; Whiteside, Bernbaum and Noble, 1969). The advantage of effective role socialization for work in a bureaucratic organization is obvious: The greater the internalization of appropriate norms the less need for surveillance and overt control (Moore, 1969).

### **Statement of Problem**

This study investigates perceptions concerning selected factors of political restraint of three successive graduating classes of pre-service teacher education students in the school in which the students had worked as student teachers. The objective of the study is to identify and analyze the specific issues, topics, teaching approaches, and any incidents which were perceived as controversial and/or restricted in school settings.

### **Methodology**

This is an in-depth interview study.

1. An interview schedule to elicit responses showing perceptions of political and professional restraint in school settings was developed and field-tested.
2. The students interviewed were history/social studies education majors at Rutgers College. The sample includes the twenty such students in the class of 1977, fourteen of the sixteen students in the class of 1978, and all twelve of the history/social studies education majors in the class of 1979.

3. Each student was interviewed individually on audio tape by one of the two investigators.

4. The taped interviews were reviewed and response data were transcribed for analysis.

**Table 1: Tabulation of Interview Data**

**General Characteristics of Sample by Sex\***

Major	1977		1978		1979		Total	%
	M	F	M	F	M	F		
History Education	10	7	9	3	6	4	39	85%
Social Studies	1	1	0	2	1	0	5	11
Geography	1	0	0	0	0	0	1	2
Not Sure	0	0	0	0	1	0	1	2
							<u>46</u>	

Number of female students = 17 (37%)

Number of male students = 29 (63%)

**Grade Taught\*\***

	1977		1978		1979		Total	%
	M	F	M	F	M	F		
7-9	4	2	4	1	3	3	17	35%
10-12	8	6	5	4	6	3	32	65

**Subject Taught\*\***

Subject	1977		1978		1979		Total	%
	M	F	M	F	M	F		
History	9	5	6	4	7	3	34	56%
General Social Studies	2	0	1	2	0	1	6	10
Geography	1	1	1	0	0	0	3	5
Psychology	0	0	0	2	0	1	3	5
Civics	1	0	0	0	1	0	2	3
Foreign Policy	0	1	0	0	0	0	1	2
Law	0	0	0	0	1	0	1	2
Latin America	0	0	0	0	0	1	1	2
Mini Course in History/ Social Studies	2	2	4	2	0	0	10	16%

**Perception of Relationship with Cooperating Teacher(s)\*\***

	1977	1978	1979	Total	%
Poor	3	2	2	7	13%
Fair	0	2	2	4	7
Good	6	2	5	13	2
Very Good	8	10	5	23	41
Excellent	6	2	1	9	16
				<u>56</u>	

\*The sample includes all of the history/social studies teacher education students at Rutgers College in 1977 and 1979 and 14 of 16 students in 1978.

\*\*Some students taught more than one subject area and had more than one cooperating teacher.

## **Questions Investigated**

1. Do students perceive political restraint placed upon their teaching in the schools where they worked as student teachers? What is the nature of the restraint? How did the students learn about the restrictions placed on their teaching?
2. Do students who are self-identified as holding political views left-of-center differ in their perceptions of political restraint from those self-identified as right-of-center?
3. Is there a difference between male and female respondents in the perception of political restraint?
4. Do the students recognize a role conflict engendered by disparities between their positions as students in college and teachers in training? How do the students accommodate the conflict?

## **Findings**

### *A. General characteristics of the sample (Table 1)*

The sample is composed of 46 individuals, 29 males and 17 females. The sample includes all of the history education/social studies teacher education students for the graduating classes of 1977 and 1979 and 14 of the 16 students of the class of 1978. All students were undergraduates in Rutgers College at the time of the interview. The majority of the students (56%) conducted all or part of their teaching assignment in classes which taught chronological political history. The majority of students (65%) were placed in grades ten through twelve. The students reported that their relationship with their cooperating teacher was positive: Eighty percent (80%) described this relationship as either "good," "very good," or "excellent."

### *B. Political identification (Table 2)*

The respondents span the political spectrum in a self-identification of their political views. Most students identify themselves as "middle-of-the-road" (35%) and "liberal" (30%). There is some difference between male and female respondents: 21% of the males identify themselves as "left-of-center" while only 5% of the females describe themselves in this way. But there was a great similarity in self-identification as "liberals": 31% of the males and 29% of the females use this label.

The largest percentage of students (42% of males and 43% of females) indicate that they believe their cooperating teacher is politically "conservative" and 29% (27% of males and 30% of females) identify their cooperating teacher as "liberal." There is similar agreement in the identification of the political views of the university supervisor: 80% of the males and 82% of the females identify their university supervisor as holding "liberal" or "left-of-center" political views.

In general, the students regard themselves as holding a more moderate political position than their college supervisor but a more liberal position than their cooperating teacher. The political climate of

the school is considered to be more conservative than the political views of their cooperating teacher: 54% of the respondents indicate that they believe the school is "conservative" and 22% identify the school as "ultra" or "very" conservative.

**Table 2: Perceptions of Political Orientation by Sex**

Self	1977		1978		1979		Total		Percentage		
	M	F	M	F	M	F	M	F	M	F	T
Situational	1	1	0	0	0	0	1	1	3	5	4
Left	2	1	0	0	4	0	6	1	21	5	15
Liberal	4	1	4	1	1	3	9	5	31	29	30
Middle	3	5	3	3	1	1	7	9	24	53	35
Conservative	2	0	2	0	2	0	6	0	21	0	13
Apolitical	0	0	0	1	0	0	0	1	0	5	2
Cooperating Teacher											
Cooperating Teacher	1977		1978		1979		Total		Percentage		
	M	F	M	F	M	F	M	F	M	F	T
Situational	0	0	0	0	0	0	0	0	0	0	0
Left	1	0	0	0	0	0	1	0	3	0	2
Liberal	5	2	3	2	1	3	9	7	27	30	29
Middle	2	2	3	1	0	1	5	4	15	17	16
Conservative	4	7	4	2	6	1	14	10	42	43	43
Apolitical	0	0	0	0	0	0	0	0	0	0	0
Very Conserv.	0	0	2	0	2	1	4	1	12	4	9
Don't Know	0	0	0	1	0	0	0	1	0	4	2
Supervisor											
Supervisor	1977		1978		1979		Total		Percentage		
	M	F	M	F	M	F	M	F	M	F	T
Situational	1	0	0	0	0	0	1	0	3	0	2
Left	3	2	0	0	5	1	8	3	28	18	24
Liberal	6	4	6	4	3	3	15	11	52	65	57
Middle	1	1	2	1	0	0	3	2	10	12	11
Conservative	0	0	0	0	0	0	0	0	0	0	0
Don't Know	1	1	1	0	0	0	2	1	7	6	7
School											
School	1977		1978		1979		Total		Percentage		
	M	F	M	F	M	F	M	F	M	F	T
Apolitical	0	1	0	0	0	0	0	1	0	6	2
Left	0	0	0	0	0	0	0	0	0	0	0
Liberal	2	0	0	1	0	0	2	1	7	6	7
Middle	2	2	2	0	1	0	5	2	17	12	15
Conservative	6	4	2	3	6	4	14	11	48	65	54
Ultra or Very Conservative	2	1	5	1	1	0	8	2	28	12	22

*C. Perception of topics which were excluded or severely limited for class discussion (Table 3)*

Thirty-three (72%) of the students report that they considered some topic(s) excluded or seriously limited for classroom discussion. The

topic cited most frequently was sex (17), followed by religion (11), race (9), and drugs (7). Almost half (42%) of the respondents report that they received a specific warning concerning the treatment or discussion of classroom topics. In most cases, it was the cooperating teacher who advised the student. As one respondent expresses it:

I was teaching about World War I and I felt I should bring the Viet Nam War in. I was told not to present my view of the war or to suggest that it was a bad war...I shouldn't tell them [students] that we make mistakes. (male, liberal, class of 1978)

Another student received a warning about discussing religion in class:

One time, I asked the kids if they believe in God. [The cooperating teacher] said I wasn't allowed to ask that. He had gotten in trouble with parents one time when he discussed that. (female, class of 1977)

**Table 3: Perception of Topics Which Were Excluded or Severely Limited for Classroom Discussion**

Political Self-Identification of Student Teachers	Females																	
	77	78	79	Conservative			Middle			Liberal			Left			Other		
	0	0	0				3	3	3	1	1	1						2
	5	3	1	Middle														
	1	1	3	Liberal			2	1	1	1	1	1						
	1	0	0	Left			1											
	1	1	0	Other			1											
	8	5	4															
Males																		
	2	2	2	Conservative			2	3	1	1	1	1			1			2
	3	3	1	Middle			2	2	1	1	2			1			1	
	4	4	1	Liberal			4	1	2	2							2	
	2	0	4	Left			2	1	1	1	2			1			2	
	1	0	0	Other														
	12	9	8	Total			17	11	9	6	7	3	3	3	1	1	1	13
				1979			6	6	2	4	3	1	1	0	0	0	0	3
				1978			3	1	2	2	1	0	1	1	0	0	1	8
				1977			8	4	5	0	3	2	1	2	1	1	0	2
					Sex			Religion	Race	Politics	Drugs and Drug Use	Abortion	Patriotism	Personal Political Views	Capital Punishment	Civil Rights	None	

Respondents indicate that on a few occasions (4) the building principal acted to limit the content or method of their teaching. One student (female middle-of-the-road, 1978) reports that "simulation games were not permitted in the school." He told her that "there's a chalk and a blackboard—use it." Another student reports the principal's role:

If you wanted to do something out of the ordinary like videotape [your class] the principal would warn you...Every outside book that was brought into the school had to be screened by the prin-

cipal or vice-principal before it could be [used]...I think the faculty didn't mind because they would be protected against parents' complaints. (male, conservative, class of 1978)

Typically, the warnings were couched in language which indicated that free discussion could get teachers in trouble. The student teachers who were warned to avoid certain topics or to limit discussion were told that this would save them possible trouble from parents. Students were regularly warned to protect themselves. One student was warned not to inquire about abortion:

We made a presidential survey and the kids went into the neighborhood to make it and [abortion] was one of the issues I wanted to have on the survey but my cooperating teacher asked me not to put it on. He felt that some of the parents might not want that. (female, class of 1977)

As noted, most students did not receive a specific warning to avoid certain topics or issues. Rather than a specific admonition, they reported that there was an atmosphere in the school which lead them to conclude that certain topics were not to be discussed in their classrooms. One female student, who identified her political views as capitalist/liberal" (class of 1977), claimed that she could discuss her political views only if her cooperating teacher was not in the room. She said,

No one said anything specifically, but you got the feeling that there were some things you should not discuss in class. The teachers never talked about sex or drugs so you got the feeling that they do not talk about it in class and that you should not talk about it in class.

I felt it was okay to talk about it if the students brought it up. I found the students very mature. I never told my cooperating teacher we discussed some of these issues. The students loved it.

Another student who identified his political views as "anarcho-syndicalist" (class of 1977) claimed that he could be open with one of his cooperating teachers but with the other he had to be somewhat devious, explaining that,

He is a World War II veteran who grew up in an Italian working-class home in Newark. I knew where he was coming from and I didn't mess with him...He could summarize socialism in five minutes using the analogy of a cow—who feeds it and who gets the milk. When he wasn't there I gave the students another way of looking at it [socialism].

The same student taught a mini-course on the American Indian and received a specific warning not to discuss Indian mating practices. When he was asked in the interview what these practices involved, he responded that he did not know because his cooperating teacher would

not tell him.

Another student who described herself as "middle-of-the-road" (class of 1977) reports the lack of discussion of controversial issues among the faculty.

The women teachers never discussed politics at all...In the lunch room they talked about TV shows...and school problems. One time they talked about abortion because a teacher in the school had an abortion. I was surprised that a teacher in that school would admit it.

*D. Perception of political restraint and text bias by sex and political self-identification (Tables 4 and 5)*

A higher percentage of male respondents indicate a perception of restraint placed upon their teaching and text bias than the female respondents. Only 24% of the males report that there were no restrictions placed upon their teaching while 35% of the females report no restrictions. Of the males who used a textbook, only 16% report that it contained no bias while 36% of the female respondents who used a textbook indicate that it was bias free.

**Table 4: Perception of Text Bias and Political Self-Identification**

Political Self-Identification	Females			Males			Total
	77	78	79	77	78	79	
0	0	0	0	Conservative			
5	3	1		Middle	4	1	1
1	1	3		Liberal	3	1	1
1	0	0		Left	1		
—	—	—		Other		1	
8	5	4					
2	2	2	2	Conservative	3	1	
3	3	1		Middle	2	2	
4	4	1		Liberal	5	1	
2	0	4		Left	4	1	1
1	0	0		Other	1		
12	9	8		Total	23	8	3
						2	2
						0	0
						1	1
						0	0
						1	1
						1	3
						4	3
						2	4
						0	0
						2	2
						7	10

Political Chauvinism (Nationalism)	Sexism	Non-interpretative History	Treatment of Minorities	Economic Chauvinism	Does Not Know	No Book	None
1979	7	0	1	0	1	1	
1978	4	2	0	1	0	4	3
1977	12	6	2	1	1	0	4

When a comparison is made along the lines of political self-identification, the males are found to report more restrictions and more bias than the female respondents. Of the male respondents self-identified as "liberal" or "left-of-liberal," 27% indicate that there was no restraint placed upon their teaching while 33% of the females using similar self-identification indicate no restraint. Of the males who identify themselves as "conservative" or "middle-of-the-road," 23% indicate no restraint while 44% of the females using similar self-identifications report no restraint placed on their teaching.

Similar findings are obtained in an analysis of reported bias in textbooks: only 15% of the "liberal" and "left-of-liberal" males report no bias while 25% of the "liberal" and "left-of-liberal" females report no bias. Of the male respondents self-identified as "conservative" or "middle-of-the-road," 27% report no bias while 44% of the females using a similar self-identification report no bias.

In all categories of political self-identification, male respondents report more text bias and more restriction placed upon their teaching than is reported by female respondents. However, across political lines, male and female respondents report a similar perception in ranking topics which are limited or restricted for class discussion. There is agreement that there are restrictions placed on class discussions of sex, religion and race. In addition, the respondents, regardless of sex or political self-identification, report that there is a nationalistic bias in the textbooks they used which slants the interpretation of historical events in favor of the United States.

**Table 5: Percentage of Students Reporting No Restrictions Placed Upon Their Teaching by Sex and Political Self-Identification**

All Males	All Females	Liberal/left Males	Liberal/left Females	Conservative Middle Males	Conservative Middle Females
24%	35%	27%	33%	23%	44%

**Percentage of Students Reporting No Text Bias by Sex and Political Self-Identification**

All Males	All Females	Liberal/left Males	Liberal/left Females	Conservative Middle Males	Conservative Middle Females
16%	36%	15%	25%	27%	44%

Students who identify themselves as "conservative" or "middle-of-the-road" are found to be less likely to perceive bias in textbooks and slightly less likely to perceive restraint placed upon their teaching than students who are self-identified as "liberal" or "left-of-liberal." Only 18% of the respondents who identified themselves as "liberal" or "left-of-liberal" report no bias in textbooks while 35% of the students self-identified as "conservative" or "middle-of-the-road" report no text bias. There is a strong similarity in the perceptions of restrictions placed on

teaching across lines of political identification: 29% of the "liberal" and "left-of-liberal" respondents report no restrictions and 32% of the "conservative" and "middle-of-the-road" respondents report no restrictions.

#### *F. Role conflict*

The potential for role conflict was present. The students perceive their university supervisor occupying a political position slightly to the left of them. They see their cooperating teachers as politically to the right of them and the school in which they taught even further to the right. The majority of the students found themselves in classes which limited topics for discussion and teaching with texts most of them considered to be biased.

But, if there was serious role conflict, students did not report it. If there were indeed two distinct sets of expectations represented by the university and the public school, the students did not indicate that this caused them very much concern. Students apparently found no difficulty in accommodating this potential conflict. Some reported that they spoke freely only in those classes they regarded as accepting and in those classes they perceived as closed to the discussion of controversial issues, they could maintain a sense of personal integrity by slipping material into classroom discussions when the cooperating teacher was not present.

Other students indicated that they were beginning to adopt the norms of behavior expected by the institutional teacher role. When one student was asked if he could recall any incidents where topics were excluded or severely limited for classroom discussion, he responded:

I did it myself one time. We were discussing the Constitution and the revolutionary period. One student asked me the difference between communism, socialism, and democracy. I wasn't sure what prompted this question and I wasn't sure whether I should discuss it. So I gave him a quick definition and told the student to see me after class. He didn't show up. (class of 1977)

### **Conclusions and Limitations**

1. There is agreement among the respondents that for those preparing to be social studies teachers there are serious limitations placed on the discussion of certain topics and issues in public high schools. Sex, religion and race are the topics cited most frequently as limited for classroom discussion. The perceptions of limitation and of text bias are very similar for those students self-identified as "liberal" or "left-of-liberal" and for those self-identified as "middle-of-the-road" and "conservative." In this sample, the male respondents are more likely to indicate that there are topics which were limited for classroom discussion and that their textbooks are biased than the female respondents.
2. The exclusion of topics for class discussion is not due, in most instances, to a formal censorship of ideas or issues by either the

cooperating teacher or members of the school bureaucracy. It reflects instead an informal atmosphere of exclusion in the schools which is designed to avoid conflict by placing prior restraints on discussions which may offend and/or provoke students, parents, and teachers.

3. The effects of this atmosphere of informal censorship are pervasive and effective. It appears to be one of the informal goals of the organization and the successful socialization of pre-service teachers requires them to offer minimal compliance of this norm. Most students recognize that there are certain topics which should not be discussed and they acted in ways designated to avoid a confrontation with the school norm.

4. The norms of the school prevailed over the norms of the university (preparation in academics and inquiry processes). While the students did not agree with the limits placed on discussion, they felt at pre-service teachers they are powerless to do anything about it.

There are serious limits to this study. Although the sample includes most of the students of three successive graduating classes from one college, the total is small ( $n=46$ ). One must, of course, be careful about conclusions from small samples. For example, the conclusion that males perceived more restraint placed upon their teaching can only be supported by repeated interviews of future classes or cross studies in other universities. It may be simply for the present that the females ( $n=17$ ) were exposed to fewer incidents of censorship than the male respondents ( $n=29$ ). This study does suggest that informal censorship and political restraint are fundamental elements of secondary schools instruction by pre-service social studies teachers. We believe this conclusion is serious enough to warrant continued investigation.

## Discussion

The preparation of teachers has been subjected to scrutiny in a variety of settings. One of the most widely respected studies of teaching is Waller's *The Sociology of Teaching* (1932), where socialization into teacher roles is characterized as "what teaching does to teachers...by furnishing them those roles which habit ties to the inner frame of personality and use makes one with the self" (Waller, 1932, p. 381). The idea of role is an important concern in examining teacher education because it provides the link between institutions in a society and the actors within them (Nelson and Besag, 1970; Hansen & Gerstl, 1965; Meriton, 1957).

Expectations for roles depend upon tradition and norms of behavior. A teacher is expected by peer teachers, administrators, students, parents, and others to behave in relatively prescribed ways. There is, of course, latitude in the specificity of behavior, but role expectations for teachers set guidelines within which most teachers fall. There are differences between the role of student and that of teacher that become very apparent in observations of expected dress, language use, punctuality, dependability, manner and responsibility. For most college

students preparing to become teachers, for example, there is a dramatic change in appearance and speaking style which takes place between the time they are full-time on the college campus and their field experience in the schools. Those student teachers who don't dress and act as "teachers" are given subtle nudges by the college supervisor, in-school cooperating teacher, or administrator. Sometimes much more direct instruction is provided on how to dress and act during student teaching, and often the student teacher picks up signals from peer student teachers and from field school students who are disturbed if the student teacher doesn't play the role as expected. Thus, the torn jeans and frayed sweat shirt are replaced by more formal attire.

Similarly, anticipation of the role influences perspectives on permissible attitudes and activities in the classroom. This becomes a self-limiting expectation that the student teacher accepts as part of the socialization into teaching. The student teacher perceives that not only is a change in dress and speech expected, but also a change in intellectual framework from a relatively liberal collegiate environment to a relatively conservative school environment.

This study utilized a source of information about teacher socialization that has been rarely tapped. Student teachers themselves, immediately following their field experience in the transition from the role of college student to the role of classroom teacher in social studies, were interviewed to ascertain their perceptions. Indications of considerable socialization into the perceived norms of teaching were found. Self-censorship of topics, assimilation of teacher fears of parents and administrators, and easy accommodation into school climates perceived as more conservative were widely reported. While these might have been expected results, the actual data from student teacher sources have not previously been systematically documented.

More serious is the substance of the findings. In a field that requires critical thinking, free expression of ideas and controversy, and a strong sense of academic freedom, social studies teacher education apparently produces student teachers willing to accept norms which contravene these basic conditions of an enlightened citizenry. A willingness to adapt to political restraint is understandable in a sociological sense and in a sense of personal survival, but it raises significant questions about the norms in social education which create such anti-intellectual role expectations among teacher-candidates. This study is much too limited to permit generalization, but it provides evidence that an examination of the potential disparity between social education rationales of critical thinking and non-critical socialization patterns into teaching social studies is long overdue.

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## **WHY SCHOOLS ABANDON “NEW SOCIAL STUDIES” MATERIALS**

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A review of the literature on the diffusion of educational innovations reveals that the majority of the research in this area focuses upon the adoption phase of the change process. Major variables in such studies include the characteristics of adopters, the attributes of innovations, the nature of institutional settings, perceptions of the innovations, the nature of the adoption decision, and the activities of change agents. Even though research in the educational change area is relatively recent when compared to fields such as agriculture, a great deal has already been learned about the change process in educational institutions.

It is understandable that the final phase of the change process, the abandonment of the once new innovation, has been generally ignored. Given the massive federal intervention in the educational arena it was predictable that researchers would concentrate on trying to explain who was adopting what innovations and how that process might be improved. Curriculum development projects, regional development laboratories, educational change agents, foundations, and state departments of education were concerned with seeing that the new programs were widely adopted (Boyd, 1979). All had a vested interest in documenting that the schools were indeed using the materials and procedures which had required the investment of millions of dollars. Studies of the adoption process were certainly the logical place to begin.

The extent to which the curriculum reform movement of the 1960's and 1970's succeeded is still generating considerable debate. Some viewed progress as painfully slow, others were more encouraged by the same data (Shaver, David & Helburn, 1979; Howe, n.d.; Hahn, Marker, Switzer & Turner, 1977; Switzer, Lowther, Hanna & Kidder, 1974). Even the most optimistic, however, admit that the “new social studies”

never captured a majority of the social studies materials market; and, if the findings of this study are indicative of a national trend, many of the schools that did opt for some of the "new social studies" materials are now in the process of abandoning them. Those who had such high hopes for the social studies reform movement have to wonder why the "retreat" has begun even before the "beachhead" was secure.

Pincus (1974) has described the effects of an educational monopoly upon the schools. Since from the client's point-of-view there is virtually no competition, voucher systems notwithstanding, one wonders why the schools bother to change at all. Daft and Becker (1978) speculated that even uncompetitive institutions such as schools innovate to increase their competitive advantage relative to their own goals, rather than those of their competitors, e.g., schools may want to decrease their drop-out rate or make their curriculum more reflective of current scholarship. Thus while the motivation may be altered by the non-competitive situation, the results are not; i.e., schools change as do other institutions. Schools begin new programs and in the process usually discontinue the use of "old" programs — the cycle of innovation is complete. Seen from this perspective the abandonment of innovations is the price that must be paid in order to make way for the next generation of innovations.

## Hypothesis Development

Regretably there are no models which explain why innovation abandonment occurs. Perhaps as more exploratory studies are conducted a model or models will emerge but in the interim we must rely upon hypotheses which are inferred from the literature dealing with the adoption of educational innovations (e.g., Berman & McLaughlin, 1975; Fullan & Pomfret, 1977; Hanvey, 1979; House, 1974; Rogers & Shoemaker, 1971; Sikorski, Turnbull, Thorn & Bell, 1976; Supurka, 1977; and Switzer, 1977). In addition, there is the extensive exploratory study of abandonment done by Aslin and Dearman (1975).

In reviewing the research dealing with the implications of curricular innovations Fullan and Pomfret (1977) categorize that research into four groups: characteristics of innovations, strategies, characteristics of the adopting unit, and characteristics of macro sociopolitical units. Using a similar system the eight hypotheses of this study are grouped as follows:

### *Characteristics of the Innovation*

The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned.

The more unrealistic the users' expectations of the innovations the more likely the innovation is to be abandoned.

The less visible the pay-off from implementing an innovation, the more likely that innovation is to be abandoned.

### *Strategies*

Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned.

Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation.

Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source.

Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended.

### *Characteristics of the School Culture*

Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use.

The Fullan and Pomfret categories do not constitute a particular change model but instead accommodate research which stems from the testing of a variety of change models. Likewise, the eight hypotheses which structured this study apply to various models. For example, the characteristics of innovations are of particular importance in the Research, Development and Diffusion model; major advocates play key roles in the Social Interaction model, and feelings of ownership and involvement are of particular importance in the Problem Solver model. However, it must be emphasized again that these hypotheses on abandonment were derived from the broad range of literature rather than from studies relating to a particular change model.

### **Procedures**

Instructional materials were selected as the focus for this study because they are one of the major determiners of what goes on in social studies classrooms. Commercially prepared items, especially the textbook, dominate the material used by schools (Boyd, 1979; Shaver, Davis & Helburn, 1979). Students spend more time reading and studying textbooks than any other type of instructional material.

Indiana is one of the states which employs a state textbook adoption system. Each five years the State Textbook Commission adopts a maximum of seven textbooks for each subject, e.g., world history, sociology, government. Schools then select the textbooks they wish to use from among those on the "state adopted list."

The seven schools involved in this study were identified through a State Department of Public Instruction computer listing of the social studies textbooks chosen by schools during 1974. Central Indiana schools listed as having adopted either *Inquiries in Sociology*

(Sociological Resources for the Social Studies, 1972), *The Process of American Government* (Feder, 1971) or *The Shaping of Western Society: An Inquiry Approach* (Fenton and Good, 1969) were contacted during the late fall of 1978. Schools which indicated they intended to discontinue the use of these materials were identified as sites for the actual interviews.

During the winter months of 1978-79 the change literature was reviewed. Eight hypotheses were developed and an interview schedule devised. A Q-sort deck was developed using ten statements which described school climate and change procedures.

Visits to the seven sites were conducted during April and May of 1979. Principals, social studies department heads, and social studies teachers who were either using the materials to be discontinued and/or who had participated in the original adoption decision were interviewed. Interviews typically took one hour. During the interview teachers and department heads completed the Q-sort exercise. In some cases follow-up phone calls were made to obtain additional information about particular interview questions.

### **Profile of Schools Studied**

The seven school sites involved in this study ranged in size from 750 to 2,700 students. One school was located in the heart of a large urban area; two were "typical" suburban schools; two were located in towns in the 15,000 to 40,000 population range; one was a consolidated school located in what until recently had been corn fields; and one was located near a large state university. As few as thirty percent to over ninety percent of their students continued with some form of post secondary education.

The seven schools ran the gamut from highly traditional to innovative. Principals' leadership styles ranged from a tight, top-down control to a nearly collegial relationship. One principal was in his first year but most had been in their positions over five years. Most had no knowledge of the specific discontinuance decisions which served as the focus of this study.

The majority of the department heads and teachers who were interviewed were tenured, held master's degrees, and had taught for eight to ten years. Most seemed quite happy with their jobs and none talked of leaving teaching. Their departments varied in size from six to sixteen members and four had served as pilot sites for one or more of the "new social studies" materials.

While no attempt is made to claim statistical representativeness for this group of seven schools, within the group there does seem to be all but one type of school typical to Indiana. Missing is a small (about 250 students) rural school located in or near a small town of three or four thousand population.

## **Limitations**

Since this study was confined to seven Indiana schools identified in advance by their intention to abandon one or more of three of the "new social studies textbooks no comparisons with a control group were possible. It is not known what situations existed in schools which intended to continue using the "new social studies" materials or in schools which had never adopted such materials. Therefore, it was necessary to compare findings to what was predicted by the hypotheses rather than to what was found to exist in a control group of schools.

While only three specific textbooks were being discontinued by the people in these seven schools, those three books seem to represent fairly the heavy inquiry orientation of the broader group of "new social studies" materials. Thus the discussion has been generalized to refer often to the "new social studies" materials. Other studies will have to test this inference.

It should also be noted that the hypotheses of this study were developed from a literature almost totally focused upon the adoption rather than the abandonment phase of change. Increased attention to the abandonment process should lead to the generation of hypotheses specifically derived from such situations.

It is difficult to predict what unique set of pressures are placed upon the change process by a state textbook adoption system which systematically causes schools to confront the continuation-abandonment decision. To the extent that such pressures are unique it would apply in about 50 percent of the states where such a system exists.

Finally, it should be noted that the innovations studied were of a limited type in that their adoption required the action of only one or two persons and their implementation the cooperation of only a small number of people. The failure to confirm or reject certain of the hypotheses of this study could be due to the limited scope of the innovations involved and may not hold when applied to more comprehensive innovations such as flexible scheduling, voucher systems, etc.

## **Findings**

### **The Characteristics of Innovations: A Review of the Literature**

The first three hypotheses deal with the characteristics of innovations and the perceptions users have of those characteristics. Rogers and Shoemaker (1971) have written extensively about the relationship between innovation characteristics and adoption, and Hahn (1974) and Kissock and Falk (1978) have tested those findings in studies dealing with social studies materials.

Research involving perceptions is complicated by the fact that the

user's perceptions are often not consistent with reality. However, in the case of adoption or abandonment decisions it is the perception rather than the reality which is important. Potential adopters act upon what they perceive to be true.

Misperceptions can lead to disappointment. Adopters, for example, may believe that a set of materials will generate considerable student interest only to learn later that not only do students find them boring but that, in addition, the materials are complicated to use. Such user frustration could logically lead to a decision to abandon the innovation.

"Newness" is an especially relative quality attributed by users to innovations. In distinguishing between innovation and change Daft and Becker (1978) state, "Innovation is the adoption of something new; change is the adoption of something different" (p.4). In a culture where "new" is often equated with "better" the perception that once that same innovation becomes "old" it is a candidate for abandonment. Most Americans will have no difficulty understanding such logic.

Rogers and Shoemaker (1971) referred to an innovation trait which they called "observability," i.e., "...The degree to which the results of an innovation are visible to others" (p. 155). For some innovations the observability of results is simple. The new hybrid corn either out-produces the old or it doesn't. However, the picture in the educational arena is not as apparent.

Educational innovations have at least two types of pay-off; one is directed toward the public and the other at adopters, i.e., teachers and administrators. The observability of pay-offs directed at the public is obscured by the nature of educational goals themselves, which are typically ambiguous and diffuse (Miles, 1964; Brickell, 1961; Sieber, 1968). One function of this ambiguity and diffuseness is to protect the schools from a public that itself is very divided in regard to specific educational goals.

User oriented pay-off tends to differ from that directed at the public. Teachers and administrators may have a quite different set of criteria against which they judge an innovation's success or failure, e.g., the already mentioned concern with student interest in social studies. Brickell (1961) pointed out that instructional innovations are typically evaluated by observing students while they receive the new instruction and, while other measures of success are sometimes used, no other evidence outweighs student reaction as a measure of success. Miles (1964) reported on the small percentage of Title III projects which could produce student achievement data to document their success; the more recent Rand Study (Berman & McLaughlin, 1975) also found that student achievement data were not a major criterion in judging the success of federally sponsored programs involved in their study. In short, users often rely heavily on impressionistic, "invisible" data to indicate how well the innovation is working.

Thus while the absence of specific objectives and hard data concer-

ning the results of pilot trials may make it easier for a particular educational innovation to be adopted initially, it may also undermine the continuation of that same innovation at a later date and contribute to a decision to abandon it.

While the literature is clear concerning the strong relationship between how adopters perceive innovations and how rapidly those innovations diffuse, the relationship between user perceptions of innovations and decisions to abandon those innovations is not clear. The following three hypotheses were designed to begin to clarify that relationship.

*Hypothesis #1.* The more an innovation is perceived by its users as no longer "new" the more likely it is that the innovation will be abandoned. (REJECTED)

Three parts of the interview and two of the Q-sort cards were designed to provide data to test this hypothesis. In addition, teachers and department heads were asked to recall the main reasons for adopting the materials five years ago as well as to indicate the most important criteria used in selecting the materials to replace those being abandoned.

One of the Q-sort statements read:

I guess if I were honest, I would have to describe this school as "fad city." If it's new we seem to have it! While it is hard to put your finger on it, there is pressure to always be trying the latest thing even if at times it is not as good as some of the old things that we know work. Maybe that's the best way to say it, it's not that the latest thing is better than is important around here, but that it is the "latest thing."

Fourteen of the seventeen respondents sorted this statement into the "not descriptive" category and three saw it as "somewhat descriptive." No other of the ten statements in the Q-sort was seen as less descriptive; the closest were two other statements that eight people saw as not describing the situation in their schools or districts.

A second statement related to the hypothesis was:

Given the school board and administrators that we have now I would have to say that the signals are rather clear: that this is not the time to be proposing a lot of new things in this community. I'm not saying that someone with a new idea wouldn't be allowed to try it but the present trend around here is running heavily in favor of keeping things like they are.

Eight respondents saw such a statement as "very descriptive" of their school districts. Four classified it as "somewhat descriptive," and five as "not descriptive." Reactions to the two statements taken together make it quite clear that respondents were feeling no pressure to adopt something just because it was new or to abandon the once new materials because they now had become "old."

Interview findings were consistent with the Q-sort results. When asked why they had adopted the "new social studies" materials five years earlier respondents typically talked in terms of what they thought the materials would do for lagging student interest or how they met a felt need for materials that would lend themselves to involving students in the inquiry process. Some said they saw the materials as a way to get students involved in class discussion in general and to develop thinking skills in particular. One person said he picked the materials "because they looked like they would be interesting to teach." Not one teacher or department head ever implied that it was the fact that the project materials were "new" or "the latest thing" that made them attractive in terms of a positive adoption decision.

One did not get the impression that respondents were minimizing the appeal of the materials' newness; this was reinforced by their response to questions about what they were looking for when they selected the materials they would be using for the next five years, i.e., 1979-1984. Three criteria were prominent. First, the quest for "interesting" materials was still underway. The sought-after appeal that respondents envisioned in 1974 when the materials were selected had not materialized but that criterion remained their single most pressing concern. Readability was the second most often mentioned item when respondents were asked, "What are the two or three most important characteristics you are looking for in the materials you will adopt for next fall [1979]?" Readability and student interest were in fact closely tied since some teachers still felt that their students would find the present materials interesting if they could just understand them.

The third most often mentioned characteristic was that the materials "fit" the teacher's classroom style. One must recall that some of the respondents had inherited the present materials and department heads were especially concerned that whatever was selected for use during the coming five years be structured in such a way that it could be passed along from teacher to teacher as assignments and personnel changed. Most saw the "new social studies" materials as too distinctive to be adaptable to a wide range of teacher abilities and backgrounds. In addition, teachers had their own individual reasons for deciding to abandon what they were currently using. For example, one teacher said, "After teaching this same set of materials to three classes a day for five years, I'm bored stiff; I just can't face another five years with the same text."

The seven school settings involved in this study gave no support for accepting the "newness" hypothesis. Perhaps the back-to-the-basics push has taken some of the edge off a product being the "latest thing around" but, whatever the reason, the notion that materials were being abandoned because they were no longer new was rejected.

*Hypothesis #2.* The more unrealistic the users' expectations of the innovation the more likely the innovation is to be abandoned.  
(ACCEPTED)

The first hypothesis dealt only with one characteristic of the "new social studies" materials, i.e., their "newness." This second hypothesis is broader in that it deals with the issue of the extent to which perceptions match reality.

From the discussion of the first hypothesis it is clear that teachers had high expectations concerning the appeal of the materials to students. They also expected the materials to involve students in the inquiry process and to improve class discussion.

Respondents were also asked a specific question about how complex they thought the materials would be to use. By a two-to-one margin users said they judged that the materials would be more complex than what they were then using, but it was a trade-off all were willing to make if the materials would indeed generate greater student interest in the subject. One respondent even said that it was the complexity of the materials that appealed to him, that he liked the package with various parts as opposed to a single textbook. The potential complexity of the materials did not seem to be a negative factor as far as the teachers in these seven schools were concerned.

Teachers reported that after using the materials their expectations concerning student interest had been wrong and their expectations regarding complexity had been right. In all but one case users reported that the much-sought-after increase in student interest didn't materialize. Sometimes the teachers had simply misjudged, i.e., the teacher who thought that the sociology episode on poverty would generate high interest only to find that students seemed unable to realize what such conditions must be like and thus found the materials distant and abstract. Others felt that the materials would still be interesting "if their students could just understand them."

In two cases the expected increase in student interest did materialize; those teachers abandoned the materials for other reasons. One teacher said that the materials had worked quite well but because the emphasis they required on individual and group activities had exhausted him he could not face five more years of putting that much energy into his teaching. The second teacher said that even though his students found the material interesting he had grown bored with teaching it five periods a day for five years and was changing just to protect his sanity. He said, "I only hope I can find another set of materials that the students like as well as they do these." These teachers were two exceptions; most said that they were disappointed in the level of student interest in the materials. In that regard they had misperceived the interest generating power of the materials; reality fell short of expectations.

The users' perceptions of the complexity of the materials proved to be much more accurate. Almost to a person they had predicted that the materials would be more complex than the traditional text, and experience proved them right. Compared to the traditional text the inquiry text and its related transparencies, cassette tapes, and extra

readings were more difficult to use; teachers said they simply had to work harder at teaching. This was even more true for about fifty percent of the teachers, who had to supplement the inquiry materials with their own lists of definitions, summaries of main points, etc. However, one did not get the impression that the predicted complexity would have been reason enough for abandoning the materials had the expected increase in student interest materialized.

This study tends to confirm the "unrealistic expectations" hypothesis. In retrospect users should not have expected the new inquiry materials to offset a much stronger trend of decreasing student interest in schooling of all kinds. If declining student interests had been the result primarily of lack-luster instructional materials then the materials might have come closer to fulfilling user expectations. As that was not the case users were disappointed, and since student interest was one of their major criteria for selecting the new materials it was normal that when the time came to consider new adoptions the inquiry materials would be abandoned.

*Hypothesis #3.* The less visible the pay-off from implementing an innovation the more likely that innovation is to be abandoned.  
(REJECTED)

During the interviews, teachers were asked both about preadoption evaluation as well as evaluation conducted during and after the use of the innovation. In two cases, materials had been tried on a pilot basis by teachers who were cooperating with the developers of the materials. Neither of these teachers was available to this interviewer since both had moved to other schools. However, teachers who had inherited the materials were unable to recall any specific evaluation data that had been gathered during the pilot test, though they did recall that some data had been collected and "sent off the project headquarters." It should be pointed out that the state textbook adoption system employed in Indiana makes it almost impossible to pilot materials with a limited number of students. Once the list of newly adopted textbooks is released by the State Department of Education, schools usually have only a month or two before school is dismissed for the summer to select new texts and place book orders so that the materials will be available when school reopens in the fall. With such a system it is unlikely, had it not been for the federally funded curriculum development projects, that any of the seven schools would have pilot tested materials prior to the adoption decision.

Users were specifically questioned whether or not it was "easy to see the pay-off when using these new materials?" Department heads were asked to describe any evaluation procedures typically employed when "new" materials were adopted. Respondents generally indicated that they could see the results (pay-off) of using the "new" materials but that it was almost impossible to "prove them" or "show them" to others. For example, many reported increased class discussion or unusual interest in a particular case study or episode but all but two

teachers reported difficulty with the formal testing program. Teachers made comments like, "How do you test thinking skills?" or "This inquiry business is so much harder to test than what we regularly test for." or "I knew the stuff was working but I just couldn't prove it." None of the "new social studies" materials in use in these seven schools came with a test package designed to assess its stated inquiry objectives though the teachers would have welcomed such tests. Instead, the only "hard data" encountered was a pre and post attitude survey used by one teacher. It showed that students liked the new materials better than those that had been in use previously. Otherwise, the evaluations were all impressionistic, a finding that is very consistent with Brickell's (1961) experiences in New York.

Neither teachers nor department heads ever mentioned the lack of pay-off data as a factor in their abandonment decisions. It seemed that even if hard data had been available they would not have been given much weight in the decision to continue or abandon. How teachers felt about the materials and how they thought their students felt about them was obviously the major consideration. Even department heads, whom one might think would be called upon to defend the department's choice of materials, did not see the lack of hard pay-off data as a problem. Instead, they indicated that the most important consideration in selecting materials was the judgment of the teachers who would use them.

On the basis of the seven situations studied the "absence of pay-off" hypothesis is rejected. While it is true that evaluation data were lacking, that fact did not seem to play an important role in the decision to abandon the materials. While users of the "new social studies" materials would welcome visible pay-off they were not called upon to furnish such evidence, either internally or to the public, in order to justify their choices of instructional materials.

*Summary: the characteristics of innovations.* The perception that social studies materials are no longer new seems not to influence the decision to continue or abandon such materials. Likewise, the lack of formal evaluation data documenting pay-off apparently does not contribute to the decision to abandon, though teachers' feelings about how well the materials are working is related. When teachers find that in use the materials fall below their preadoption expectations, the resulting disappointment does seem to be a factor in the decision to abandon the materials.

### **Change Strategies: A Review of the Literature**

The four hypotheses in this section deal with various aspects of how change happens or is made to happen. Change strategies vary from the elaborate and highly explicit to those which simply allow things to happen as a result of the normal course of events. The change literature contains considerable documentation for the notion that the type of change strategy employed is related to how successfully the innovation

is implemented.

*The leadership role.* It is true that committed and determined individuals can cause things to happen. As a result, it is not uncommon for a project or a course to be identified strongly with the person most responsible for it.

Robert Hanvey (1979), in a study commissioned by the Center for Global Perspectives, Inc., found that a large portion of the global education courses and units he identified were virtually the "personal property" of the individuals who had developed them. He concluded that such innovations were so closely identified with a particular person that their continuation depended upon the sustained interest of that person. Aslin and DeArman's (1975) study of 3,271 schools found that reasons related to personnel were those most often given as accounting for the abandonment of innovations (p. 240). "Leadership personnel responsible for the innovation changed" ranked sixth on the list of reasons cited for abandonment of the 33 innovations included in the study (p. 217). When narrowed to a specific classroom innovation such as simulation or gaming the percentage rose to 22.8% and ranked first among the reasons given (p. 189). The same was true for the High School Geography Project materials, where changes in leadership personnel ranked second behind lack of student acceptance as the reason for abandonment (p. 174).

Daft and Becker (1978) refer to such key leaders as "idea champions," persons who take ideas and push them through to adoption (p. 179). In this study such persons are identified as "major advocates" since the innovations they are promoting may more accurately be described as things rather than ideas; their function, however, is the same as that described by Daft and Becker. From the perspective of this study what is important is the relationship between the role of the major advocate and the decision to abandon innovative materials.

*The source of the innovation.* Innovations which are imposed, typically from the top down, are generally thought to have less chance of being implemented than are those which are selected by the people who will use the innovation. During the 1960's it was not uncommon to hear stories about teachers who returned from summer vacation to find that their principal or supervisor had decided to install one of the "new social studies" programs. Such attempts at innovation often ended with incomplete or inappropriate implementation of the innovation (Herlihy, 1974). Such implementation failures were often blamed on the strategy which did not involve users until the later phases of the change process.

Daft and Becker (1978) found other variables to be important in such situations (pp. 120-127). In a study of 13 school districts in the Chicago area they controlled for the type of innovation and found that, in schools for the college bound, "technical" (classroom) innovations were advantaged if they originated with teachers rather than administrators, i.e., that in such settings teachers were the appropriate source of the innova-

tion. However, in schools for the non-college bound they found that classroom-type innovations were not disadvantaged if they originated with administrators. Administrators were the appropriate source for administrative types of innovations in both types of schools, but it is more difficult to implement such innovations in open climate schools. Thus it would appear that "new social studies" materials would have a better chance of being properly implemented if the major advocate was a teacher, at least in schools for students who were college bound. It remains to be seen what relationship, if any, the position of the major advocate has on abandonment decisions.

*The ownership of innovations.* Companies that sell items in kit form, whether they are stereo systems or sleeping bags, claim pride of ownership as one of the advantages that accrue to those who purchase their products. Do-it-yourselfers point with pride to projects that sometimes are of lesser quality than what they could have purchased "ready-made." A popular song extols the virtue of doing it "my way" in a culture that increasingly seems mass-produced. Some companies are assigning a team of workers to assemble a finished product rather than having each individual do a small task as the product moves by on an assembly line, a procedure pioneered by Volvo. Perhaps all of these signs show that the old frontier values of independence and self-sufficiency are deeply imbedded in our culture; but, whatever the source, sense of ownership repeatedly shows up in the change literature as an important variable in the adoption of innovations.

When talking with teachers one is struck by the way teachers personalize some courses but not others. They talk of "my course," "my unit on status in America," "my lecture on the path of a bill through Congress." Yet these same teachers will refer to other things they do as "that course on government," "those tests in the packet that came with the book," or "that unit on juvenile delinquency." While the distinction is subtle it hints at the fact that teachers identify more strongly with some parts of the curriculum than with others.

Sometimes ownership just happens, for example, a new course developed as the result of a college course that the teacher particularly enjoyed. But increasingly, change strategies are designed to "produce" a sense of ownership on the part of the users. One of the ways that this is done is by having teachers develop or adapt instructional materials. The feeling of ownership which results is one of the most common justifications for local curriculum development. The Joint Council on Economic Education's DEEP project (Kim & Kratochvil, 1972) illustrates this principle in operation. DEEP had as one of its original goals the local development of curriculum materials. But, as the project developed the Council shifted its emphasis away from curriculum development toward curriculum revision. Such a change appears to have resulted from two factors. First, the locally developed materials were seldom of a quality that merited national dissemination by the Council. Second, even in those districts where the materials were

developed, dissemination seemed limited to the teachers who had actually developed the materials (pp. 25-30). In other words, teachers tended to use what they had developed.

An extensive study done by the Rand Corporation (Berman & McLaughlin, 1975) of the implementation of programs from four major funding areas concluded that the adaptation of nationally developed programs was a key element in having the programs implemented. Like the Joint Council on Economic Education, Berman and McLaughlin found that the quality of the local adaptations was of less importance than the spin-off of learning by doing (pp. 18-20). The more the innovation became "theirs" the more likely it was to be fully implemented.

In the Anthropology Case Materials Project an attempt was made to capitalize upon the positive effects of the local adaptation of curriculum materials (Hanvey, 1979). Partly completed packets of anthropology teaching materials were designed in such a way that groups of teachers could then assemble them to suit their local and personal needs. The former Director of the Project, Robert Hanvey, reported in a telephone interview (April 12, 1979) that while no attempt was made to measure such feelings he was unable to detect any increased sense of ownership among those teachers who piloted those materials. He did indicate that when he talked with teachers during the project, the desire for a fully completed instructional package rather than one they had to complete on site. Thus, while the relationship between adoption and a feeling of ownership is clouded, even less is known in terms of ownership and abandonment.

*Inappropriate implementation.* Interpreting three reports on the status of pre-college social studies education conducted for the National Science Foundation, Shaver, Davis and Helburn (1979) noted that the slow diffusion of the "new social studies" materials may in part be due to the wide gap between the priorities of the developers and those of classroom teachers. They speculated that the materials, with their emphasis on content, reasoning, and inquiry, threatened a central classroom expectation that students would be quiet and would work on the same assignment. Assuming that some teachers discovered this difference between their expectations and those of the materials' developers only after they had begun using the materials, it seems likely that teachers would employ them a manner that minimized the problems caused by the nature of the materials. The local adaptation of materials is one such means of making the materials fit their own expectations and needs, but in the process the innovation may be applied in a manner never intended by the developer. The resulting disappointment on the part of the user may well lead to abandonment of the innovation.

*Hypothesis #4.* Innovations are often adopted due to the efforts of a major advocate. When that person no longer promotes the innovation, the innovation is likely to be abandoned. (ACCEPTED)

In the seven schools involved in this study, loss of the major advocate

was a primary factor in four of the abandonment decisions. In all four cases the teachers abandoning the materials were not involved in their selection. These second generation teachers said things like, "I'm sure that if Mr. Jones were here we would adopt these materials again. He could really make them work but somehow they just don't fit me." or "Ms. Smith was one of the original pilot teachers for these materials. She went to a summer institute to learn how they were being developed and she really understood how all the pieces in that package fit together. If she were still here, I'm almost sure that we would be adopting them again." Teachers, when referring to the teacher who had chosen the materials then being abandoned, spoke of them as "his" or "her" materials. It was clear that the teachers abandoning the materials felt little or no sense of ownership of them; the selection of the materials had not been their choice and they felt no obligation to continue using them.

The Q-sort relating to change confirmed the importance of the major advocate's role. Sixteen of the seventeen respondents categorized the following statement as either "very descriptive" or "somewhat descriptive" of the situation in their schools. No other of the ten statements in the Q-sort elicited as much agreement:

Most of the new things around here come as the result of the interest and energy of a particular person. In other words, someone decides to champion the new thing and because of his or her efforts the thing goes. But, if they are reassigned or leave then it isn't long until the program is discontinued.

It would be difficult to overstate the importance of the major advocate's role in abandonment decisions, based on the seven situations involved in this study. Lose the major advocate and you lose the person in a position to make the case for continuing the use of the materials, the one who agrees with the philosophy of the materials. However, the continued presence of the major advocate does not insure continuation of the innovation. In three instances major advocates were themselves making the decision to discontinue the use of a set of materials they had championed five years earlier. But the fact remains that in *every* situation where the major advocate had left, a decision to abandon had been made. Based upon the limited scope of this study the hypothesis is accepted. Whenever an adoption decision is influenced by a major advocate, that person's later departure greatly increases the likelihood that the innovation will be discontinued.

*Hypothesis #5.* Users who feel a sense of ownership of an innovation will be reluctant to abandon that innovation. (REJECTED)

Adaptations made in the "new social studies" materials being abandoned in the schools included in this study may shed some light on why the Anthropology CASE Materials Project did not achieve the expected results. Without exception, the teachers interviewed had adapted the project materials to their own needs and interests. Such

adaptations were of minor nature: the insertion of a lecture or two, the use of a film that the teachers especially liked, the continuation of a community survey that had always gone well for the teacher, or the provision of students with dittoed lists of definitions of key terms. On the really tough problems the teachers reported they had to contend with, such as declining reading ability or general lack of student interest, the teachers had not been able to adapt the materials. This was even more true for the teachers who had inherited the materials and who found that they didn't fit their own teaching styles. In those cases it was the teacher who adapted to the requirements of the materials despite the fact that he/she felt unprepared for and uncomfortable with materials that were heavily inquiry oriented.

Only in the school with its own Title III Project did one get any sense of what could be called a pride of ownership. When the locally developed units were described to this interviewer it was with an enthusiasm and pride not found in any other school. One had the distinct feeling that those materials would be in use, at least by the two developers, long after the project funds ceased.

Only one teacher reported that had the materials been "easier to adapt" he might have considered continuing his use of them. The problem of adaptability was not a major factor in the decision to abandon the materials. However, what adaptation had occurred had not resulted in any sense of ownership of the materials. The respondents were not being forced to discontinue the use of something that was "theirs," something with which they identified strongly. All were discontinuing use of the "new social studies" materials willingly, though in one or two cases, wistfully.

Based on the findings of this study, one cannot accept the hypothesis. Certainly a sense of ownership was not a powerful force for or against abandonment. Without a control group of schools continuing the use of the same type of materials, it is impossible to establish whether a sense of ownership would have been a strong positive force in those situations. When teachers who had inherited the materials described the teachers who had originally selected them, they often did so in a way that would indicate the originators, who were not interviewed, did have a special interest in the materials. The former pilot teachers were usually described as having a "special commitment" to the materials but the interview trail was by that time too faint to serve as the basis for any convincing statements regarding a sense of ownership. Rather, as indicated in the previous section, those original teachers could perhaps be more accurately described as "major advocates" of the materials.

*Hypothesis #6. Innovations originating from an inappropriate source are more likely to be abandoned than those originating from an appropriate source. (REJECTED)*

Fourteen of the seventeen respondents said that the following statement was either "very descriptive" (6) or "somewhat descriptive" (8):

You really can't say that most new things originate with either administrators or teachers in this school. It seems to depend on the nature of the new idea. Most classroom type innovations originate with teachers and I would say that most administrative type innovations originate with administrators. It doesn't make much difference where the new ideas originate because people are always supportive and helpful when it comes to trying out new things.

In the case of innovative classroom materials administrators were never mentioned when respondents were asked how they first learned of the materials which were now being discontinued. In two cases the "new social studies" textbooks were unknown until the set of state adopted books arrived. In one instance the former pilot teacher was the source of information about the materials but respondents were not sure how the pilot teacher first learned of them. In another case the department head learned of the materials at a summer workshop and later arranged for one of his teachers to become a pilot teacher. Another teacher said he first learned of the materials from a regional dissemination center which had been set up as part of the state's innovative programs office, and another learned of the materials from a social studies field agent who had been trained in a special federally-sponsored program. Finally, one person reported that his first contact was through a description in the monthly journal of the National Council for the Social Studies. In short, the idea for the materials which were being abandoned in 1979 originally came from a variety of sources and in no case had they been pushed onto reluctant teachers by an aggressive principal or supervisor.

Had this study focused upon the abandonment of larger and more comprehensive programs such as school-wide team teaching or career education programs it might have provided a better test of the "inappropriate source" hypothesis. On the basis of the Q-sort statement one can assume that some innovations originate with administrators but that is probably much less the case for innovations designed for use by individual teachers. At the classroom level teachers have the power to make a wide range of decisions as long as they do not violate local norms. Since in every case in this study the source of the innovation could not be considered inappropriate the hypothesis is rejected.

*Hypothesis #7.* Innovations employed in a manner different from that intended by their developers are more likely to be abandoned than those which are implemented as their designers intended. (ACCEPTED)

Once a set of materials has been adopted by a school in Indiana, teachers are generally resigned to using them until the next adoption five years later. In an attempt to "make them work" the materials are sometimes inappropriately employed and there is evidence that this had occurred in some of the schools in this study. For example, nine of the twelve teachers abandoning the new materials indicated that the materials caused them to make significant changes in their classroom

behavior. Only one of the teachers had received special training in using the materials. Most others reported that they had difficulty making the inquiry phase of the materials work. They found themselves leaving out data presented in the form of graphs and charts because students could not understand it; they often had to explain the meaning of case studies because students missed the point or could not read the material. Some teachers made ditto sheets with the definitions of key terms and almost all reported difficulty in constructing tests that measured thinking skills, which forced them to grade primarily on factual recall. While such attempts to modify the materials may not be accurately described as misimplementation they did result in the use of materials in a way un-anticipated by their developers. That such adaptations did not work is reflected by a common reason given for abandoning the “new social studies” materials, that they “didn’t fit my teaching style” or “they just didn’t work as expected with our students, I could never get them interested in the materials.”

It is important to note that all the teachers interviewed appeared to have made a concerted effort to make the materials work; they had done their best to do “inquiry teaching.” Teachers were asked, “Overall, when you take into account the goals you had when you began using these materials, about what percentage of those goals would you say were achieved?” Answers ranged from less than fifty percent to eighty percent, with sixty percent the most typical response. That substantial level of disappointment is not fully explained by the “misimplementation” hypothesis. Teachers had made some modifications in the use of the materials but there were no major deviations from how the developers had intended them to be used.

*Summary: change strategies.* Major advocates are key persons in abandonment decisions. The withdrawal of their support is a strong indicator that abandonment is not far off. To a lesser extent the misapplication of the innovation also contributes to the likelihood that it will be abandoned as users are both frustrated in the process and disappointed with the results. Users who were abandoning “new social studies” materials had no strong sense of “ownership” of those materials, perhaps because while they had made adaptations of the materials those changes had been minor. Finally, no support was found for the notion that these materials were being abandoned because they had originated with an inappropriate source, e.g., a supervisor or administrator.

## **Characteristics of the School Culture: A Review of the Literature**

There is strong support in the change literature for the notion that change is slowed because there are few incentives for change in the culture of the school. Pincus (1974) has attributed this to the schools’ virtual monopoly in providing educational services to the community. Since schools are guaranteed a steady flow of students regardless of the quality of the service they offer, the typical incentives of the market

place do not operate. Sieber (1968) has cited the vulnerability of schools to public pressure and the quasi-professional status of teachers as other factors impeding change in education. Both Hanvey (1979) and Sieber (1968) have referred to the weak system of sanctions and rewards based upon a pay system geared to seniority rather than merit. Boyd (1979) summed it up nicely when he stated, "The public schools scarcely provide a climate conducive to risk taking, experimentation and responsiveness to consumers. Indeed, it is remarkable that many public schools perform as well as they do, considering their basic reward structure" (p. 17).

Despite the limitations just referred to the literature for school administrators and change agents recommends that use be made of whatever rewards and incentives are available (Baldridge & Deal, 1975; Becker & Hahn, 1975; Havelock, 1973). Brickell's (1961) findings in New York are typical of what one finds as support for such recommendations, "The attention, encouragement and recognition given to teachers by people outside the classroom during the introduction of new programs are among the strongest causes of their success" (p. 35).

*Hypothesis #8.* Innovations are abandoned because there are too few incentives in the culture of the school to sustain their continued use. (REJECTED)

Two of the items in the Q-sort deck were concerned with incentives. In addition, those interviewed were asked a series of questions having to do generally with the levels of risk and involvement in the school. One Q-sort card read:

It's really tough to get new things started around here. It's not that the superintendent and school board are opposed to new ideas, it's just that they don't much seem to care. People who want to try new things are pretty much on their own. Maybe it is because people seem rather satisfied with things as they are now. I only know that the extra work involved in trying something new doesn't seem to get a person many points where it counts.

Seven respondents saw this statement as "very descriptive," three as "somewhat descriptive, and seven classified it as "not descriptive." Another of the Q-sort deck dealing with other aspects of the reward system read:

It's clear to everyone around here, from the school board and superintendent right through to the teachers, that this is expected to be an innovative school system. People who try new things are recognized and rewarded and they get whatever support is needed to make new things work. Some of the new things work and some don't but that is to be expected. It's no big deal if something new doesn't work out. When we have problems we sit down and try to figure out what to do. On the whole I would say that teachers are very involved in helping this school stay one of the best around.

Three of the respondents saw this statement as "very descriptive," six classified it as "somewhat descriptive" and eight felt it was "not descriptive." Interview questions broke down some of the segments of the more complex Q-sort statements. For example, respondents were asked what types of incentives for trying new courses of study existed in the school. Most department heads identified one or two, usually a public "pat on the back" or an incentive involving some form of travel, either to another school to see something new or to professional meetings. To a person, the department heads believed that teachers would get support for changes they wanted to make in the curriculum if they were to ask for it. However, when teachers were asked about the types of incentives available almost all responded, "none." One teacher did say that he was allowed to design new courses which allowed him to develop curriculum materials that were later commercially published, and another said that he supposed that getting mentioned in the school district's newsletter was a form of incentive. Most teachers agreed with their department heads that they could probably visit other schools to see new things in operation, but none of them had. In fact, most teachers were somewhat puzzled by all the interest in incentives; none had thought much about it and none appeared to resent the lack of explicit incentives. Incentives for change had not played a role in their decisions to use the "new social studies" materials which they were now abandoning.

When asked if they felt it was risky for people to try new things in their schools none of the respondents said "yes," though two qualified their answers by saying that it was risky unless one followed the proper channels. Most felt that as long as it pertained to only that teacher's classroom that there was no risk. In three of the seven schools respondents did feel that there was a risk in "other departments" but not in social studies. In only one case was a respondent able to relate an example of how innovators were "held accountable for a new idea." That department head said, "You do just about what you want around here but if your idea backfires, you had better be ready to take the blame because the principal isn't going to come to your rescue."

On the basis of this study, the "incentives" hypothesis was rejected. While it is true that many traditional incentives are not appropriate in the culture of the school, those which are appropriate are apparently not powerful when it comes to decisions involving instructional materials. This may be because the students rather than administrators and other teachers control one of the most powerful incentives. Teachers really care about their students and want them to be interested in what is being taught. The pursuit of student interest in their subject may be a clue to which incentive the teachers feel is most important.

## **Summary**

The abandonment of innovations is a normal part of the cycle of change. Today's innovations often displace the "new" innovation of a

few years earlier. While it is understandable that most of our research efforts have focused upon the diffusion and adoption process a growing concern over the rapid turn-over of educational innovations has resulted in more attention being given to the abandonment phase of the change cycle.

In this study, eight hypotheses were tested via a series of in-depth interviews and a Q-sort exercise conducted with principals, department heads, and social studies teachers in seven Indiana schools which had indicated their plans to abandon one or more sets of the "new social studies" materials. Results were organized by hypotheses rather than by school. No claim was made that the sample of seven schools was representative of the larger population composed of all Indiana schools.

Within the limitations of the scope of this study, it is obvious that even decisions concerning the abandonment of commercially published instructional materials are more complex than it might initially appear. Hypotheses inferentially developed from the literature of innovation adoption do not always prove valid when applied to abandonment decisions. The loss of an innovation's major advocate, unrealistic expectations on the part of users regarding how an innovation will perform, and problems resulting from the misapplication of the innovation were the primary contributors to the decisions to abandon the "new social studies" materials in these seven schools.

No support was found for relationships between decisions to abandon the "new social studies" materials and a perception that those materials were no longer "new" or lacked visible pay-off. Abandonment was also not the result of the innovations having originated from inappropriate sources or from there being too few incentives for continuation in the school culture. Given the fact that the adoption literature contains strong support for such relationships, it is possible that the type of innovation involved becomes an important variable.

It should be noted that decisions to abandon an innovation are just as rational as decisions to adopt and, in fact, the two are often interwoven in a single decision. A decision to abandon an innovation does not necessarily mean that the original decision to adopt that same innovation was unwise. One factor which was not accounted for by the hypotheses of this study but which proved important was the changing context in which the innovation was employed. Teachers, student bodies, administrators, and the society in general change over time. What was a logical adoption five years ago may be just as logical an abandonment in today's situation, e.g., declining reading abilities, declining enrollments, increasing class sizes. Such situational changes appear to be an important variable in decisions to abandon some of the "new social studies" materials.

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# **REASONING AS A METAPHOR FOR SKILL DEVELOPMENT IN THE SOCIAL STUDIES CURRICULUM**

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## **Introduction**

Since the recent back-to-basics movement in education, there has been a great deal of interest in and concern about skill development in general, and social studies educators have been particularly preoccupied with the relationship of their instructional programs to student competencies in basic skill areas.<sup>1</sup> While these efforts are extremely important, there is a serious concern that many teachers and curriculum developers share, and that is the omission of any sense of *coordination* of skills towards a common objective. To be sure, topics such as "problem solving" and "decision-making" seem to point to a common objective, but little systematic attention is given to the relationship of "decision-making," for example, to other "basic" objectives such as reading and writing—to say nothing of relationships to "complex" objectives such as hypothesis formation and testing. Skills are, for the most part, taught in isolation which often results in program fragmentation and inefficient use of teacher/learner time.<sup>2</sup>

<sup>1</sup>This emphasis upon skill development is seen, for example, in many recent publications dealing with reading in the content area. There are also specific works such as *Developing Decision-Making Skills*, 47th Yearbook of the National Council of Social Studies, 1977, Dana Kurfman, ed.; and *Skills In Citizen Action*, F. Newmann, T. Bertocci and R. Landsness, Citizen Participation Project, School of Education, University of Wisconsin-Madison, 1977 which show this concern for skills.

<sup>2</sup>In informal comparisons of selected performers' scores on reading comprehension tests, where scores on specific inferential comprehension objectives were low, with performance on non-print cognitive development tasks requiring cognitive skills which many would presume to underly performance on linguistically-oriented counterparts, results suggest that many readers haven't the reasoning ability to perform cognitive tasks to begin with. Reading tests then tell us nothing (with any diagnostic precision) about these performers.

Our purpose here is to explore one way of bringing skills together and pointing them toward a common goal, the goal of reasoning. A rationale for reasoning will be developed, followed by a theoretical model that attempts to lessen the fragmentation of skills instruction. Finally, through an example of one skill, we will investigate the interrelatedness of said skill to student reasoning ability.

It is interesting to note the number of objectives, in all subject areas, that state some attribute of reasoning without attention to any more or less complete curriculum strategy to attain this objective. Even a cursory examination of curriculum materials in areas such as reading, social studies, mathematics, science or language arts suggests a number of objectives which call upon the learner to "compare and contrast," "determine cause-effect relationships," "detect or perceive specious logic or reasoning," "infer a reasonable conclusion," or "develop a generalization based upon examination of given data." We could go on for some time delineating curriculum objectives which are common in their use of "reasoning rhetoric." It may be the case, moreover, that reasoning is not only non-specific relative to a given subject, but in some cases, it is not even specific to language or culture. Further, if we look at course outlines and subject matter curriculum guides and materials, it also appears that while the quantities and qualities of discourse modes vary in different disciplines, the kinds of skills required to function adequately in all areas seem to be *common* in that they address reasoning abilities. In spite of this, specific attention to instruction in a comprehensive and coordinated set of skills which leads to reasoning is tangential at best to the social studies curriculum area. It is, in fact, an irony of the strangest sort which has excluded from serious direct instructional intention what is perhaps the most fundamental concern of education, the development of reasoning abilities.

## **Reasoning Abilities**

Reasoning abilities are not "merely" a function of intellectual development. To be sure, the child learns to classify, to abstract, to perform the mental tasks required of things such as Piaget's binary operations sets through the stage of formal operations. He or she will to some degree grow into "an ability to conceptualize, to generalize, to hypothesize." Of equal importance here, however, is the notion (Lockhead and Clement, 1979) that those reasoning abilities which do develop as a general function of cognitive maturing are not refined without conscious instruction. The subtlety, nuance, and sharpness of reasoning do not just happen. It appears unlikely, for instance, that learners will develop the ability to detect fallacious conclusions in a deductive mode given reasonable premises (Ennis and Paulus, 1965). It could be argued that the ability to discern and use varying senses of "because" (Klein, 1973) is not present in many adults and older students, yet would appear a crucial skill for effective reasoning in either a formal or informal situation. For example, "because" can be

used to establish a cause/effect relationship, to show a justification for knowing, or as a tautology. As causal usage we might say that "John failed the exam *because* he didn't study"; as a justification for knowing that "Alice is not in school *because* we saw her downtown"; and, as a tautology (definition), that "She is a doctor *because* she has an MD degree." All uses of "because" become extremely important in coping with human discourse.

Learners in neither concrete operations nor the state of formal reasoning are able to distinguish between necessary and sufficient conditional (Shapiro and O'Brien, 1970). Also, a majority of high school twelfth graders do not perceive the restrictions of antecedent-consequent relationships in causal assertions (Klein, 1973), while reasoning in the deductive modes continues to plague learners right through adulthood (Ennis and Paulus, 1965; see also Roberge, 1970). Thus, a conscious and formal commitment to the teaching of reasoning is crucial. Yet, this is not attended to in a serious and systematic fashion in either commercially prepared materials or in locally developed curricula. A review of currently available materials reveals a nearly complete lack of attention to the structured development of reasoning. Activities in classification, to be sure, are to be found, but they are scattered throughout many early reading programs and in some science materials. Seriation or ordering skills are addressed in some social studies programs and in selected composition materials. Spatial relationships are introduced in some math programs. Attention is given to inductive and deductive processes in only varying degrees in most subject areas.

## Reasoning

Reasoning must always be seen within a particular time frame. "Reasoning" in the tenth century was certainly different from "reasoning" during the Enlightenment. Different times have their unique thought paradigms and we should note at the beginning that our paradigms for thinking are time-bound. That is, we use symbolic (modern) logic and the conceptual framework of inductive, deductive, and analogical structures knowing full well that they are only analytical devices we use to build curriculum and have little to do with how we think. In a very broad sense, and as the term is used here, all reasoning may be thought of as trying to reach a conclusion about some event, action, object, idea or, more often, series of same which appears important enough to warrant our attention. More often than not, the utilization of reasoning or those mental operations which necessarily lead to some sort of conclusion takes place unconsciously. The young child who finally concludes that touching a hot burner on the stove will result in pain or that striking a suspended mobile will cause it to move is using reasoning skills which in the course of time become internalizations and cause the individual to alter or adopt certain behaviors.

For adults, the processes of reasoning are *normally* of two sorts, inductive or deductive.<sup>3</sup> In both cases, a conclusion is drawn from the evidence of previously stated or observed data. The one basic difference between the two forms of reasoning is that in inductive reasoning, the extrapolation or “inductive leap” is made. If X + Y appear together 100 times and Z results, it may be safe to say that X + Y when appearing together in this order will lead to Z. However, it is always a *probability* inference with some chance, no matter how infinitesimal, that some other result will occur. We are all willing to infer that the people we meet on the street will be wearing clothing and feel comfortable with that conclusion in spite of the fact that we might stumble across someone who is naked.

Thus, while in an inductive argument the conclusion is at most only logically probable, in deductive reasoning the conclusion is a *necessary* one if the observations are all true or accurate and if one had utilized a proper deductive form. If I say, “if the sun shines we will have a picnic,” and, in fact, the sun does shine, then one may infer that we will have a picnic and know that such is a certainty unless I lied. In other words, in deductive arguments, true observations necessarily entail a particular conclusion.

In order to be an effective thinker, one should be aware of the nature and structure of both inductive and deductive conclusions as these conclusions work to reinforce each other. The more effective thinker consciously utilizes both in everyday actions, personal discourse and in every appropriate context. But, the ability to think effectively or to use reasoning processes presupposes fundamental cognitive skills. Skills in observation, classification, seriation, and spatial relationships, for example, are involved in all deductive and inductive arguments. These skills do not just evolve naturally over the years in all children. They must be taught. And along with other “skills,” they must be taught in some relationship, one to the other.

## Reasoning as Metaphor and Curriculum Design

It would seem that if the social studies curriculum could address skills in a direct and coordinated way, it would make a significant contribution to the objective of reasoning. Because of the nature of human thought and reasoning, we might, first of all, consider reasoning as a metaphor toward which we can direct attention. Reasoning is like the notion of quality or life or love in that we can approach it through analogy. That is, we can speak to some attributes of the main concept

<sup>3</sup>Very young children, according to developmental psychologists such as Piaget, reason neither inductively nor deductively, but rather “transductively.” That is, they reason by association. The mere presence of one thing or event is enough to presume a cause of another. “Clouds pushed the sun across the sky” or “the wind makes the clouds” are cases in point.

but certainly not to all attributes. "Reasoning" like "quality" is too pervasive to hold to a single definition (that is without destroying the concept) and this situation presents us with an interesting curriculum challenge: how can we organize and teach something that is so pervasive and begs definition?

One answer to this problem may be to organize those skills which we can delineate in such a way so as to teach *toward* reasoning. For example, when we discuss the statement "your life is like a river," we are using the "river" to move toward, to understand and deal with "life." Allegorically, "reasoning" is to life as the river is to the "skills" that we can list and work with in curriculum building. Another way to picture this situation would be to think of a particular organization of skills as being more powerful than another organization of skills in its ability to develop reasoning abilities. It is this more powerful arrangement that we are after. The conceptual design of this arrangement of skills rests upon the assumption that reasoning ability is a function of our competency in working with *skill combinations*. This, perhaps, seems like a truism, but the point of extension in this discussion is to suggest a systematic ordering of skills for a more manageable teaching/learning situation. The classification of skills into labeled categories is somewhat arbitrary, but this placement is based upon the notion that some skills by their very nature are more inclusive of other skills. This simply means, for example, that the ability to "infer" carries with it the ability to "classify." The rationale for a particular arrangement of skills is based upon this factor of inclusiveness. It is, in essence, a classification scheme from simple to more complex mental operations. The so-called "higher" order operations *depend* upon the "lower" skills for support and integrity. Those which are designated as "higher order" require more systematic relationships with other skills. Reasoning, of course, is placed highest of all as it is seen here as most inclusive.

## A Skill Network

The phrase "skill network" is used here to denote a special design or organization of skills that can help us move toward the objective of reasoning. There are three major levels of skills that function as a taxonomy in this design. The lowest level is labeled *facilitating skills*<sup>4</sup> and includes the skills of observation, classification, seriation, and

<sup>4</sup>FACILITATING SKILLS - Facilitating skills are those operations that are necessary in performing any social studies processes or mastery of the basic skill areas. Observation, classification, seriation, and spatial relationships are fundamental to inferring or predicting or any other of the social studies processes. But facilitating skills also provide the foundation for basic skill development. That is, reading cannot take place, for example, unless the student can perform the operations of observation, classification, seriation, and spatial relationships.

a) OBSERVATION - Observations can be made in a variety of ways using all of the senses. Where direct sense experience is not adequate for making needed observations, indirect methods are used. Objects and events may be observed with respect to many

spatial relationships. The second level is called *processes*<sup>5</sup> and includes inferring, predicting, measuring, formulating definitions, formulating questions and hypotheses, testing hypotheses, and formulating models. The third level is labeled *operations*<sup>6</sup> and includes search, group participation, communication, quantitative/interpretive skills, and social judgment. Together, the three levels move us toward reasoning.

The specific skills within each level (for example, the skill of classification within the category of facilitating skills) should be seen as related to reasoning in a direct way. The argument is made, throughout, that the specific is always seen in terms of the whole.

The notion of “the specific in terms of the whole” will be developed below when we take a more careful look at one facilitating skill, classification. Classification is fundamental and, in most advanced forms of thinking, it is crucial. Ideally, training in various aspects of classification will enhance the development of reasoning skills. For example, we use classification skills as we decide how to handle a certain

qualities and quantities. When observations are made in order to accumulate data from which inferences will be drawn, the precision of the observations is critical. Observations are influenced by the experience of the observer.

Social observation can take many forms - from viewing a national political convention on television to watching two children behaving on the playground. Observation can be very directive, as when looking for specific events (factual or procedural); or it can be very nondirective, as when viewing an event and giving an opinion.

- b) CLASSIFICATION - Classifying is the grouping of phenomena according to an established scheme. Objects and events may be classified on the basis of observations. Classificational schemes are based on observable similarities and differences in properties which are arbitrarily selected. Classificational keys are used to place items within a scheme as well as to retrieve information from a scheme.  
Social classification is manifest in discussing the division of work in the house, or the makeup of a national political party. Classification is useful in that it helps limit or control the data being investigated.
- c) SERIATION - Seriation deals with the ability to place items in order. Items, events, or phenomena can be ordered according to time, size, quantity, quality, levels of abstraction, etc.
- d) SPATIAL RELATIONSHIPS - Spatial relationships deal with the way in which one item is spatially located relative to another item. Spatial relationships address concepts of location, mass, width and length, as well as size. Concepts which are generally used in describing spatial relationships include north, south, etc. as well as above, below, against, through, etc.

*<sup>5</sup>SOCIAL STUDIES PROCESSES* - The following social studies processes are necessary to include in the social studies program if the basic skill areas are to be achieved or mastered by students. The seven delineated processes defined below are appropriate for each basic skill area and should be a central part of the student's skill work in any social studies program.

- a) INFERRING - Inference is drawing tentative conclusions about what is not directly or immediately observable. While it may be based on observations, inference requires evaluation and judgment. Inferences based upon one set of observations may suggest further observation which in turn requires modification of original inferences. Inference leads to prediction. In the social studies, inferring can take place whenever data are reviewed and an evaluation or judgment is requested. Inferring is necessary in any field of study because of the incompleteness of data.

problem. Classification has to do with the way reasoning fits the topic, question, or problem under consideration. If we ask whether this community is a “good place in which to live” we must use a type of reasoning which is different from the process used to ask whether “Mary started the fight on the playground.” Or, to put it another way, it takes a different set of skills to argue that something is either true or false (where there is no third possibility) than it does to argue along a con-

- b) PREDICTING - Predicting is the formulation of a possible consequence based on experience. The reliability of prediction depends upon the accuracy of past observations and upon the nature of the event being predicted. Predictions are based upon inference. Social predicting is becoming more systematic. Predicting may enable man to estimate the consequence of his behavior better and to make more rational decisions.
- c) MEASURING - Measuring properties of objects and events can be accomplished either by direct comparison, or by indirect comparison with arbitrary units. However, for purposes of communication, measurement may be standardized. Measuring in the social studies may take many forms, such as population data of the United States or the Gross National Product.  
Interpreting data requires the application of other basic processes, in particular, the processes of inferring and predicting. Through this complex process the usefulness of data in answering the question being investigated is determined. Interpretations are always subject to revision in the light of new or more refined data. Social problem solving is dependent upon the investigator's ability to interpret data. Through interpreting data we move to decision-making (e.g., voting for candidate X or Y; buying more life insurance).
- d) FORMULATING DEFINITIONS - Definitions are made in order to simplify communication concerning the event, person, or group being studied. A definition should contain the minimum amount of information needed to differentiate that which is being defined from other similar phenomena under investigation.
- e) FORMULATING QUESTIONS AND HYPOTHESES - Questions are formed on the basis of observations made and usually precede an attempt to evaluate a situation or event. Questions when precisely stated are problems to be solved through application of the other inquiry skills of the social studies. The attempt to answer one question may generate other questions. The formation of hypotheses depends directly upon questions, inference, and prediction. It consists of devising a statement that can be tested by a proof process. When more than one hypothesis is suggested by a set of observations, each must be tested separately. A workable hypothesis is stated in such a way that testing can establish its credibility. The inquirer's framework of concepts and generalizations influences the kind and quality of the questions and hypotheses he develops. In the social studies, if the generalization, “If labor is divided, then work is done more efficiently,” is testable, it can be called or labeled a hypothesis.
- f) TESTING HYPOTHESES - Testing hypotheses is the process of designing and using data gathering procedures, determining whether the data support the hypothesis. In a less formal sense, the proof process may be conducted simply by making observations. However, even here a plan to relate premises to data is inherent in the process. Among the ways that hypotheses are tested in the social studies are: (1) determining whether the hypothesis agrees with data gathered about persons, events, or situations in other times and places; (2) determining whether the hypothesis is consistent with additional data gathered about the event or situation under study; and (3) determining whether the hypothesis agrees with accepted generalizations.
- g) FORMULATING MODELS - Models, whether physical or mental, are devised on the basis of acceptable hypotheses, or upon hypotheses that have yet to be tested. Models are used to describe and explain the interrelationships of ideas. In many cases the model implies new hypotheses and if testing these hypotheses gives new information, the model must be altered. Examples of model formation in the social studies are: a map, a drawing of an economy's spending system, and a diagram of the political structure of a country.

tinuum from excellent to poor. In the former case, we are saying something is either valid or not, but in the latter case we are arguing in relationship to a standard of quality. According to the rules of basketball, team A won the game (either Team A won or team B won). This is

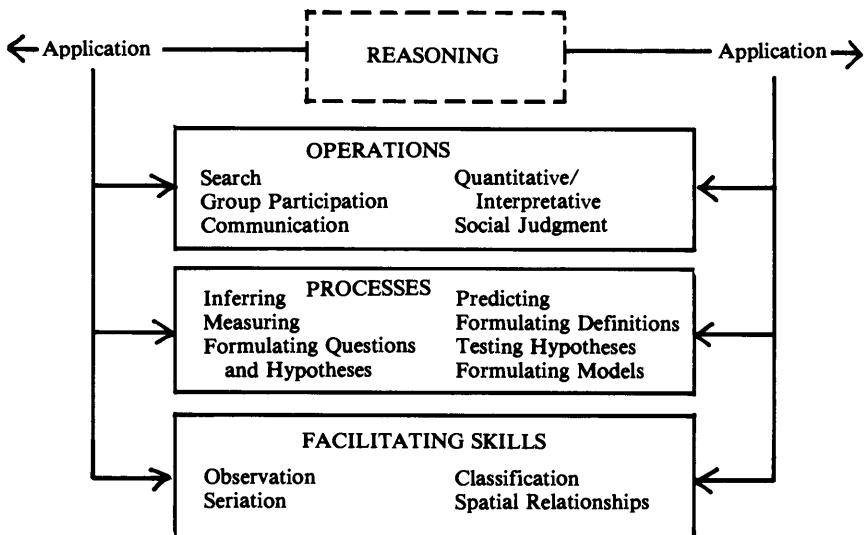
**\*BASIC SOCIAL STUDIES OPERATIONS** - The basic social studies operations become the focus of skill work in the social studies program. They are learned patterns or complexities of the social studies processes. At all levels, students should be developing their ability to use these basic operations.

- a) **SEARCH** - Searching is the purposeful process of asking questions, gathering data and interpretations, judging relevancy and sufficiency, finding answers, and drawing conclusions. In the social studies, search is a constant focus as issues, inquiries, and dilemmas are addressed. Searching becomes more formal as students prepare oral and written presentations.
  - 1. Questioning - factual, interpretive, evaluative
  - 2. Gather, observe, and organize information from a multiplicity of sources
    - a. Design investigations
    - b. Use the Dewey decimal system, *Readers Guide*, and other information cataloging systems
    - c. Locate and use reference materials productively
    - d. Survey, experiment, observe, poll, and interview
    - e. Recognize main ideas, note unusual information, check definitions and terms, select most relevant information, and paraphrase
    - f. Record sources of information and develop notetaking system
    - g. Search for missing information or supportive ideas
  - 3. Evaluate information gathered
    - a. Identify and interpret basic premises and theses
    - b. Identify and interpret cause and effect relationships
    - c. Distinguish fact from opinion
    - d. Compare, contrast, and classify to recognize similarities and differences
    - e. Recognize and judge bias, emotion, and motivation
    - f. Cross-reference ideas and information
    - g. Judge the integrity and sources
  - 4. Presenting information
    - a. Formulate generalizations, valid inferences and thesis
    - b. Substantiate ideas using gathered data and logic
    - c. Use quotations and citation of sources
    - d. Develop introduction, body, and conclusion to make presentation an original work
    - e. Strive for good form, good grammar, and academic charm
    - f. Assume responsibility for final product
- b) **GROUP PARTICIPATION** - Group participation operations are those methods used by people as they interrelate and cooperate in accomplishing a task. The individual contributes to the group and receives from it. Students and citizens have a responsibility to relate effectively as they function in groups, be those groups communities, families, religious institutions, business institutions, school classes, civic/social organizations, or peer groups. The skills of leadership, effective interaction, and participation are fundamental to the social studies program. The classroom and school should be a central location to develop and practice group participation.
  - 1. Take various roles, including leadership, in group work
  - 2. Define the task and design strategies for work
  - 3. Listen to, and be accepting of, people's differences and point of view
  - 4. Take turns, share responsibility, be considerate of others, and show enthusiasm
  - 5. Contribute to discussion in large and small groups
  - 6. Present, communicate, or take action on group decisions
  - 7. Give and accept constructive criticism
  - 8. Reach conclusions and be prepared to vindicate them

a different question from “which ballplayer was most valuable?” The ability of an individual to reason effectively in both cases above, as well as in other situations, calls attention to the need to develop competencies in several skill categories.

- c) **COMMUNICATION** - Communication is the ability to receive and give information, ideas, and values. Individuals and groups transmit messages and preserve knowledge with symbols. Fundamental to any communication is the ability to conceptualize. Then through listening, speaking, gesturing, reading, writing, art forms, etc., people can exchange symbols, values and ideas. Special areas of study have specialized language and while special and technical languages exist, the educated citizen needs to understand the common civic, social and economic language(s) of his or her society and the world.
  - 1. Conceptualize and draw upon vocabulary
  - 2. Read many types of writing with comprehension
  - 3. Read critically
  - 4. Communicate through oral exchange and reports
  - 5. Take notes, outline, and prepare written expressions and reports
  - 6. Listen for a purpose
  - 7. Brainstorm and share ideas
  - 8. Take notes, outline, and communicate through essays
- d) **QUANTITATIVE/INTERPRETIVE** - These operations address the ability to interpret and create models and other symbolic representations of social data. In order to manage the large quantities of data in the modern world the citizen must develop disciplined thinking relative to social knowledge and phenomena, and must know how to organize, interpret and present data in the most effective and efficient ways.
  - 1. Formulate and use models
  - 2. Map and globe skills - symbols, direction, location, interpretation
  - 3. Read, interpret, and construct graphs, charts, drawings; pictures and cartoons
    - a. Describing data through the use of frequency tables and measures of central tendency
    - b. Using ordered pairs to locate points on a graph
    - c. Determining appropriate graphing or presentation techniques for given sets of data
    - d. Making predictions from data
    - e. Choosing appropriate sample(s) from which to collect data needed to describe a general situation
    - f. Using estimation in making comparisons
    - g. Measuring
    - h. Reading and making charts and graphs
    - i. Observing directly and recoding or describing observations
    - j. Reading and using ratios and index numbers
    - k. Recognize how judgments affecting estimations may be influenced by an individual's perspective
  - l. Select effective, efficient mode for presenting data/information to various audiences
- e) **SOCIAL JUDGMENT** - All decisions which effect other human beings carry with them the rights and obligations of any contract complete with reverences to the high ideals of human rights and social justice. Social judgment requires the ability to make ethical and rational decisions within all of the various social and physical environments in which we live.  
Social judgment includes those skills necessary for making, influencing, and judging the decisions of self and others. It means that the first and most important step toward ethical/rationale civic behavior is knowledge of and the reason for the social contracts within which all people live.
  - 1. Relate past and present; cause and consequence
  - 2. Apply jurisprudential reasoning

Skills are placed in levels in this network based upon the criterion of inclusiveness. That is, the more inclusive (of other skills) the "higher order" is attributed to it and this quality places the skill in a particular category. In concert, the three levels of facilitating skills, processes and operations, provide the material substance for *reasoning*.<sup>7</sup> The three levels of skills delineated here suggest a taxonomy for the development of reasoning abilities (see Figure 1). The *operations* (of Search, Group Participation, Communication, Quantitative/Interpretive abilities, and Social Judgment) depend upon the various social studies *processes* (of inferring, predicting, measuring, formulating definitions, formulating



**Figure 1: A Skill Network**

3. Make commitments, exercise rights, and exert influence in a responsible manner
4. Apply cost and benefit analysis
5. Recognize bias, emotion, and motivation
6. Arrive at reasoned, ethical decisions and value positions and evaluate their social consequences
7. Preserve human dignity in human relations
8. Accept responsibility and recognize human rights

<sup>7</sup>REASONING (basic argument forms)

- a) DEDUCTIVE ARGUMENTS
  1. If all of the premises are true, then the conclusion *must* be true.
  2. All of the information or factual content in the conclusion was already contained, at least implicitly, in the premises.
- b) INDUCTIVE ARGUMENTS
  1. If all of the premises are true, then the conclusion *might* be true, but not necessarily.
  2. All of the information or factual content in the conclusion was already contained, at least implicitly, in the premises.
- c) ANALOGICAL ARGUMENTS - Arguments relating to or based upon analogy, i.e. if two or more things agree with one another in some respects they will probably agree in others. The existence of a correspondence between the members of pairs or sets of linguistic forms that serves as a basis for the *creation* of another form.

questions and hypotheses, testing hypotheses and formulating models) for substance. In turn, these processes depend upon the *facilitating skills* (of observation, classification, seriation, and spatial relationships) for existence. For example, when reading skills or map and globe (or any other social studies operation) skills are being developed the student must make use of facilitating skills and social studies processes. Thus, in any map or globe activity the student may observe, classify, explain spatial relationships or measure, infer and formulate a hypothesis. Practice with facilitating skills and social studies processes becomes necessary if we expect students to be competent with skills in the category labeled "operations." Competency in any skill category is a function of one's competencies in the supportive or lower categorie(s). We cannot be competent in using social studies processes, for example, unless we are competent in using facilitating skills.

The important notion in this network of skills is the interrelatedness and interdependence of the three levels as they provide the substance for reasoning. In teaching the "operation" of communication (reading, for example), students continually make use of all processes. All competent readers formulate hypotheses as they read and then test these hunches as they read on. A good reader is always trying to anticipate the author; as he or she reads through the narrative, hypotheses about where the author is going are continually set up and tested. Systematic attention to this process as well as the other social studies processes is fundamental to better reasoning (comprehension).

Similarly, the facilitating skills of observation, classification, seriation, and spatial relationships are instrumental to hypothesis formation as well as to all other processes. Of particular concern, however, are the ways in which these facilitating skills are perceived and presented by teachers. It is extremely important that a clear understanding of these skills be part of all social studies teachers' knowledge. To use an analogy, the facilitating skills, processes, and operations are like the information in the playbook that a professional football quarterback uses. Depending upon the situation and game condition, the quarterback will pick, blend, and sequence plays so as to score. Likewise, the teacher, depending upon the situation, can pick, blend, and sequence facilitating skills, processes, and operations to have students achieve better reasoning ability.

It should also be noted that as students apply "reasoning" to situations of interest and concern, they will, in turn, enhance each of the skill levels. Thus, competency in all skill areas is improved through the application of "reasoning." The selection or sequential arrangement suggests a coordination of skills in this network. It means the teaching of reading and map and globe skills, for example, will depend, in turn, upon the teaching of facilitating skills and processes, not as something that would be nice to do, but as something that is necessary to do. In the operation of this network, special attention will have to be given to each skill component so that abilities in handling all of the facilitating skills and processes can be developed. Only when all of these skill levels are

addressed can we hope to develop student abilities in reasoning. As an example of the treatment of one facilitating skill and its relationship to reasoning (the specific is always seen in terms of the whole), the skill of classification will be studied in some depth. Classification is used here because it is so fundamental to reasoning. The disjunctive (syllogism) is not only basic to logic, it is basic to all other operations and to concept formation as well.

We will now consider one skill within the first (facilitating skills) level of the network, the skill of classification. First of all, classification will be discussed in a general way so we may see its relationship to the skill network. Second, specific types of classification will be presented with examples for classroom utility. Finally, a short discussion on curriculum implications will follow.

### **Thinking About Classifying**

“There is a place for everything and everything should be in its place.” How many times have we heard these words? Whether we like it or not everything does have a place . . . a place in our thoughts and in our language. In fact, everytime we speak, we put objects, events or people “in their places.”

“I’m going to take my vacation this year in Canada.” In order to make this statement and expect it to have any meaning, many objects, events and people must be put in their places.

What’s a “vacation?”

What’s a “year?”

What’s a “Canada?”

Who am “I?”

The answers to all of these and other questions related to the statement “I am going to take my vacation this year in Canada” depend on our ability to place certain items in particular categories. It demands an ability to deal with the physical world and our experiences in it so that such experiences are meaningful. For example, “Canada” is a political and geographic abstraction that carries with it a whole array of attributes. It has a location on earth, a particular political system, natural resources and a special demography, all of which help us to separate Canada from other nations, or to “put it in its place.” “Vacation” is a particular abstraction that denotes a separation from work. Vacation may mean less attention to time schedules, more traveling, new cities to explore, etc. Vacation is “put in its place” and we give it a particular meaning. The terms “year” and “I” are also put in their places by abstracting their relationships to other related ideas.

The ability to create and use sets or categories has a direct bearing on our ability to use skills from the “processes” and “operations” categories. Classification is necessary for hypotheses testing (processes) as well as for making social judgments (operations). Thus, as we prac-

tice classification, we are indirectly working on other skill categories as well. This is the case with all skills in the taxonomy; they support and reinforce each other.

The notions of abstraction, judgment, truth, and the skill of classification are related in interesting ways. For example, people often speak of the “real world” as something we should prepare for in school. But, what is this “real world?” Is the real world the solid earth or the solid chair on which you are sitting? It must be real for we can touch and measure these items. But we also know enough about science to understand that the “solid” chair is made up of intricate cells composed of more space than matter. And, the earth is a moving fluid mass which cracks and shrinks and continually reshapes itself. Is the real world that world inside the nucleus of each atom or are the stars in the next galaxy the real world? When you think about it, the real world seems to be more like a great *thought* than an object or collection of objects. Indeed, the real world (reality), which at first glance seems so obvious, can slip from one meaning to a new meaning depending upon the abstraction levels and the classification schemes we bring to bear upon objects, events, phenomena and people. We use language, and more specifically concepts (categories), to dissect our environments. Whether those environments be physical, social, biotic or spiritual, we use categories or sets to place animals here and fish there, electrons here and nuclei there, Germans here and Russians there, etc. Everything is in its place; and, if there isn’t a place for everything, we will create one.

The act of classifying sets into motion one of the simplest forms of deductive logic, the disjunctive syllogism (that is, something is either X or Y). It also forces the individual to reason about those items or ideas that don’t fall neatly into category X or category Y. Sometimes a new category must be invented or created for the situation. When, for example, the automobile was invented, new categories and terms were created. Automobile is, of course, the title of a set or category that contains Fords, Chevys, and Volkswagens. As inventions or new additions are made to our culture or knowledge, new categories must be created. In fact, it may be the case that invention is a function of our ability to create new classifications by seeing something which no one else has seen before or by asking a question no one has asked before. The physical phenomena available to people like Sir Isaac Newton or Albert Einstein were and are available to others. However, these men began to classify items differently. Einstein, for example, saw a relationship between time and speed that suggested a fourth dimension. The categories of time/speed now speak to a new classification with length, width, height (and time) which allows us many new insights into the physical world. Whether we are looking at Einstein creating a new theory of relativity or a child learning a new term to describe the environment, the skill of classification is fundamental.

Consider what happens when we stumble into a strange environment or come across a strange creature. Where am I? What is it? Is it dangerous here? Will this thing hurt me? As soon as we can identify the

class or set to which the new item(s) belongs, we assimilate the environment and/or creature by calling up from our memory classes or sets into which these new items can be placed and understood. We do not have the mental ability to treat each new stimulus as a unique entity. Thus, the skill of classification is not only convenient, it is absolutely necessary in dealing with the world.

The ability to classify is basic to all thinking. It is fundamental to proficiency in all other skills such as reading, writing, quantification competencies, etc. The skill of classification is basic to all of these other abilities simply because it is the foundation upon which language use and development is built, and language, in turn, is our most fundamental thinking tool.

The labeling process we go through when learning a new word or a new meaning for an old word is fundamental to concept formation and concepts are fundamental to thinking. In essence a concept *is* a classification, a category. A concept is a categorization of things, events, or ideas. It is a convention, a carrier of meaning, an aid in communication, a tool for thinking, and a helpful guide in bringing order to our world. The concept of "bird" immediately suggests a set or category by which we can separate birds from non-birds. Animals, people, objects, events, phenomena, natural elements must be classified if we are to deal with them effectively. Most useful knowledge has to do with relationships that exist in nature, among people, and between nature and people. Without the acquaintance of a great many classification schemes and the ability to establish criteria for new categories, individuals cannot grasp relational ties between and among basic concepts. And, of course, without this skill there can be no reasoned thought and no communication.

Classification is an act or thought that sorts objects, events, people and phenomena into groups or sets according to criteria that are consistent, that are agreed upon, that can be communicated and that can be tested according to quantitative and/or philosophical evaluations.

## **Types of Classifications**

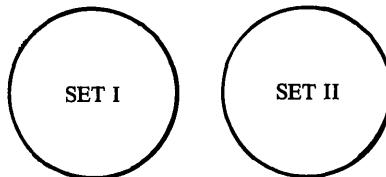
Classifications can be made in three and only three ways. These three ways are called the disjunctive (either/or) classification, the inclusive classification, and the some/all classification.

*Disjunctive (either/or) classification.* This type of classification means that A and B are separate; an item belonging to one set cannot belong to the other. The item is *either A or B*. The color is red not blue. The tree is tall not short, etc. Once a category (red, tall, etc.) is established, items fall within or outside of the set. The letter "A" is not the letter "B"; it is not the letter "C", etc. (see Figure 2).

We learn the disjunctive classification first. We start using the disjunctive when we begin to distinguish between dad and mom, between

dog and cat, and between milk and water. Only later will individuals distinguish between "my dad" and "other men," for example. The disjunctive classification skill is also fundamental to vocabulary development, or what we call concept development and labeling. Children can look at many pictures of animals or draw pictures of animals themselves and will eventually, with instruction, come to label the animals as

**Figure 2:** Disjunctive Classification



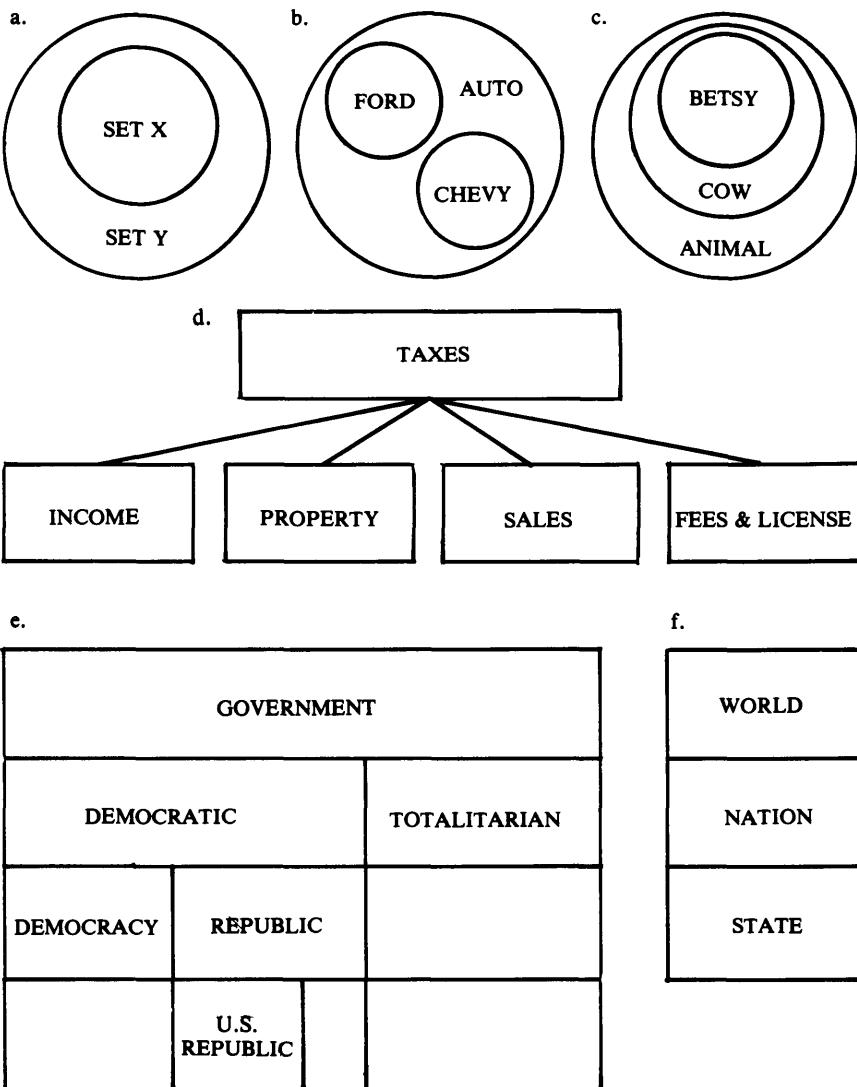
horse, cow, giraffe, monkey, etc. This process of concept development and labeling (vocabulary development) will allow a student to speak of economic demand, for example, without presenting a long list of attributes. Other students who have developed similar categories will know that he or she is addressing demand and not supply. Skills of disjunctive classification are fundamental to all other skills in the sense that the ability to establish and use discrete categories is prerequisite to all other skill operations.

*Inclusive classification.* The inclusive classification means that one set is a subset of another set. It means that set X is found within set Y (see Figure 3a). All robins are part of the category called birds. All Chevys are part of the set called automobiles. Inclusive classifications can move in two directions. First, inclusive classifications can discriminate within a single set. For example (see Figure 3b), Betsy belongs to the set called cow; cow belongs to the set called animals. Second, inclusive classifications can discriminate between and among sets within a larger category. For example (see Figure 3c), Chevys and Fords belong to the set called automobile.

The establishment of sets and subsets is an interesting process for students as it allows for linguistic interrelations which are the foundation of all reasoning ability. Few, if any, objects, events or people have only one name. Because of this multiple name situation they can be placed in more than one category. Further, when we are asked to define something, we usually give it another name. We describe a Dodge as an automobile, a robin as a bird, and Mark Twain as a writer. In each case, we place items into a larger category. The point of classification process is to suggest areas of similarities between the item being "defined" and other items within the same larger category. By saying a robin is a bird, we call attention to the fact that a robin has something in common with crows, hawks, and hummingbirds.

We can often specify a smaller subset to which an item also belongs. A Tax for example can be referred to as Income, Property, Sales, etc. (see Figure 3d). A Government can be referred to as a Democracy (see Figure 3e). With more names, much more can be said about an item. Categories can also be related in such a way that items may be seen as of

**Figure 3: Inclusive Classification**

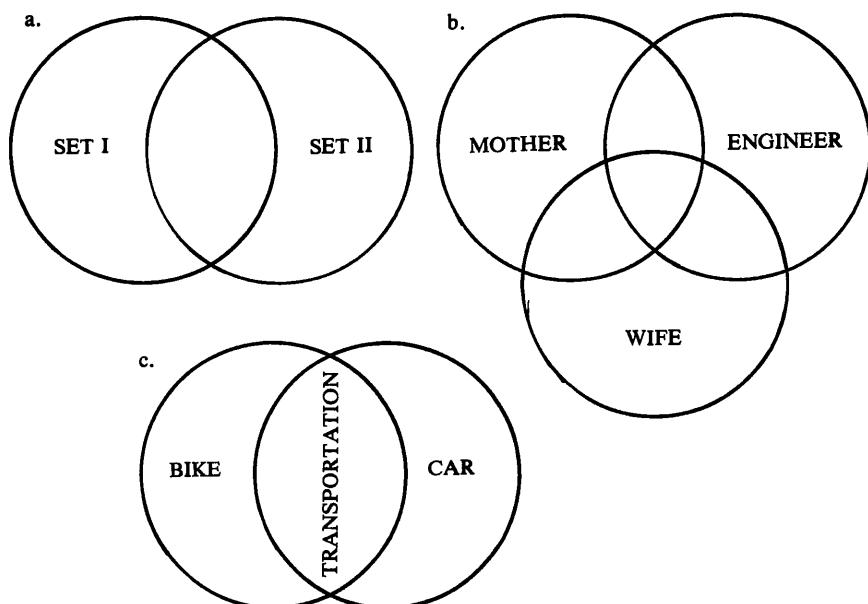


a higher or a lower order, depending on what is being compared. U.S. Republic is subordinate (lower order) to Republic, but Democratic is superordinate (higher order) to Republic (see Figure 3f). The skill can also be seen as the ability needed in dealing with abstractions.

Moving from lower to higher levels of abstraction and back again is essential to such skills as writing a paragraph or establishing a taxonomy. And, like the disjunctive classification, it is basic to all other skill operations. For example, when a child makes distinctions within particular sets, making explicit the relationship between said set and a sub-set, he or she is taking the first step toward understanding how items relate to one another abstractly. Children begin to see how their family relates to the abstract notion of “family” as opposed to the category called “community.” This ability is necessary to all reasoning.

*The some/all classification.* The some/all classification (see Figure 4a) is the most difficult classifying skill to master in that it calls for the ability to discriminate between different sets when these sets overlap. Sets such as student/athlete, work/play, son/brother and wife/mother are examples of concept pairs which share some attributes and yet have other attributes which are unique. The concepts of “wife” and “mother” carry some similar, yet many different attributes. The roles of wife and

**Figure 4: Some/All Classification**



mother suggest similar attributes of being female, a particular age achievement and emotional and physical involvement with other people. However, there are unique attributes to the roles, one dealing more with a legal or social role and the other more with a biological fact. At times the roles will seem to coincide and at other times the roles will be quite different. The same individual could be a wife, a mother, and a nuclear engineer (see Figure 4b). Clearly, the same individual can classify her life as a series of overlapping sets and can gain insights into

her total "person."

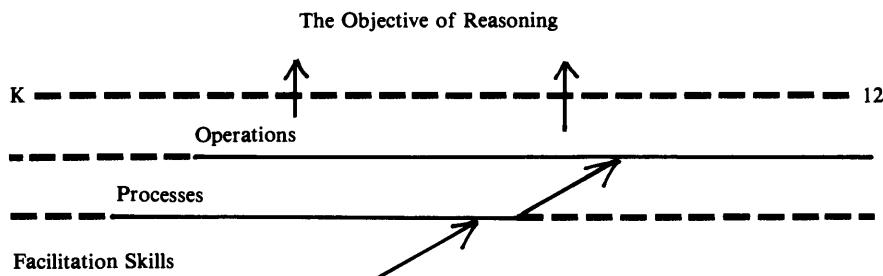
Some/all classifications can be made in two different ways. The classification of one item can be made depicting two or more functions; i.e., the automobile can be used as a car or a truck, a bird and a bear can share the attributes of walking. Second, some/all classifications can be made of different items that perform similar functions. For example, a car and bike share the function of transportation (see Figure 4c). Thus, the concept of transportation can be developed through classification activities. Some/all classifications can be made relative to the same item with different functions, as well as with different items that have similar functions.

This presentation of classification should suggest, again, that the part (classification) is developed in terms of the whole (reasoning). The metaphor of reasoning allows teachers to help students relate all specific facilitating skills, processes, and operations to reasoning and its application.

### Curriculum Implications

The curriculum implications of this skill network are particularly appropriate to the elementary social studies program, although its utility can be seen K-12. One of the problems which elementary educators face is the fragmentation of content (including skills). The skill network can

**Figure 5: Curriculum Pattern  
for Skill Development**



provide a common base of skill (using social studies as a core) development because the skill network contains those skills appropriate to all content areas. The skills themselves can serve as a unifying curriculum force. For example, in the early elementary grades, attention can be given to the skills of observation, classification, seriation, and spatial relationships—not only in social studies but in *all* content areas. This practice would add a great deal of efficiency to the instructional process. Instead of dealing with different skills in each discipline (many of which turn out to be the same) it is possible to place emphasis, consciously, upon those common skills which point to a common objective, reasoning.

As teachers use the social studies processes, they will begin to see them as dependent notions, dependent upon the facilitating skills. And, as teachers use opérations, they will see them as dependent upon processes. Finally, as curriculum workers develop skill patterns for inclusion in the social studies program, they might find the scheme depicted in Figure 5 useful.

This curriculum pattern for skill development points toward the objective of reasoning which suggests that the three levels of skills function together as they move from kindergarten through the twelfth grade. They are continually interacting with one another and address in concert the objective of reasoning. Notice should be made of the placement of facilitating skills "first," processes "second," and operations "third." However, it should be clear that the flow from one level to the next and back again should be encouraged. In the secondary school programs more attention might be given to "operations," but this would depend upon students' abilities in the other two skill levels. Thus, the teacher may find it necessary to move back and forth across all three levels with great regularity.

A structure for curriculum, then, may be established as suggested above; teachers however will have to maintain a flexibility appropriate to the students' abilities and content involvement.

## Conclusion

In addition to classification, all other facilitating skills, processes and operations need to be understood as interrelated. The type of skill coordination suggested by the "network" should allow for greater efficiency in the teaching/learning process due to the reinforcement that will take place as students work with facilitating skills, processes, and operations. This coordination of skills should help students in their reasoning ability since it will force them into linguistic/symbolic manipulations.

As each skill area is developed in some depth, as with "classification" above, teachers will note the growing relationship among all skills. This knowledge can improve instructional decision-making and student reasoning abilities. However, there are several questions still unanswered. Can we sequence learning activities from the facilitating skill group to reasoning according to the maturity of students? Can one skill network work for students from different socio-economic groups? What happens when different content themes are used as vehicles for skill development?

These and many other questions about teaching and learning skills need to be explored. Again, what is presented here is one organizational scheme for skill development that points us toward one basic rationale of social studies education, reasoning.

The author wishes to thank Mr. Paul Ferguson and the Social Studies teachers of the Waukesha (Wisconsin) Public Schools for help in the design and field testing of the Skills Network.

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