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In This Issue...

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THEORY AND RESEARCH IN SOCIAL EDUCATION

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The CUFA Program at the 72nd Annual NCSS meeting in Detroit, MI is scheduled for November 20, 1992. The deadline for submitting proposals is February 1, 1992. Proposal forms can be obtained from the 1992 CUFA Co-Chair, Sharon Pray Muir, at the following address:

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Volume XIX
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IN THIS ISSUE . . .

Editorial

In this issue of *Theory and Research in Social* Education, we present five articles, each of which deals with some aspect of a single topic--the development of higher order thinking skills. Ever since I can remember, the development of student thinking has been a primary goal of social studies educators. Unfortunately, although there have been (and undoubtedly are today) some notable exceptions, the development of thinking in the social studies has remained for the most part just that--a goal. Observers continue to report that much (if not most) of the instruction that goes on in social studies requires more the memorization and regurgitation of information than thinking about it.

Many reasons can be (and, of course, have been) given to explain the lack of emphasis on thinking that is revealed in many social studies classrooms. A lack of clarity about what the term involves; uncertainty about what counts as achievement in this regard; too many students for teachers to offer the necessary individual help that thinking-oriented instruction requires; too much material to "cover" to concentrate on teaching students to think; too hectic a pace to offer teachers enough time to be thoughtful themselves; and even the belief among some teachers that thinking cannot be taught, or that it can only be taught to certain kinds of students and in certain kinds of subjects.

Supported in part by a grant from the Office of Educational Research and Improvement, U.S. Department of Education from 1985-1990, Fred Newmann and his colleagues at the University of Wisconsin set out to investigate two overarching questions: (a) To what extent is it possible for high school social studies departments to encourage higher order thinking? (b) How are barriers to thinking overcome in the more successful social studies departments? This study, directed by Newmann, represented the main part of the Project on Higher Order Thinking in the High School Curriculum of the National Center on Effective Secondary Schools (located at the University of Wisconsin).

What they did, how they did it, and what they found out are revealed in the articles in this issue. The efforts of these researchers offer considerable food for thought about not only the development of classroom thoughtfulness, but also the difficulties involved in doing research in real-life schools.

Jack R. Fraenkel
November, 1991

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PROMOTING HIGHER ORDER THINKING IN SOCIAL STUDIES: OVERVIEW OF A STUDY OF 16 HIGH SCHOOL DEPARTMENTS

Fred M. Newmann
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Abstract

A study of social studies departments in 16 high schools examined the extent to which higher order thinking was promoted and how barriers were overcome in the more successful departments. This overview article presents a conception of higher order thinking grounded in non-routine intellectual challenges, a discussion of the role of knowledge, skills and dispositions in meeting them, and the observation scheme used to assess classroom thoughtfulness. It describes the research design and previews the four ensuing articles that report empirical findings.

Introduction

For years social studies educators have proposed a variety of approaches to the teaching of thinking in social studies. The more thorough formulations have been conceptualized as critical thinking (Beyer, 1985; Ennis, 1962; Feeley, 1976; Giroux, 1978), reflective thinking (Hunt and Metcalf, 1968); social scientific inquiry (Barr, Barth, & Shermis, 1977; Morrissett, 1967), and jurisprudential reasoning (Oliver & Shaver, 1966). Neither the slogans nor the more careful arguments for the teaching of thinking seem to have influenced practice on a wide scale. Studies continue to show that most instruction in social studies as well as in other subjects follows a pattern of teachers transmitting information to students who are then asked to reproduce it (Goodlad, 1984; Shaver, Davis & Helburn, 1978; Sizer, 1984).

How do we explain the conspicuous absence of the promotion of thinking in social studies? Several possible obstacles can be considered: difficulties in defining higher order thinking and in evaluating student performance; curriculum guidelines and testing programs that require coverage of vast amounts of material, leaving little time to reflect upon it; class size and teaching schedules that prevent teachers from responding in detail to students' work; students' apparent preferences for highly structured work with clear, "correct" answers; and teachers' conceptions of knowledge that emphasize the acquisition of information more than interpretation, analysis, and evaluation.

Thanks to many teachers who apparently overcome such hurdles, we have seen students inspired and challenged to use their minds well in the study of history, social studies, and the social sciences. But will U.S. schools ever be able to produce more than several isolated examples? What are the prospects for departmental and school-wide emphasis on higher order thinking? In 1985 we began a study focused on two broad questions: To what extent is it possible for American high school social studies departments to promote higher order thinking? and How are the apparent barriers overcome in the more successful departments?

The four ensuing articles in this series report the latest results from the study.[1] This article presents the conception of higher order thinking and the framework for assessing classroom thoughtfulness on which subsequent articles are based. It describes the research design and methods used in common by the other four articles, and offers a preview of them.

What is Higher Order Thinking?

Researchers and educators have advocated many conceptions of thinking: critical thinking, divergent or creative thinking, reasoning (moral, practical, deductive, inductive), problem-solving, decision-making. These can all be subsumed under a more general distinction between higher order and lower order thinking. Higher order thinking is defined broadly as challenge and expanded use of the mind; lower order thinking represents routine, mechanistic application, and limited use of the mind. Challenge or expanded use of mind occurs when a person must interpret, analyze, or manipulate information, because a question to be answered or a problem to be solved cannot be resolved through the routine application of previously learned knowledge. In contrast, "lower order" thinking generally involves repetitive routines such as listing information previously memorized, inserting numbers into previously learned formulae, or applying the rules for footnote format in a research paper.

Challenging problems can appear in many forms in all curriculum subjects. They may lead to single, correct, and well-defined answers or to multiple, ambiguous, conflicting solutions. The challenges may involve different kinds of inquiry (logical, empirical, aesthetic, ethical), different forms of expression (oral, written, non-verbal), different types of intelligence (verbal, mathematical, kinesthetic, interpersonal).

No particular question or problem, however, necessarily leads to higher order thinking for all students. For one person, trying to understand and follow a bus schedule may require higher order thought, but for another, the same task may be routine. In this sense, higher order thinking is relative: to determine the extent to which an individual is involved in higher order thinking, one would presumably need to know much about the person's history. Furthermore, to assess the extent to which an individual is participating in the analysis, interpretation, and manipulation of information, one would want to "get inside" the person's head or experience his/her subjective state of thought.

This definition poses an operational problem. It is difficult to determine the extent to which a person is involved in higher order thinking, and difficult also to judge the quality of that thinking. Teachers who interact with several students at once have little opportunity to diagnose students' individual mental states. Instead, they must make assumptions about the prior knowledge of groups of students and about the kinds of mental work that particular tasks are likely to stimulate. The teaching of thinking, therefore, is a rather imprecise enterprise. The best we can do is to engage students in what we anticipate will be challenging problems, to guide their manipulation of information to solve them, and to support their efforts.

But this conception of higher order thinking has several positive features.

- Any person, young or old, regardless of experience, can participate in higher order thought. Students will differ in the kinds of challenges they are able to master, but all are capable of confronting a challenge in the interpretation, analysis, and manipulation of their knowledge.
- It encompasses problem-solving in a wide range of school subjects, as well as in non-academic areas.
- Using this conception does not require acceptance of any particular theory of cognitive processing or a particular pedagogy. This is an advantage, because solid knowledge on the best techniques for the promotion of thinking does not exist. The effectiveness of technique will probably depend on the nature of the mental challenges presented and characteristics of the students exposed to them.

Furthermore, this conception is hospitable to providing students with three resources recognized widely in the literature as important: content knowledge, intellectual skills, and dispositions of thoughtfulness.

Merely presenting students with higher order challenges will not necessarily help them develop the competence to meet the challenges successfully. Research on the nature of thinking (e.g., as summarized by Walsh & Paul, 1987) indicates that for students to cope successfully with higher order challenges, they need a combination of in-depth knowledge, intellectual skills, and attitudes or dispositions of thoughtfulness. Building upon my previous review of literature (Newmann, 1990a) I summarize here key arguments that can be made for each of these critical resources.

The Knowledge Argument

Consider a teacher trying to help students answer the question, "Were the American colonists justified in using violence to secure their independence from England?" Regardless of what side the student takes, a successful response depends on in-depth knowledge and conceptual understanding of the circumstances of colonial life under British rule, colonial grievances and British responses, principled arguments dealing with inalienable rights, taxation without representation, and ethical reasoning related to the destruction of property and the taking of human life. Beyond substantive knowledge about the historical period, students will need analytic knowledge, for example, about elements of a well-reasoned argument, distinctions between empirical and normative issues, and criteria for judging the reliability of evidence. Metacognitive knowledge may also be important, such as having a systematic approach for organizing one's thinking or an awareness of how one's thought processes and perceptions of others--in the heat of discussion--might lead to error. Effective applications of these forms of knowledge are sometimes labeled skills or dispositions, but since these all can be represented as cognitive beliefs, they suggest that knowledge itself is the most critical foundation of understanding.[2]

The Skills Argument

Knowledge is undoubtedly important, but for the purposes of the teaching of thinking, skills are critical because they are the tools that permit knowledge to be applied to the solution of new problems. Some skills may be specific to the domain under study, and others more generic. To address the problem above intelligently, for example, one must be able to detect bias in the documents of colonial history and logical fallacies in inferences and arguments over the justification of

the American revolution. One must be able to distinguish relevant from irrelevant information, to anticipate and to respond to arguments in opposition to one's own, to state one's views clearly and persuasively. Skills themselves may be construed or labeled in a variety of ways, but the main point is to recognize their role as cognitive processes through which knowledge is put to work. In practice, knowledge is usually only transmitted from teacher to student without expecting the student to manipulate the knowledge to solve higher order challenges. Unless the processes of using knowledge, i.e., skills, are stressed, higher order thinking is likely to be neglected and the knowledge transmitted to remain inert. Perhaps for this reason many educational reformers prefer not to advocate the teaching of thinking, but instead the teaching of thinking *skills*.[3]

The Dispositions Argument

Without dispositions of thoughtfulness, neither knowledge nor the tools for applying it are likely to be used intelligently. If raising questions about the justification of the war for American independence threatens patriotic feelings, this could jeopardize dispassionate inquiry. Some people may avoid almost any argument to protect themselves from uncomfortable feelings of conflict. Those who emphasize the importance of dispositions suggest several crucial traits: a persistent desire that claims be supported by reasons (and that the reasons themselves be scrutinized); a tendency to be reflective--to take time to think problems through for oneself, rather than acting impulsively or automatically accepting the views of others; a curiosity to explore new questions; and the flexibility to entertain alternative and original solutions to problems. Thoughtfulness thereby involves attitudes, personality or character traits, and general values and beliefs or epistemologies about the nature of knowledge (e.g., that rationality is desirable; that knowledge itself is socially constructed, subject to revision, and often indeterminate; and that thinking can lead to the understanding and solution of problems). Without dispositions of thoughtfulness, knowledge and skills are likely to be taught and applied mechanistically and nonsensically. Of the three main resources, dispositions have attracted the least attention in professional literature, but a good argument can be made that dispositions are central. They seem to establish both the *will* to think and to cultivate ineffable qualities of judgment that steer knowledge and skills in productive directions.[4]

It is important that teachers design instruction explicitly to help students acquire and to use in-depth knowledge, skills, and dispositions of thoughtfulness to solve higher order challenges. It is not

possible to establish a defensible hierarchy among the three resources, but all three are needed.

In order to learn from teachers and departments who are particularly successful in promoting students' thinking, one needs a method of estimating the extent to which higher order thinking is actually promoted in classes. We developed a classroom observation scheme for this purpose which served as the basis for quantitative indicators of the promotion of higher order thinking. The scheme to be presented next is an attempt to capture teachers' efforts to develop knowledge, skills and dispositions, without giving center stage to any one resource, and also to refrain from prescribing the precise kinds of knowledge, skills and dispositions that should be promoted for the teaching of each subject.[5] The reasoning behind this approach is explained in the next section that presents the framework for assessing classroom thoughtfulness.

Developing Indicators of Classroom Thoughtfulness

What kinds of indicators would provide information on the extent to which higher order thinking was promoted in classes studying a variety of social studies subjects? Because it was logistically impossible to examine the actual thinking of individual students during the lessons, a more general tool was needed for describing higher order thinking in the lesson as a whole. But how specific should the criteria be?

Interviews with history and social studies teachers indicated that highly specific lists of knowledge, skills and dispositions would be unlikely to facilitate widespread consensus. Instead, social studies teachers are likely to support a plurality of types of thinking, but even these will be grounded primarily in the teaching of different *subjects*. Thus, a broad conception of thinking, adaptable to a variety of content and skill objectives, is more likely to interest a diverse population of high school teachers.

Rather than translating thinking into specific knowledge problems, skills and attitudes for students, the project staff began by asking what observable qualities of classroom activity would be most likely to help students achieve depth of understanding, intellectual skills, and dispositions of thoughtfulness. Thus, we moved from a consideration of the nature of thinking in individual students to the promoting of thoughtfulness in classrooms. Thoughtfulness includes both presenting students with higher order challenges and helping them apply knowledge, skills and dispositions to solve them. Emphasizing general qualities of classroom talk and activity rather than highly differentiated behaviors helps to avoid fragmentation in

teaching which itself can undermine student thinking. A more general approach may also hold more promise both for students to solve new problems and for teachers to promote thinking across diverse lessons.

A broad set of criteria can strike at the heart of an underlying malady identified in many studies. At best, much classroom activity fails to challenge students to use their minds in *any* valuable ways; at worst, much classroom activity is nonsensical or mindless. The more serious problem, therefore, is not the failure to teach some specific aspect of thinking, but the profound absence of thoughtfulness in classrooms. Even programs designed to teach thinking skills can fail to promote thoughtfulness. Our general conception of thinking can be used to address this basic issue. Ultimately, of course, teachers must focus on the content-specific activities that enhance understanding of their subjects, but the point here is to arrive at a general framework through which classroom behavior can be interpreted as promoting or undermining higher order thinking.

In devising indicators of classroom thoughtfulness responsive to the points above, we initially rated lessons on 15 possible dimensions of classroom thoughtfulness summarized in Table 1. Each was used to make an overall rating of an observed lesson on a 5-point scale from 1="a very inaccurate" to 5="a very accurate" description of this lesson. After observing these qualities in 160 lessons in five "select" social studies departments and further examining them from a theoretical point of view, we chose the six main dimensions described below as most fundamental.[6]

1. There was sustained examination of a few topics rather than superficial coverage of many.

Mastery of higher order challenges requires in-depth study and sustained concentration on a limited number of topics or questions. Lessons that cover a large number of topics give students only a vague familiarity or awareness and, thereby, reduce the possibilities for building the complex knowledge, skills, and dispositions required to understand a topic.

2. The lesson displayed substantive coherence and continuity.

Intelligent progress on higher order challenges demands systematic inquiry building on relevant and accurate substantive knowledge in the field and working toward the logical development and integration of ideas. In contrast, lessons that teach material as unrelated fragments of knowledge, without pulling them together, undermine such inquiry.

Table 1
Initial Criteria for Classroom Thoughtfulness
Classes were rated from 1-5.
(1="very inaccurate" description of class; 5="very accurate.")

1*. In this class, there was sustained examination of a few topics rather than a superficial coverage of many.

2*. In this class, the lesson displayed substantive coherence and continuity.

3*. In this class, students were given an appropriate amount of time to think, that is, to prepare responses to questions.

4. In this class, the teacher carefully considered explanations and reasons for conclusions.

5*. In this class, the teacher asked challenging questions and/or structured challenging tasks (given the ability level and preparation of the students).

6. In this class, the teacher pressed individual students to justify or to clarify their assertions in a Socratic manner.

7. In this class, the teacher tried to get students to generate original and unconventional ideas, explanations, or solutions to problems.

8*. In this classroom, the teacher was a model of thoughtfulness. (Principal indications are: the teacher showed appreciation for students' ideas and appreciation for alternative approaches or answers if based on sound reasoning; the teacher explained how he or she thought through a problem, the teacher acknowledged the difficulty of gaining a definitive understanding of the topic.)

9. In this class, students assumed the roles of questioner and critic.

10*. In this class, students offered explanations and reasons for their conclusions.

*These variables are considered minimal requirements for a thoughtful lesson.

Table 1 (continued)
Initial Criteria for Classroom Thoughtfulness
Classes were rated from 1-5.
(1="very inaccurate" description of class; 5="very accurate.")

11. In this class, students generated original and unconventional ideas, explanations, hypotheses or solutions to problems.

12. In this class, student contributions were articulate, germane to the topic and connected to prior discussion.

13. What proportion of students were active participants?

14. What proportion of time did students spend engaged in thoughtful discourse with each other?

15. What proportion of students showed genuine involvement in the topics discussed? (Cues include raising hands, attentiveness manifested by facial expression and body-language, interruptions motivated by involvement, length of student responses).

*These variables are considered minimal requirements for a thoughtful lesson.

3. *Students were given an appropriate amount of time to think, that is, to prepare responses to questions.*

Thinking takes time, but often recitation, discussion, and written assignments pressure students to make responses before they have had enough time to reflect. Promoting thoughtfulness, therefore, requires periods of silence during which students can ponder the validity of alternative responses, develop more elaborate reasoning, and experience patient reflection.

4. *The teacher asked challenging questions and/or structured challenging tasks (given the ability level and preparation of the students).*

By our definition higher order thinking occurs only when students are faced with questions or tasks that demand analysis, interpretation, or manipulation of information; that is, non-routine mental work. In short, students must be faced with the challenge of how to use prior knowledge to gain new knowledge, rather than the task of merely retrieving prior knowledge.

5. The teacher was a model of thoughtfulness.

To help students succeed with higher order challenges, teachers themselves must model thoughtful dispositions as they teach. Of course, a thoughtful teacher would demonstrate many of the behaviors described above, but this dimension is intended to capture a cluster of dispositions likely to be found in any thoughtful person. Key indicators include showing interest in students' ideas and in alternative approaches to problems; showing how he/she thought through a problem (rather than only the final answer); and acknowledging the difficulty of gaining a definitive understanding of problematic topics.

6. Students offered explanations and reasons for their conclusions.

The answers or solutions to higher order challenges are rarely self-evident. Their validity often rests on the quality of explanation or reasons given to support them. Therefore, beyond offering answers, students must also be helped to produce explanations and reasons to support their conclusions.

The six dimensions were combined into a single scale indicator of classroom thoughtfulness for an observed lesson.[7] To estimate inter-rater reliability, 87 lessons in 16 high schools were observed independently by different pairs of raters drawn from a team of six researchers. Considering the six dimensions in the classroom thoughtfulness scale, each scored from 1 to 5, the overall correlation between two observers was .76. The raters agreed on 64 percent of the ratings, and they differed by one point or less on 96 percent of the ratings. The classroom thoughtfulness scores (later indicated by CHOT) ranged from 1 to 5. They were averaged for individual teachers and for departments according to sampling procedures described below.

Study Design and Methodology

Between the fall of 1986 and the spring of 1990, the project conducted almost 500 lesson observations, and in-depth interviews with 56 six teachers, and the social studies department chairs and principals in 16 demographically diverse high schools. Rather than concentrating primarily upon differences between individual teachers, the study explored the problem of institutionalization: what is required for departmental-wide promotion of higher order thinking? The strategy was to identify exemplary social studies departments (i.e., those that make a serious departmental-wide effort to emphasize higher order thinking) and then, by contrasting these departments with others, to draw inferences about barriers and opportunities for success.

Through national searches which involved nominations, phone interviews, and site visits, we searched for three different sets of social studies departments: (a) those that place special emphasis on higher order thinking, but that organize instruction according to familiar patterns in the comprehensive high school (henceforth the five "select" departments); (b) those that make no special departmental-wide efforts toward higher order thinking and are also conventionally organized (henceforth the seven "representative" departments); (c) those that involve a departmental emphasis on higher order thinking and, in addition, have made significant changes in the organization of instruction (henceforth the four "restructured" departments). The select departments were studied in 1986-87, representative departments in 1988-89, and restructured departments in 1989-90.

Initial evidence of departmental emphasis on higher order thinking and organizational patterns was drawn from statements of the department chair, principal, examination of course syllabi, and classroom observations and staff interviews completed in a one-day, two-person site visit. Decisions to place departments in each of the three groups were made by staff consensus. We found through the research that the actual departmental emphasis on higher order thinking varied considerably *within* each of the three groups. Departments within the restructured group also varied considerably in the kinds of organizational innovation represented. Comparisons between these groups are discussed in Newmann (in press, a).

Since we sought an estimate of the highest levels of classroom thoughtfulness, the strategy was to concentrate on those teachers in each department who most emphasized higher order thinking. However, we also wanted evidence that opportunities for thoughtfulness were available to all students, not restricted to the high achievers. The department chair at each school selected three main courses to be observed, taught by different teachers. The three classes were to illustrate as much higher order thinking as possible, but they were also to include (a) a class with a substantial proportion of lower and middle achieving students; (b) a history course with a diverse range of students; and (c) any other class that best illustrated an emphasis on higher order thinking (which usually comprised high achievers).

Each of the main classes was observed four times per year. A team of two researchers made at least two visits to each school, separated by several months from fall to spring. Observations were made during each visit. Within scheduling constraints, teachers were encouraged to select for our observation those lessons that placed most emphasis on higher order thinking. In addition to recording ratings on the 5-point dimensions, observers also wrote descriptive notes, especially to elaborate on high-scoring dimensions. To gain a more

representative sampling of teaching within the department, we also observed six other lessons, drawn from at least two additional teachers beyond the three main teachers. Analyses of departmental differences in classroom thoughtfulness (see the articles by King, and Ladwig, this volume) were, therefore, based on 18 lesson observations (four each from three main teachers, and six from at least two other teachers), averaged across each department into a score called HOTAV. Each lesson score entered into HOTAV was based on the average of the 6 five-point dimensions of classroom thoughtfulness (CHOT).

The three main teachers per department, the department chairs, and principals completed at least two hours of interviews.[8] These probed their written responses to questionnaires which explored their conceptions of and commitment to higher order thinking as an educational goal, the factors they perceived as necessary to accomplish it, the barriers that stand in the way, and the kind of leadership devoted to it within the school.[9] Evidence about departmental and principal leadership was drawn both from questions to teachers about leadership and from questions to department chairs and principals about their roles and activities. Students in the three main classes were interviewed and/or surveyed and also tested in the representative and restructured schools.

Both the purpose of the study (i.e., to learn from apparently successful departments) and logistical constraints made it impossible to collect information through random sampling of departments, teachers, classes, and lessons. The research staff tried to strike a balance between collecting information representative of the department (and other departments) as a whole, while at the same time focusing on teachers (and social studies departments) most successful in the promotion of higher order thinking. Thus, it is difficult to identify with precision the population(s) to which the findings on these departments and teachers can be generalized. We have no assurance that findings based on these sixteen social studies departments would be replicated in other places, but considerable diversity within this sample suggests the potential of generalizability.

Preview of the Articles

The first objective of the study was to explain why the promotion of higher order thinking seems so rare in social studies classrooms, especially when public and professional rhetoric calls for it so consistently. Onosko's article discusses six main barriers: instruction conceived as transmission of knowledge; curriculum oriented toward extensive coverage; teachers perceiving students as incapable of or resistant to thinking; and teachers having to work within three major

organizational constraints -- a large number of students to teach, lack of sufficient planning time, and a culture of professional isolation.

The second objective was to suggest how the barriers might be overcome on a departmental basis. This is approached from two perspectives. First, King searches for possible differences in the patterns of departmental and principal leadership between those departments that had the most and least success in promoting higher order thinking. The most successful departments were characterized by leadership that generated a common vision around a shared conceptualization of thinking, and that supported a culture of collegial professional work focused both on curriculum development and improvement of pedagogy.

To further understand differences between the more and less successful departments, Ladwig examines the possible influence of organizational features. He found that structural features such as class size, teacher planning time, teacher workload, and the way class time was scheduled did not differentiate between the two contrasting groups. On the other hand, organizational program features did. That is, those departments that adopted a departmental mission focused on higher order thinking, that participated in curriculum revision oriented in this direction, and that systematically helped teachers to improve their teaching along these lines were more successful in overcoming the barriers to promoting higher order thinking.

The study's main interest was in explaining departmental success and failure in the promotion of higher order thinking in social studies classrooms. A more fundamental question is what impact classroom thoughtfulness actually has on student performance in academic tasks that require higher order thinking. I address this issue in the final article. We were unable to reach conclusive findings on this issue, but the study illustrates the critical problem of finding methods of assessment for higher order thinking in social studies that can at once be responsive to teachers' specific objectives and also be standardized in some sense to permit comparison across classes and schools.

Endnotes

[1]This paper was prepared at the National Center on Effective Secondary Schools (Grant No. G-0086900007) and the Center on Organization and Restructuring of Schools (Grant No. R117Q00005-91) both supported by the U.S. Department of Education, Office of Educational Research and Improvement, and by the Wisconsin Center for Education Research, School of Education, University of Wisconsin-Madison. The study formed the main part of the Project on Higher
(continued on next page)

Endnotes (continued)

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[2]Various arguments for the centrality of knowledge to reasoning have been made by Glaser (1984), McPeck (1981), and Nickerson (1988).

[3]Various arguments for skills as the most central resource in thinking have been made by Beyer (1987), deBono (1983), Herrnstein et al., (1986), Marzano et al., (1988).

[4]Various arguments for dispositions as a central resource in thinking have been made by Cornbleth (1985), Dewey (1933), and Schrag (1988).

[5]Those who emphasize interaction and interdependence among these resources include Bransford et al., (1986), Ennis (1987), Greeno (1989), Perkins and Salomon (1989), and Walsh and Paul (1987).

[6]The development of these indicators and selection of the six most critical are described more fully in Newmann (1990a; 1990b). See also Schrag (1989).

[7]Items on the scale have a reasonably high level of internal consistency (Cronbach alpha=.82). Exploratory factor analysis and LISREL modeling also grouped these dimensions into a distinct construct of thoughtfulness (Newmann, 1990b).

[8]Principals in the representative schools were interviewed for one hour. In each of the four restructured schools five teachers completed two-hour interviews.

[9]Interviews were summarized in written notes. The content of specific interviews was not corroborated by different interviewers, but conclusions drawn about departments or individuals were verified through review by at least two staff members who had spent a minimum of two weeks of research at the school.

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BARRIERS TO THE PROMOTION OF HIGHER-ORDER THINKING IN SOCIAL STUDIES[1]

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Abstract

Based on interviews with teachers, department chairs, principals and staff developers, observations of hundreds of lessons, and a perusal of the social studies and broader, school change literature, dominant barriers to the promotion of thinking were identified. Six barriers emerged: instruction as knowledge transmission, a curriculum of coverage, teachers' low expectations of students, large numbers of students, lack of planning time, and a culture of teacher isolation. The way in which each barrier negatively impacts the promotion of students' higher order thinking is explained, combining analytic arguments with quantitative and qualitative research findings.

Introduction

> There is no use in claiming to teach boys and girls how to study, and how to command their intellectual forces by the current practice of keeping them at the point of the bayonet in rehearsal of textbook facts... (Stevens, 1912, p. 26).[2]

> The chief purpose of this analysis...was to get some evidence bearing on the growth of pupils in understanding. From this point of view the study was not successful for the simple reason that...the pupils did not talk enough to give any evidence of mental development (Corey, 1940, p. 745).[3]

> The dominant modes of instruction continue to be large group, teacher-controlled recitation and lecture, based primarily on textbook (Shaver, Davis, & Helburn, 1979, p. 151).
>
> Most discussion in classrooms, when it occurs, calls for simple recall...serious intellectual discussion is rare...how can the relatively passive and docile roles of students prepare them to participate as informed, active and questioning citizens? (Boyer, 1983, pp. 146-147).

The paucity of serious intellectual challenge in America's schools as observed by the above researchers has been echoed by many others past and present. It seems that America's long and rich history of placing the development of students' higher order thinking as a fundamental educational goal (Cuban, 1984a; Mann, 1979) has remained only that, a goal. However, unlike many goals that remain suspended in the rarefied air of political rhetoric, the past decade has witnessed many sincere efforts in this area, both in theory (e.g., Glaser, 1984; McPeck, 1981; Newmann, 1991; Schrag, 1988; Siegel, 1988) and in practice (e.g., Alter & Salmon, 1987; Chance, 1986; Costa, 1985; Pressiesen, 1986; Walsh & Paul, 1987). Despite these efforts, there remains a conspicuous absence of cognitive challenge in most classrooms.

Recent research of typical or representative social studies departments indicated inconsistent and modest efforts at promoting students' thinking, while the study of atypical or select departments revealed superior programs but opportunity for significant improvement (Newmann, in press). In addition, Newmann, Onosko, & Stevenson (1990) found that among 25 prominent staff developers working to help improve teachers' instruction for thinking, only a few could document that their efforts actually modified teachers' classroom practices and all were quick to cite numerous barriers to their efforts.

Why is it so difficult to make classroom activities more intellectually challenging? What barriers foil teachers' efforts to promote students' thinking? In this paper I will outline the dominant school-related barriers that, according to our 5-year study, confront social studies departments as they attempt to institute greater emphasis on higher order thinking.[4]

The conceptual framework and methodology for this study are described by Newmann (this volume) including the definition of higher order thinking, resources needed by student-thinkers to successfully address challenging tasks, and the observational dimensions used to

identify exemplary teachers and assess the degree to which classroom thoughtfulness occurred in a given lesson.

The term "barrier" is used here to refer to obstacles that inhibit or prevent the observance of higher-order thinking among students in classrooms. The operationalization of higher-order thinking in the form of six dimensions of classroom thoughtfulness (CHOT) helped to direct the identification of the dominant barriers discussed below.

Methodology

In-depth interviews were conducted and questionnaire responses were gathered in 16 social studies departments nationwide from 56 teachers and from each department chair and principal. Nearly 500 classroom observations of teachers' lessons were gathered by a 6-member research team. Teachers were ranked according to the score of their lessons on classroom thoughtfulness. References below to "successful" or "outstanding" teachers indicate teachers whose average CHOT scores placed them in the top 20 percent of the 56 teachers interviewed in this sample. To further inform this inquiry, extensive interviews were conducted and written responses to a questionnaire were obtained from 25 staff developers from around the country working to help improve teachers' instruction for thinking.[5]

Based upon (a) the above data, (b) informal observations from each member of the research team, and (c) a perusal of the research literature on social studies education and the broader, school change literature, a number of barriers to the promotion of thinking were identified. Using analytic arguments, classroom observations, and/or interview data, the research team reached consensus on six dominant barriers to thinking. For example, in their classroom observations each member of the team witnessed the detrimental effect of the barrier described as "broad, superficial content coverage." Teachers and staff developers consistently identified content coverage as a barrier, and persuasive arguments in the scholarly literature (Newmann, 1988; Sizer, 1984) have also emphasized its negative impact.

For some of the other barriers discussed below, the sources of evidence were less comprehensive. For example, the barrier described as a "culture of teacher isolation" was not supported by teacher interview data. Only a few teachers mentioned isolation as a barrier to thinking. We think this omission can be explained by the fact that their immersion in such a culture prevented teachers from seeing it or its negative effects. Similarly, in departments where dialogue and sharing did occur (and, not coincidently, where higher-order thinking was more likely to be observed) teachers also failed to identify isolation as a barrier. Isolation was included as a dominant barrier,

nevertheless, because all members of the research team observed the detrimental effects of teacher isolation (and the benefits that accrued when isolation was less pronounced), and because previous research consistently documents the powerful effect school culture has on teaching and teachers (Bullough, 1987; Feiman-Nemser & Floden, 1986; Little, 1982; Sarason, 1982).

The identification of dominant barriers, therefore, involved not only the scrutiny of teachers' perceptions, but also the collective conclusions of the research team based on observations of diverse phenomena in the schools. A case is built below for each barrier, combining analytic arguments with quantitative and qualitative research findings.

Barriers

Teaching as Knowledge Transmission

Social studies teachers are expected to present information, ideas, and issues in history, the social sciences, and civic affairs. In theory, this subject matter can be taught in ways that are intellectually challenging, and, indeed, exceptional teachers do just that (Onosko, 1990; Wineburg & Wilson, 1988). However, research consistently documents that content is transmitted to students in ways that fail to challenge students to think (Cuban, 1984b; Goodlad, 1984; Hare & Pullman, 1980; Shaver et al, 1979; Sirotnik, 1983).

The overriding agenda in classrooms remains student acquisition of knowledge, be it generalizations, themes, facts, chronological events, or beliefs held by prominent people past and present. The educational focus is on the products of others (that is, authorities') thought. The dominant goal is to transmit these conclusions to students and to ensure that students can reproduce them (Cuban, 1984a; Sirotnik, 1983; Whitehead, 1929; Wiggins, 1989). The drive to enculturate youth, to expose them to knowledge deemed important by society, is so pervasive that it tends to displace thinking from the school agenda. An inordinate emphasis on student acquisition of products of authoritative inquiry (rather than student participation in inquiry) was observed in our research and serves as one of the major barriers to the promotion of students' thinking.[6]

Carl Schorske of Princeton University poignantly identified the tension between knowledge transmission and thinking:

> Do you regard "learning" as a noun or a verb? If as a noun, as a thing to be possessed and passed along, then you present your truths, neatly packaged, to your

> students. But if you see "learning" as a verb!--the process is different. (Boyer, 1987, p. 151)

In an environment of knowledge transmission, the assemblage of evidence and inferential thinking that undergirds the knowledge delivered is often ignored. Much like crossing a bridge, students see the road surface but not the pilings and support beams. Students are less likely to give reasons and explanations because the goal is to demonstrate comprehension of facts and concepts (i.e., products or "truths"), not the reasoning that validates them. Questions and solutions are not presented as problematic, nor are students required to interpret, analyze, or manipulate information in ways that go beyond the teacher's or text's presentation of it. History lessons that emphasize chronology are particularly prone to lower-order cognitive demands as students face an endless series of "then this happened" recitations. Duckworth (1987) articulates the opposition that can occur between knowledge acquisition and reasoning:

> In most classrooms, it is the quick right answer that is appreciated. Knowledge of the answer ahead of time is, on the whole, more valued than ways of figuring it out...knowing the right answer is overrated...Knowing the right answer requires no decisions, carries no risks, and makes no demands. It is automatic. It is thoughtless.

Transmission orientations to teaching and learning can be observed in the comments of two teachers in the research sample:

> I like to be in charge. I like to run the class. There probably would be more thinking if I talked less and let them think more. But many students like it when I talk, they say they understand it better that way.

> You know, we don't work to elicit the ideas and the strains of thought from students. We instead will say, "Well, I'm just going to tell them. I'll take a short cut." And that's a danger. It's an insidious thing that happens in teaching.

The perspective provided by the above teachers is shared by others. When asked if they found "exposing students to subject matter content (a) more, (b) less, or (c) equally interesting as developing student thought and reasoning", less than one in twenty teachers (4 percent) from the sample of 56 teachers selected the development of thought

and reasoning as more interesting. Almost one-third (30 percent) selected exposure to content as more interesting than developing student thought and reasoning (66 percent of the sample said equally interesting).[7]

Teachers' desire to transmit knowledge is deeply rooted. Their collegiate experience is typically dominated by instruction that emphasizes knowledge transmission through lecture (Boyer, 1987; Gross, 1989; Nicholls, 1984; Shaver, 1989). Nicholls (1984) describes this situation when summarizing the perceptions of British exchange instructors:

> ...there was an underlying consensus on the intrinsic features of the U.S. system of higher education. History courses...were organized around a lecture program and an accompanying text...while the information thus imparted was later "retrieved" by some "objective" test to measure just how much of it the excessively grade-conscious student had ingested...Education proffered in this way is in real danger of losing its original etymological sense of a "drawing out" and becoming much more of a "putting in." (Nicholls, p. 65)

Educational experiences of this kind reinforce through modeling the same instruction in the next generation of teachers.

After years of hearing declarative statements in the classroom, future teachers come to hold less-than sophisticated conceptions of knowledge. Rather than perceiving knowledge claims as open to debate and revision, knowledge is often viewed as fixed, absolute, and certain. While "facts" exist and consensus can be found on certain interpretations of events in history and phenomenon in the social sciences, more typically there exists disagreement and debate. Knowledge is continually being constructed, challenged and recast. But a steady diet of narrative, authoritarian accounts of subject matter from both college instructor and college text can produce uncritical consumers of facts, events, ideas, generalizations, and theories, the origins of which remain unexamined and unchallenged.

Alternative forms of instruction are necessary if the next generation of teachers is to appreciate and share with students an understanding of the interpretive nature of social science and historical inquiry (Boyer, 1987; Walsh & Paul, 1987). Sarason (1982) and Gross (1989) have noted the authoritarian orientation in many teachers' instruction:

> Although unverbalized, the ground rules were not difficult to discern. First, the task of the student was to get the right answer and this was more important than how one arrived at the answer. By "more important" I mean simply that the right answer was what teacher and student obviously treasured. Second, for any one problem or question there was a correct way of thinking about and answering it. Third, thinking was really not a complicated affair. (Sarason, 1982, p. 221)

> Many teachers...are encouraged in working with the impressionable youngsters under their control to act as living encyclopedias. Some of these individuals approach what sociologists have identified as "authoritarian personalities." Such teachers are threatened by being a learner among learners in a joint exploration of an unchartered enterprise. (Gross, 1989, p. 186)

In contrast, teachers aware of the constructive nature of knowledge attack transmission and absolutist conception of knowledge. One exceptional teacher discussed the negative effect authoritarian teachers have on the development of the good student-thinker:

> A good thinker isn't afraid if someone challenges a position. A good thinker is willing to take a look at someone else's hypothesis or theory even if it's 180 degrees apart from his own, rather than a dogmatic knower, someone who knows dogma. Most kids think they're suppose to be dogmatic because they think the teachers are. They're modeling themselves on teachers who they [students] think are dogmatic.

Another equally if not more important reason for the dominance of instruction by transmission involves class size and management problems associated with educating 25-40 students at once. The severity of this problem necessitates discussion of it below as a separate, dominant barrier.

Broad, Superficial Content Coverage

A second major barrier to thinking is the tendency to cover superficially a broad range of information and ideas with students (Newmann, 1988; Sizer, 1984). Social studies practitioners are expected to teach students to read, write, respect authority, to work hard, to be punctual, and to be good citizens. They are also required or pressured by

interest groups to expose students to content related to United States history, world history, global education, geographic literacy, cultural literacy, state history, local history, macro and consumer economics, environmental issues, multicultural awareness, social psychology, and law-related education.

Note that the barrier of excessive content coverage need not be linked to the barrier of knowledge transmission just discussed. One can imagine a teacher who experiences very little coverage pressure but who nonetheless consistently transmits information and ideas to students. Be it a few or many content objectives, the teacher who views learning as the acquisition of "nouns" (thought-products) and teaching as the transmission of them is unlikely to challenge students' thinking. This point was not missed by one outstanding teacher of thinking in our sample:

> you could survey all of American history in a boring, non-critical, non-thinking way or you could focus for the whole 18-week semester on the causes of WWII in a boring, non-thinking, non-critical way.

In practice, however, the coverage barrier is often observed in conjunction with the barrier of knowledge transmission. Why? When great value is placed upon the transmission and possession of knowledge, it is but a small step to also place great value on the quantity of knowledge possessed. Add to this the multidisciplinary, synoptic nature of social studies and the vast terrain of topics involved, and one finds teachers (and students) buried in a landslide of content. The drive to cover more and more content in turn reinforces instruction by transmission, because it is seen as the most expedient method to teach (though not necessarily learn) information and ideas. Therefore, one can say that the drive to transmit knowledge leads to a curriculum of coverage, and likewise, a curriculum of coverage necessitates knowledge transmission as the dominant form of instruction.

Why is extensive content coverage detrimental to the promotion of higher-order thinking? The attempt to implant vast amounts of information in the minds of students leaves little time for students to explore information, to reflect upon it, to recast it, to draw connections, to ask questions about it--in short, to think about rather than mindlessly absorb information. The coverage press often led teachers in our sample to ask questions that required only simple recall (you have it or you do not), and necessitated fast-paced question-and-answer sequences to get through the lesson material.

The vast number and variety of facts and ideas to be covered also made it difficult to develop lessons that exhibited internal coherence, and coherence between lessons. Paraphrasing Newmann

(1988), "there is little to probe or explore in a curriculum that is "a mile wide and a foot deep." In addition, the coverage press left teachers themselves with little time to share their own thinking with students, to acknowledge the problematic nature of solutions to problems and explanations to events, and to listen to and reward students' thinking.

Many teachers are well aware of the negative effect that coverage has on the promotion of students' thinking. When asked to identify the three most detrimental barriers to instruction for thinking, 39 percent of teachers in our sample included content coverage in their list of three barriers. Overall, the press of coverage was the fourth most frequently mentioned barrier identified by teachers (see Table 1).

Why are many teachers compelled to frantically race their students across miles of information and ideas rather than thoughtfully walk students across shorter stretches of content? Coverage-oriented teachers in the sample offered responses such as the following:

> I'm more survey oriented. There's a conflict in my head but I go for coverage. The kids like it, I like it, exposure is important. If they know a little, they can go on to further understanding themselves or in college.

> I'd like to cover some things in more detail but I had too many classes that I went through where the teacher never covered the material they were supposed to...Most of my students are going on to college and I don't want them getting into a college situation where they've never heard of Plato. Now they may have forgotten when they get there what his ideas were, but at least they'll say, "Oh, a Greek philosopher" and know a little bit about him.

Newmann (1988) provided insight on this question when he pointed out that even though the purpose of "education is, in a sense, to cover material--that is, to expose students to and make them familiar with new information," this fact has:

> fostered the illusion (firmly held by professional educators and by the general public) that it is possible to teach a reasonably comprehensive sample of all the worthwhile knowledge that is currently available (p. 346).

Table 1
Frequency of Barriers Mentioned As One Of The Three Most Detrimental Barriers To Instruction For Thinking (N=56 teachers)

Barrier	Frequency (%)
Lack of planning time	48%
Students (little motivation, lack thinking skills, knowledge, or capacity)	45%
Large class size	41%
Extensive content coverage	39%
Large total student load	29%
Lack of instructional materials that emphasize thinking	25%
Teachers' own lack of knowledge about teaching for thinking	14%
Short class length	11%
Twelve other barriers were mentioned that achieved frequencies of less than	10%

This belief or "illusion" is deeply entrenched in American culture. It will prove extremely difficult to modify, as possession of numerous, discrete, knowledge bits serves as the nucleus of the culture's conception of education itself. Familiarity with a wide range of information may be perceived by most in society to be a serious and difficult intellectual enterprise, but many cognitive psychologists, philosophers and educators see much knowledge acquisition as nothing more than the assemblage of "inert ideas" through "lower-order" memorization (Bloom, 1956; Duckworth, 1987; Newmann, 1988; Sizer, 1984; Whitehead, 1929).

Teachers' extensive exposure to superficial, breadth-oriented coursework in their own post-secondary education leads not only to a

transmission pedagogy, as was discussed in the preceding section, but reinforces a coverage "ethic" in their own teaching. This exposure also prevents many teachers from pursuing topics in-depth when they so desire. A number of teachers in the research sample expressed concern that though they might prefer in-depth inquiry, they would not know how to fill classroom time if coverage pressure were removed. These teachers simply did not believe they knew enough about topics or the inquiry process to sustain discussion for more than a lesson.[8]

According to teachers, other sources of coverage pressure come from state and national assessment instruments, state and district curriculum guidelines, and traditional textbooks. In our sample, many teachers (43 percent) found district and state testing to be "fairly" or "extremely" detrimental to their efforts to promote students' thinking. Thirty-nine percent of teachers reported that coverage pressure from textbooks and other instructional materials had a fairly or extremely negative effect on their efforts to promote student thinking.[9] Only 15 percent indicated that state and district curriculum guidelines negatively affected their efforts.[10]

Although the coverage drive, or "disease" as Newmann (1988) has labeled it, may be due, in part, to guidelines, textbooks and tests, interviews with teachers from the research sample indicated that coverage pressure was often self-imposed (Onosko, 1989). Most teachers did not directly experience accountability demands from tests and curriculum guidelines, nor were they required to use only the textbook. Instead, they were given wide discretion to determine what would be taught, how, and when. It seems that guidelines, textbooks, and tests were used by some teachers as an excuse to account for their breadth-oriented ways.

Interestingly, teachers most effective in promoting students' thinking expressed greater displeasure with external sources of coverage pressure (i.e., curriculum guidelines, state tests, the department chair, colleagues), were less willing to acquiesce to external coverage pressure when it did exist (Onosko, 1989), and were less likely to use textbooks in their classroom instruction than were their colleagues who were least effective in promoting student thinking (Onosko, 1988).[11] These differences seem to be linked to exemplary teachers' more sophisticated conceptions of thinking and greater commitment to the promotion of student thinking (Onosko, 1989; 1991). Teacher reflection on goals and the nature of thinking itself seems to serve as an internal check on external sources of coverage pressure, and help them justify a curriculum of greater depth.

Teachers' Low Expectations of Students

A third major barrier is teachers' low expectations of students. These negative perceptions on the part of some teachers assume a variety of forms, though the effect on classroom thoughtfulness is essentially the same. Low expectations of students leads to instruction in which factual information is emphasized because students are perceived to be incapable of succeeding with or unwilling to attempt higher-order challenges involving more complex information and ideas. Almost one-half of the teachers (45 percent) cited students as one of the three most detrimental barriers to thinking, second only to "lack of planning time" (48 percent) (Table 1). Classroom observations revealed that fact-driven instructional agendas not only curbed student opportunities to do higher-order thinking, but negated opportunities for teachers to model higher-order thinking.

What is the basis for many teachers' low expectations of students? Some teachers assumed that students lack the inherent mental capacity to engage in higher-order thinking, especially students labeled low achievers or low ability. One teacher stated:

> Given the constraints that are inherent in teaching lower ability students I am satisfied with the materials, content, skills, and teaching techniques that I use...I think it is unrealistic for anyone to expect consistent higher order thinking from these students...These students usually think and operate on a very concrete level...basically I would need to teach Advanced Placement students.

Keating's (1988) review of the research literature on adolescent thinking uncovered no support, however, for the argument that students lack the cognitive capacity to successfully engage in higher-order thinking. Because higher order thinking is a relative rather than an absolute concept, all students regardless of cognitive capacity can, in theory, be given a problem or task that involves them in higher-order thinking.

For some teachers the "problem" is not to be found in students' inherent mental capacity, but rather in students' underdeveloped cognitive skills due to deficiencies in students' prior educational experiences. A teacher expressed this perspective in the following way:

> They [students] are not used to thinking--they have not been required to think...I don't know what they are doing [in the lower grades] but my guess is that everybody gets an award and everybody gets patted on the back, and I'm not sure if people are really checking

> development along the way...so there is a point beyond which their reasoning skills are going to stop.

When students are perceived to lack thinking skills, many teachers are less likely to craft lessons that require higher-order thinking. Note, however, that teachers who avoid instruction for thinking and hold this perception of students are admitting (tacitly or overtly) that they are unable or unwilling to help students reduce this skill deficit.

Other teachers cited deficits in students' knowledge as the reason for their poor performance on thinking tasks. This perception often led to extensive and at times tedious presentation of "the facts" before students were allowed to think about the material. One teacher stated:

> I'm dealing with Level 2 students...You've got to build up information first, and that takes such a long period of time.

One of the finest teachers of thinking in our sample expressed disgust at this approach:

> Low level kids spend years on recall because "they still don't know enough"--BS!...All learning and thinking should begin with high level questions...When students are actively pursuing whole, meaningful tasks, they will naturally use all the skills in Bloom's taxonomy....

A number of teachers expressed frustration with students' low motivation (if not outright resistance) to entertaining thinking tasks. Over one-half of those in the sample (56 percent) claimed that student resistance had a fairly or extremely negative influence on the teachers' ability to promote students' thinking. Two teachers in our sample offered these observations:

> Students have changed over the years. They are just not willing to put much effort into school. Their attention span is short and they are apathetic. If they were taught to think in the elementary grades there is no transfer to high school.

> What is most disappointing is that the students aren't interested in learning. Most of them care nothing for learning...They are just not willing to put much effort into school. Their attention span is short and they are

> apathetic...High achievers can be just as apathetic as low achievers.

Shaver et al., (1979) noted that "teachers generally do not make the possible connection between the lack of motivation on their students' part and their own reliance on textbook/content based, teacher dominated instruction" (p. 152).

Teachers' low student expectations are also a consequence of content coverage. In a coverage curriculum, students are rarely afforded opportunities to display thoughtful orientations to subject matter, and that can lead to a deteriorating cycle. Students become frustrated and bored with the memorization of content. Student performance falters and the teacher assumes deficient student mental capacity, skill, background knowledge or effort to engage in thinking. Having concluded that students cannot or will not think, greater emphasis is given to tasks requiring only lower order thinking. The combination of coverage and lower order thinking tasks further disengages students academically; and so on.

Rather than give up on students with less than stellar records of performance, outstanding teachers of thinking accept the challenge (Onosko, 1991). These teachers support, encourage and prod students to discover their intellect. One outstanding teacher explained that she does not accept "I don't know" responses from students:

> I let them know at the beginning of the year that an "I don't know" answer is completely unacceptable, that I will not go away until they get it right...after a few successes they want to be called on.

Another outstanding teacher offered the following perspective:

> Most students like to think, in all levels. They resist more in writing than orally. Many have been trained to regurgitate history and they need to be retrained, so there may be initial resistance, but it can be overcome through teaching. Resisters will moan and groan as you push them, but eventually they'll thank you for it...I roll with the students who are thinking. It does become contagious...It's really up to the teacher to make thinking a pleasurable experience.

Large Numbers of Students

Large numbers of students per class (class size) and large numbers of students overall (total student load) inhibit the promotion of thinking (Cuban, 1984b; Cuban, 1991; O'Reilly, 1991; Shaver, 1980).

Large class size engenders real and imagined classroom management fears on the part of teachers, especially when leading whole group discussions. Students often display frustration when having to wait their turn to speak. Teachers are afraid to undertake an extended probe of a student's idea for fear of "losing the rest of the class." Lengthy responses by single students can also lead their classmates to "tune-out" and exhibit off-task behavior. Teachers also curb time for silent reflection out of fear that "brushfires" of off-task behavior will ignite during these moments of silence. It is not surprising that 73 percent of teachers identified large class size as either fairly or extremely detrimental to the promotion of thinking. When teachers were asked to identify the three most critical barriers to instruction for thinking, class size was the third most frequently cited barrier (41 percent).

The difficult task of monitoring numerous small group discussions in classes of 25-35 students or more triggers similar management concerns. Large numbers of students can reduce the quality of and frequency with which some teachers are willing to hold discussions, whether teacher-directed large group or student-centered small group. Large class size thus helps to reinforce knowledge transmission forms of instruction, as the teacher can more readily control the classroom environment by disseminating information to students. One teacher communicated these concerns:

> When class size goes over a certain amount, you lose the ability to promote thinking. You feel frustrated. The demand is there to be more authoritarian...Smaller classes, even with students of diverse ability, allows teachers to use different techniques and methods. Control is less of an issue.

Smaller class size is especially important for teachers who want thoughtful classrooms, because tasks that involve students in higher-order thinking can create unique management problems. Research indicates that management concerns increase as the cognitive demands placed on students increase (Doyle, 1983). Higher-order thinking tasks place students at greater risk of failure and at higher levels of frustration, because these tasks require students to construct solutions rather than routinely or algorithmically apply information. The potential for off-task behavior increases, as does the likelihood that students will attempt to reduce the difficulty of the task through negotiation with the teacher (McNeil, 1983). As one teacher explained:

> Most students like to be in a "comfort zone" that requires few risks and assignments that are not difficult. I suspect students always have. Thinking

> about concepts, alternatives, situations, etc. provides too many opportunities involving risk. They are less comfortable when they don't know what I am going to ask, and when I ask them to defend what they say, or find fault with something I say. You lose the opportunity to blend in with the crowd. What if I'm wrong, what if everybody laughs at me, what if they think my ideas are weird? It's a tremendous risk.

Student resistance to tasks involving higher-order thinking can be checked if teachers assume the role of a coach, providing encouragement, support, and constructive feedback to individual students to insure continued and confident effort. Relatedly, the construction of an intimate, nurturing environment in which students feel safe to share their ideas and beliefs also reduces the likelihood of resistance. Creating a safe learning environment and acting as a coach are more difficult to accomplish when working with large numbers of students.

The classroom practices of outstanding teachers in our sample demonstrate that with great effort higher-order thinking can take place with large numbers of students (Onosko, 1990). By establishing certain behavioral expectations, constructing a nurturing learning environment, carefully planning the degree and type of cognitive challenge, and employing a variety of questioning techniques and motivational strategies, outstanding teachers of thinking are able to jump-start the mental engines of large numbers of students.

Large total student load can also negatively affect the quality and frequency of teachers' efforts to promote students' thinking, especially in the area of written discourse. This is unfortunate as written expression makes "logical implications of statements more detectable" and, overall, serves as "a powerful intellectual tool" (Olson, 1977). Teachers need time to respond to students' writings. If a teacher with a total student load of 125 was to assign a two-page essay every week, and only 15 minutes were allocated for reading and reacting to each essay, the teacher would be faced with over 31 additional hours of work per week. This may explain why 66 percent of teachers identified total student load as a fairly or extremely detrimental barrier to thinking, and why total load was the fifth most frequently mentioned barrier overall (Table 1). This may also explain why written work, other than class notes and worksheet responses, was rarely observed across the entire sample of teachers' lessons (Newmann, 1990b). One teacher expressed frustration with student load this way:

> I have 186 students. How can you teach that many? I'm tired at the end of the day. It takes forever to grade papers and I'm not willing to go home and spend 4 hours a night grading papers. I'm here at 7:45 until 4:45. I do have a wife and other things to do. You wind up giving a lot of objective tests and you can't give immediate feedback.

The problems identified here with respect to class size and student load underscore the need to inform policy makers and community members of the importance of reducing these numbers if more teachers are to develop good student-thinkers. While outstanding teachers of thinking are able to overcome problems associated with large class size, without a reduction in total student load it is unlikely that even the best teachers will devise ways to consistently react to students' written expressions of higher-order thinking.

Lack of Teacher Planning Time

Another organizational barrier to instruction for higher-order thinking is minimal planning time allotted teachers (Cuban, 1984a; Cuban, 1991; Gross, 1989). In traditionally organized schools, one 45-minute time block is typically allocated for teacher planning. In that single period teachers of thinking face an awesome task. Due to the inadequacies of textbooks, teachers must venture to the library to find, read, and then modify and photocopy reading materials for upcoming lessons. They must also review or acquire initial understanding of the ideas and issues to be discussed in each course (usually two to three different course preparations each day), and then apply their pedagogical knowledge to the content of each course to craft lessons that promote higher-order thinking. At the same time, they must begin to map out the direction of upcoming units. Very little of the above can be accomplished during this brief time block.

Under these time constraints many teachers must settle for the textbook's presentation of the material. The text rarely offers the same degree of challenge as supplemental sources, sources which often contain competing perspectives and more sustained arguments. In addition, the limited time for teachers to familiarize themselves with topics reduces their ability and desire to lead discussions and to offer students tasks that challenge their thinking. Lack of planning time drives many teachers to the safety of instruction by transmission, where simplistic understanding is emphasized and the teachers' underdeveloped content understanding is more easily masked. The low-level cognitive demands characteristic of these classroom sessions offers students fewer opportunities to develop and share their thinking and reasoning.

Not surprisingly, lack of planning time was most frequently identified by teachers (48 percent) as one of the worst barriers to their efforts to promote students' thinking (Table 1). On another questionnaire item that explicitly targeted the barrier of planning time, 73 percent of the teachers identified lack of planning time as either "fairly" or "extremely detrimental" to the promotion of students' thinking. The following thoughts on planning time were offered by two teachers:

> I believe that if I had the time...I could develop some ideas that would make my teaching for thinking much more effective. I think there are suitable materials available--you just need the time to locate them and adapt them to your needs.
>
> Sometimes I feel like a composer who cannot put the notes on paper quick enough. Often I am too tired to put them down on paper. Mostly I am frustrated by time and the demands placed on me...time needs to be set aside for reevaluating goals, objectives, and options for world history....We need one more preparation period per day so I can work with other teachers.

In a study of 25 staff developers working to help teachers improve their instruction for thinking, more staff developers (68 percent) identified insufficient planning time as a barrier to improved practice in the area of thinking than any other barrier (Newmann, Onosko & Stevenson, 1990). Limited planning time not only affected the planning efforts of teachers individually, but made the exchange of ideas and practices between colleagues very difficult. The fact that department members often did not share the same planning period during the day further undermined opportunities for collaborative unit and lesson planning, and eliminated chances for peer observation. As a result, to work collaboratively teachers had to meet before or after school, and the school administration had to be willing to provide substitute teachers or devise some other support system to enable teachers to leave their classes to observe the instruction of colleagues.

Without additional planning time, it is unlikely that most teachers can sustain the necessary time commitment outside of school to consistently construct lessons that challenge students' thinking and to react to students' written expressions of thought.

A Culture of Teacher Isolation

The last major barrier is the culture of isolation common to many departments and schools (Bullough, 1987; Little, 1990; Sarason,

1982). Teachers spend their day with students, not fellow teachers. Teachers operate in isolation from one another, much like separate galaxies in a vast universe of instruction. This isolation severely limits their access to the curricular and instructional ideas of colleagues, and shields them from both constructive criticism of and recognition for their instructional practice. Opportunities are not available to discuss with colleagues broad department goals, course goals, general instructional techniques related to thinking, and specific ideas and issues regarding subject matter and strategies to address this content with students. All too often outstanding teaching techniques and superb lesson and unit ideas, while only a classroom wall or partition away, are not shared among colleagues. Such a culture does not encourage or promote collective action even though teachers frequently face very similar instructional concerns. Some members are able to develop into outstanding teachers in this environment but most cannot. Comments from two teachers provide poignant examples of teacher isolation in school culture:

> I learned much from my colleagues by accident when, because of the district K-12 planning exercise I had to get our department members to write out their central objectives. When I read all this I was really proud. Here we've been teaching for 20 years and have never really shared these main ideas behind our teaching. We've taught in the same building, but really don't know what one another is doing.
>
> There are two people I look to for sharing ideas...Many other teachers in the department probably support higher order thinking, but because there is so little sharing, I never get the benefit of it.

Forty-eight percent of teachers in the study spent less than one hour per week with colleagues discussing educational concerns of any kind. The sharing of an instructional technique occurred less than once every two weeks for 43 percent of the teachers, and an even greater number (52 percent) shared curriculum materials less than once over this same time span.

Immersion in a culture of isolation can lead some teachers to withhold from colleagues their "hard earned" instructional ideas. Isolation fuels an atmosphere of individualism, noncommunication, and at times competition. One department chair referred to teacher behavior of this kind as "the lone ranger syndrome." A culture of isolation also contributes to the development of indiscriminate, uncritical attitudes toward instruction; that is, a norm that teachers

should show respect for the practices of their colleagues regardless of their colleagues' classroom effectiveness. The implicit rule is, "you don't bother me, I won't bother you." Little (1990) attributes this orientation to the "norms of privacy and non-interference." Department-wide efforts to improve methods of instruction for higher-order thinking are unlikely to occur when norms such as these are accepted and operating.

Select departments in our study, due in large part to principal and departmental leadership (King, this volume), have with some success attacked this problem and have created a culture of communication rather than isolation. Teachers moved from the presumed safety of isolation, to the professional practice of discussing broad departmental goals and assumptions, to discussing unit and lesson content, to sharing (and debating) instructional strategies, to, finally, observing and discussing actual lessons through peer review. This communication, involving increasing levels of collaboration, scrutiny and personal risk, provided opportunities for teachers to receive recognition for and confirmation of their teaching. It provided opportunities for teachers to see alternative approaches to instruction and to debate which instructional format or sequence of activities would most effectively engage and challenge students' thinking. In such departments, a collective vision, identity and knowledge base emerged, all focused around the goal of promoting students' thinking.

Conclusion

Though presented as separate and identifiable, these barriers are interconnected. Large total student load and large class size limit opportunities for thoughtful interaction between teachers and students, which, in turn, contributes to low student expectations on the part of teachers. Instruction by transmission tends to foster a curriculum of coverage, and in reciprocal fashion, the demands of content coverage necessitate instruction by lecture (transmission) to ensure that everything gets covered. Little planning time for teachers to exchange ideas with colleagues helps to ensure the continuation of a culture of isolation and traditional methods of instruction. Many additional linkages between the barriers could be identified.

Because these barriers are connected, it would appear that reformers interested in placing greater emphasis on the promotion of student thinking need to consider all of the barriers in a comprehensive plan of action. Barriers that are ignored may significantly reduce the effectiveness of the reform effort. For example, through a reform effort teachers may come to develop elaborate conceptions of thinking and hold high expectations for students. Yet the effect on classroom practice with respect to thinking may be modest at best if teachers continue to

cherish content coverage or are given minimal planning time to change curricular and instructional practices. Likewise, breaking down teacher isolation and reducing student load may have limited impact on instruction for higher-order thinking if teachers maintain low expectations of students or continue to regard teaching as the transmission of information and ideas.

If, indeed, the barriers are interconnected and all need to be addressed to achieve significant and sustained improvement in the promotion of students' thinking, then it may be an academic exercise to determine which of the barriers are most detrimental. Likewise, linkage among the various barriers suggests that there is no logical or necessary sequence with which to attack the barriers. Some departments and schools may want to begin their change effort by having teachers conceptualize thinking, others may want to address the issue of content coverage, while others may tackle the problem of instruction by transmission and teachers' low expectations of students. Further study is needed to determine (a) the extent to which barriers are inextricably linked, (b) if the barriers are equally detrimental, and (c) whether or not a specific sequence of attack is advantageous.

Due to the instability and uncertainty in the process of school change, we can assume that successful interventions will experience some "backsliding" and will therefore need to return to barriers already addressed. The struggle to ensure that students are challenged to think will be a never ending process.

Endnotes

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[2]As quoted in Hoetker & Ahlbrand (1969), p.153.

[3]As quoted in Hoetker & Ahlbrand (1969), p.159.

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[4]Broader, societal barriers that negatively effect student motivation and achievement such as various forms of family dislocation, anti-intellectualism in mainstream culture, and poverty and unemployment, to name a few, will not be addressed in this paper. Clearly, these barriers also need to be addressed to maximize students' higher order thinking.

[5]Details of the methodology used in the study can be found in Newmann, Onosko, & Stevenson, (1990).

[6]The distinction suggested here between student exposure to products of thought versus student production of thought is not intended to minimize the importance of content, nor should the distinction be viewed as a variant of the enduring but misguided "content vs process" debate. As stated previously, higher-order thinking requires both in-depth knowledge and cognitive skills (and dispositions related to thoughtfulness). In addition, exposing students to products of thought and other forms of direct instruction are not anathema to the thoughtful classroom. Often it is necessary for teachers to provide information and explain ideas to students before students can solve a problem or take a position on an issue.

[7]Due to missing data the actual number of respondents was 48.

[8]The work of Weaver, Jantz, Farrell & Cirrincione (1985) supports these findings and uncovers additional reasons why teachers do not more regularly employ inquiry-based instructional approaches. The primary reasons identified by a sample 202 teachers include the following: teacher training programs failed to prepare teachers to use inquiry, college methods instructors emphasized theoretical rather than practical aspects of the inquiry approach, students had difficulty with inquiry, and teachers prefer the structured organization of textbooks to the conceptual organization common to inquiry.

[9]Based upon our research in one New York school, the state's Regent Exam places substantial coverage pressure on teachers' instructional efforts. At this particular school, teachers were held accountable for student success and failure even though students' prior social studies experience strongly influenced test results. Due to this accountability, laborious cram sessions replaced normal instruction for approximately two months prior to the exam.

[10]The work of Tyson-Bernstein (1988) indicates that fragmented, fact-filled textbooks common to today's publishing market result from publishers' efforts to comply with the balkanized guidelines devised by most state and district curriculum committees. This suggests that even though teachers are more likely to cite textbooks as a source of

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Endnotes (continued)

coverage pressure, curriculum guidelines may underlie the textbook problem.

[11]These findings were based on a 10 teacher subset of the full sample. Work is presently underway to test these findings on the full sample.

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LEADERSHIP EFFORTS THAT FACILITATE CLASSROOM THOUGHTFULNESS IN SOCIAL STUDIES[1]

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Abstract

This paper investigates the ways in which department chair and principal leadership can influence the teaching of thinking in secondary Social Studies classes. Based upon research in 16 high schools, leadership efforts in the areas of curriculum program development, faculty collegiality, staff development, and school culture are explored. Instructional leadership at the department level that generates a common vision around a shared conceptualization of thinking, combined with curriculum development within a culture of collegiality and attention to teaching and pedagogic strategies, seemed to facilitate improved levels of classroom thoughtfulness in high school social studies classes.

Introduction

Policy makers and researchers have argued that curriculum and instructional leadership can have a substantial impact on effective teaching and learning in schools (e.g., Peterson, 1989; Newmann, 1988a). This paper is a report of an investigation of the ways in which department chair and principal leadership can influence the teaching of higher order thinking in secondary social studies classes. Based upon classroom observations and interviews with teachers, department chairs, and principals in 16 high schools, leadership efforts that help overcome the barriers to classroom thoughtfulness discussed by Onosko (this volume) will be examined.

In this investigation, the departments which were most successful in promoting classroom thoughtfulness are compared to those which were least successful. In comparing the top departments with the bottom departments, I ask whether the two groups are distinguished by leadership efforts that contribute to a greater emphasis on thinking. The top schools are defined as those whose average scores on classroom thoughtfulness (HOTAV) are more than one standard deviation above the mean for all schools (see Table 1). These include three "select" schools: Grandville (4.05), Carlsberg (4.04), and Arnold (3.85). The bottom schools are defined as those schools scoring more than one standard deviation below the mean for all schools. These include four "representative" schools: Erskine (2.88), Downing (2.92), Wadsworth (2.93), and Pierce (2.94). Interestingly, none of the four "restructured" departments appear in the top or bottom group. As Ladwig (this volume) argues, this may be due in part to the wide variety of programmatic restructuring evident in these schools and the pursuit, through restructuring, of educational goals other than higher order thinking.

In this article, I will describe leadership activities in the top three and bottom four schools according to three general categories: goals, curriculum, and pedagogy. Each area will be examined separately, but any given leadership activity could address two or more areas. Efforts which represented more integrated approaches to school improvement will receive special attention.[2] Table 2 offers a summary of the salient activities in each area which were exhibited in the top and bottom scoring schools. Rather than discussing the table explicitly, it is offered as background for identifying the activities of each school. Discussion of each of the three areas concludes with an interpretation of how leadership activities helped to overcome barriers to the promotion of higher order thinking.

Goals

Secondary schools have multiple and often competing goals. Thus, a clear, and shared, sense of mission may be elusive. Additionally, social studies itself presents particular challenges to developing a cohesive departmental purpose because it is comprised of multiple disciplines that have varying perspectives on sophisticated or critical thinking, in addition to the pressure to cover large amounts of content (see Newmann, 1988b).

Departmental Focus—The Bottom Schools

None of the four schools that scored at the bottom of our sample exhibited a common educational vision for social studies instruction

focused on promoting students' thinking. Department heads cited "responsible decision-making," "to think and interpret in a historical

Table 1
Departmental Mean HOTAV Scores and Standard Deviations According to Sample Set

Select Departments (N=90 lessons)	Mean	SD
Grandville	4.05	(.57)
Carlsberg	4.04	(.47)
Arnold	3.85	(.65)
Bradley	3.48	(.75)
Scarborough	3.22	(.56)
All Select Departments	3.73	(.33)
Representative Departments (N=125 lessons)	**Mean**	**SD**
Vander Meer	3.63	(.84)
Newcombe	3.35	(.84)
Mathewson	3.13	(.96)
Pierce	2.94	(.83)
Wadsworth	2.93	(.98)
Downing	2.92	(.41)
Erskine	2.88	(.88)
All Representative Departments	3.11	(.26)
Restructured Departments (N=72 lessons)	**Mean**	**SD**
Williams	3.72	(.68)
Carter	3.56	(.51)
Nelson	3.36	(.90)
Shaw	3.35	(.78)
All Restructured Departments	3.50	(.15)
All Departments	3.40	(.38)

Table 2
Leadership Efforts and Classroom Thoughtfulness

Focus	Schools
Goals	
1. a. Shared goals, common vision	G, C, A/W[b]
b. Common conception of HOT[a]	G, C, A
2. Visits to other programs, participation in workshops with emphasis on HOT	G, A/E, P
3. Technical assistance, consultants, or staff developers	G
Curriculum	
1. Curriculum development, on-going revision	All/All
2. a. DH involved in curriculum planning	G, C, A/P
b. with focus on HOT	G, C, A
3. Principal involved in curriculum planning, with HOT focus	C, A
4. a. Peer or Team planning	G, C, A/D
b. with focus on HOT	G, C, A
Pedagogy	
1. a. DH observes/supervises	G, C/All
b. with focus on HOT	G, C/P
2. a. Principal observes/supervises	C, A
b. with focus on HOT	C, A
3. Peer observations	G, C
4. Demonstration Lessons	G, C

[a]HOT=Higher Order Thinking;
DH=Social Studies Department Head

[b]Top Schools: G=Grandville; C=Carlsberg; A=Arnold
Bottom Schools: E=Erskine; W=Wadsworth; D=Downing; P=Pierce

context," and "skills to use knowledge in decision" as part of their educational objectives, but these had no more priority than other major objectives (e.g., "to promote social interaction skills"). Instructional leaders in these four schools were, for the most part, inactive in trying to generate support for and commitment to the goal of teaching

thinking. The principal at Downing, for instance, stated that the goal of promoting thinking is really a question of faculty commitment, but she suggested that she did not know how to generate that commitment: "I wish I had a magic wand!" She admitted that theoretically she should have a great deal of influence on teachers, but because of her belief in faculty ownership she is to a degree paralyzed as to how to encourage change. "There is a possible conflict between the leverage I have (for promoting change) and my philosophy that the staff must have ownership."

Wadsworth High School, one of the low scoring schools, offered an example of how department members can share common concerns without developing a substantive educational vision. This school located in a small midwestern city enrolls about 1500 students; half are students of color, the other half white, with 16% from low income families, and only 25% of the graduates go on to a 4-year college (the lowest percentage of the seven schools considered here). The department chair's statement regarding a shared vision within his department reflects the difficulties of teaching in this school, "Probably the single most important thread that binds the department together is a concern for the welfare of the student and an attempt to help solve some of their emotional problems." Two of the three teachers we interviewed voiced similar views. Although the department's concern for the "whole student," for their "emotional as well as academic progress," and for "building their self-confidence" reflects important concerns and reveals a sincere desire to reach this group of students, this vision is too broad to generate excitement about specific intellectual or educational goals.

Departmental Focus--The Top Schools

Findings from the top schools, in contrast, indicated that a common educational purpose to enhance students' thinking across the different courses in a department can be generated. Instructional leadership played a significant role in articulating and working toward a shared sense of mission. These three schools are considered next.

At Grandville High School, efforts to develop a program to promote higher order thinking in social studies under the leadership of the department chair, who also serves as district social studies coordinator, had been on-going for the 4 years prior to our study. The district clearly supported this emphasis on thinking throughout the entire K-12 social studies curriculum, as exhibited through allocation of additional funds and supplementary teacher release time to work on program development. Through our interviews, it was clear that there was a general consensus among department staff that the development

of critical thinking was *the* major goal of the school's social studies curriculum.

A slightly modified version of Bloom's taxonomy served as the conceptualization of thinking that guided the department's work. To implement this conceptualization, the staff developed generalizations, concepts, and themes for all required courses in the department. This consensus on thinking, both on the goal and the conceptualization, was reflected in the staff's rhetoric and in their pedagogy. Of course, variations were evident in the explicitness with which the model directed classroom practice. For example, one of the teachers we observed specified to the class in each lesson the particular thinking skill on which the lesson was to focus. Another made no explicit reference to the various skills but instead used the model as a heuristic aid to curriculum and instructional planning; that is, he developed questions for each lesson at the various levels of Bloom's taxonomy. In spite of variability in attention in the classroom to particular thinking skills, the high school social studies staff did share the goal of, and a model for, promoting students' thinking. As we will see, the character of the department members' work on curriculum and instructional approaches at Grandville contributed to and elaborated their focus on thinking. In this sense, the common vision within this department evolved from the direct participation of the staff -- in school visits, workshops with consultants, and team planning sessions -- rather than being mandated from the top. The department chair here was active in keeping this focus at the forefront of the staff's efforts.

In contrast to Grandville's focus on the whole social studies program, the work at Carlsberg concentrated on the individual lesson. The significant aspect here seemed to be the `lesson formula' or format that was developed and continually emphasized by the department chair. Each lesson contained a problem or question that students were to answer. The problem was usually an evaluative question that required students to take a stand and offer supporting evidence in a large group teacher-centered discussion (e.g., "Did the framers of the Constitution have the good of the country or their own interests at heart?"). The lesson model also called for an engaging introduction to encourage student participation in discussion. Lessons were designed to be completed within one class period. In the common vision within this department, then, teaching for thinking and good social studies lessons were not distinguished: both were assumed to include thought-provoking questions and class discussion.

The department chair at Carlsberg, with reduced teaching responsibilities (only one class), manifested coherent and purposeful leadership that perpetually focused staff work on the thoughtful lesson format. The staff shared this commitment, facilitated by the fact that many members of the department had worked together for 17

years under the leadership of the department chair. As one teacher expressed it, "[The department chair] has been here when most of us were young. He had the chance to mold us." The longevity and stability of the social studies staff, combined with a model of good social studies instruction that was centered on thought-provoking questions and problems, helped to generate a common educational vision at Carlsberg.[3]

At Arnold, the department chair, together with another social studies teacher, pioneered the development of an eclectic approach to teaching thinking which he called the "Integrative Mind Instructional Model." The emphasis here was on giving students a central task or problem to confront, often featuring metaphors and analogies which students create, discuss, and use. The model also included a focus on curriculum continuity and integration within a course, unit, and lesson and between courses. The content was unified around a central theme or themes and questions. The social studies staff shared a commitment to his model; much of their shared emphasis stemmed from their collaborative work on curriculum, as we shall see in the next section.

Staff Development

Staff development may be an effective tool to reinforce and enhance the goal of higher order thinking in social studies. Technical assistance from consultants outside of the school or district is at times necessary to generate interest and commitment to particular educational objectives. Staff developers in the area of teaching for thinking, however, agree that technical assistance "must be supplemented by ongoing institutional support for teachers to work collaboratively in their own schools on the difficult issues entailed in teaching for higher order thinking" (Newmann, Onosko, & Stevenson, 1990, p. 55). Comparing staff development at the top and bottom schools provides further evidence on the ways in which instructional leadership can contribute to a shared commitment to promoting students' thinking.

Pierce High School, one of the low scoring schools, had officially recognized critical thinking as one of the important educational goals for the entire curriculum, and sponsored ongoing in-service in collaboration with a nearby college. The program was in its third year during the time of our study. Teachers from various departments throughout the school attended summer institutes at the college and then shared their experience with school colleagues in the fall. Institute meetings focused on the practical application of critical thinking to the classroom and on the construction of tests. All three of the social studies teachers interviewed at Pierce commented on the effectiveness of the institutes and how they illustrated administrative support for the goal higher order thinking. The department chair

clearly supported the institutes and encouraged teachers in the department to attend. But the institutes were oriented across all subject areas and, as we will see later, were only sporadically connected to a focus on thinking in the social studies department's curriculum revision or the supervision of teaching.

The school district where Erskine High School, another of the bottom group, is located sponsored a voluntary in-service program for all district teachers on critical thinking three years prior to our study. Two of the social studies teachers (20% of the department staff), one of whom also serves as department chair, attended the workshops. In our interviews with these teachers, they both indicated the positive impact of the workshops on their teaching; however, there had been no further staff development efforts in the department, school, or district that were focused on promoting thinking. Here, staff development, although focused on the teaching of thinking, was infrequent, was school-wide rather than department based, involved only a small percentage of the social studies teachers, and was not connected to other efforts in the department such as curriculum development.

Staff development efforts at two of the top scoring schools differed significantly. At Grandville, the department chair took a two-tiered approach to staff development. First, social studies teachers visited nine other schools in the area for the specific purpose of observing the teaching of thinking and discussing with other staffs their efforts in this area. The visits occurred in 1982 when the department was just beginning to emphasize thinking. Teacher release time was secured for these visits. This activity gave staff a sense of purpose and accomplishment, especially because, as a result of the visits, they could see that they had made significant progress compared to other schools. The visits seemed to foster further interest and engagement in their work on critical thinking. In addition, the department chair also solicited the assistance of a number of consultants to work with the staff. This included a proponent of a particular conceptualization of thinking and model for teaching thinking that had been adopted by the department as well as other staff developers to help staff identify concepts, themes, and generalizations that would structure the social studies courses. Thus, work with consultants was closely linked to the continuing efforts of the department's staff in the areas of curriculum and pedagogy.

At Arnold High School, participation in a national critical thinking conference by the department chair and two other social studies teachers was the catalyst for the development of the model of thinking that has served to guide the staff's efforts to promote thinking. Follow-up work in the department, particularly team planning of course curricula and lesson design, was built from this model. The department chair, along with one of his social studies

colleagues, has also given workshops at other schools on this approach to promoting thinking.

Summary

The social studies departments in the three top schools exhibited a common vision on the promotion of students' thinking and have adopted and operationalized some conceptualization of thinking or model of teaching thinking for realizing this goal. In two of the schools, staff emphasized a central problem or task for particular lessons while those in the third concentrated on developing concepts, themes, and generalizations for their courses. Although the conceptualization of thinking and the models for instruction differed between each school, it seems reasonable to conclude that leadership efforts that foster a shared commitment to thinking and a workable model for teaching thinking may be more important to success in this area than adopting any one particular model or approach to thinking.[4] The focus on thinking was *department based*, not school-wide, with active direction from the department head in all three schools.

Staff development efforts in two of the top schools seemed to support the focus on thinking. The work at Granville and Arnold concentrated on the department level whereas those of the bottom schools, even though focused on higher order or critical thinking, were directed toward staff throughout the school. The importance of leadership focused on the department level will be highlighted throughout this analysis. Secondly, conference participation, in-service programs, or school visitations centered on the conception or model of thinking adopted by the department, and leaders made explicit connections between staff development efforts and teachers' collaborative work on issues involved in pursuing the goal of promoting students' higher order thinking.

The leadership efforts in the most successful departments outlined here appear to confront some of the major barriers to promoting classroom thoughtfulness. The common departmental vision, reinforced through staff development and collaborative work among department teachers, may have helped to overcome individual teacher isolation commonly characteristic of a school's culture, although, as illustrated by Wadsworth, a shared purpose in and of itself does not necessarily lead to the pursuit of substantive educational goals. Each of the top departments exhibited a conception of thinking which shifted instructional emphasis from knowledge dissemination to inquiry and problem solving. This emphasis may help to overcome the pressure to cover vast amounts of content that often serves as a serious barrier for many teachers. The endorsement by the department chair seemed to be a critical aspect of this emphasis at each school. It also seems

reasonable to assume that the commitment to teaching thinking within the department helped to generate the expectation among teachers that students can and should be challenged to think regardless of prior achievement or ability level.

Curriculum

Curriculum development occurred in each of the schools we studied. The top three schools directed this work explicitly at enhancing students' thinking. In contrast, the four schools at the bottom had other instructional goals to guide curriculum work or involved only a few teachers, rather than the department as a whole, who were interested in curriculum revision to enhance students' thinking.

Curriculum Revision–The Bottom Schools

At Pierce, one of the low scoring representative departments, curriculum revisions were submitted to a school-wide curriculum committee for review, but no projects in social studies were focused on higher order thinking, according to the department chair. This is interesting since Pierce was involved in a critical thinking in-service project with a nearby college. The department chair and staff failed to identify thinking as a central goal and make an explicit connection between teachers' work in the in-service project and curriculum development.

At another of the representative schools, Erskine, the department head clearly advocated the teaching of higher order thinking and wanted to see it reflected throughout the social studies curriculum. She suggested that the new curriculum for the required freshman course, History of World Civilization, which she developed in conjunction with two other teachers, incorporated topics and strategies to promote students' thinking. The low scores from observations of this course, however, suggests that curriculum revision by only a small percentage of the social studies staff (3 of 10) was insufficient to generate much success in promoting classroom thoughtfulness.

Curriculum Revision –The Top Schools

These findings contrast sharply with those from the three select departments where curriculum work was undertaken as an important mechanism for facilitating classroom thoughtfulness, and where both department heads and principals provided direction. At Grandville, the social studies staff, under department chair leadership, revised the required U.S. history course to incorporate their focus on thinking. Lesson plans were formulated, demonstration lessons were taught, new curriculum materials were ordered, and

criterion-referenced tests were designed to be used in classes -- all with a focus on thinking. Staff development efforts mentioned earlier, such as gaining assistance from outside consultants, were incorporated in this work. At Carlsberg, with their focus on the individual lesson, groups of teachers designed new lesson plans during common planning periods and, along with the department head and principal, taught and critiqued demonstration lessons. A resource file was established where typewritten lesson plans were made available to all department staff. At Arnold, the department head organized curriculum planning groups aimed at incorporating the department's model of thinking. In each of these schools, curriculum development was explicitly focused on higher order thinking.

In all three schools with the highest levels of classroom thoughtfulness, the department chair took an active role in curriculum planning. At Grandville, planning was done in teams of teachers who had the same course and the same grade. These teams met during a common planning period and the district made funds available for them to also spend 2-3 weeks together during the summer. The department chair here, teaching only one course per semester, was involved in his own planning team and oversaw the work of the other teams. He also took responsibility for organizing the summer work. Through this process, he attended to and facilitated the incorporation of the thinking skills model adopted by the department.

At Carlsberg, the department head selected one course each year to be revised. He then scheduled the teachers who teach that course to the same prep period. During this time, the teachers discussed the lesson that would be taught two days hence. Each lesson plan was a product of group effort, and every lesson plan was available to all teachers in a resource file. The department chair, with only one class to teach, assisted in these course revisions by encouraging the use of the lesson plan model for fostering students' thinking.

The department chair at Carlsberg also used department meetings to foster a culture of thoughtfulness among teachers. He arranged to have two teachers debate a social issue with whole group discussion to follow. The issue under consideration one year was: Is the budget deficit as bad a problem as portrayed in the press? The staff reported that these sessions were extremely stimulating; they typically ran overtime and teachers were seen still arguing afterward. The department chair connected this work to the classroom by periodically arranging for large groups of students from different social studies classes to observe teachers debate in the auditorium. Students spent the class period prior to the debate discussing the issue and preparing questions. The chair orchestrated a follow-up discussion between students and teacher-debaters. In previous years, the department chair also used department meetings to foster reflectivity

and a collaborative ethos. He had teachers read the same section from a text and write lesson aims for that section. He would then lead a discussion as teachers evaluated each others' objectives. Though this was not directly part of their curriculum work, it seemed to make an important contribution to a department culture of collaboration and reflective practice that in turn encouraged the promotion of thoughtfulness in the classroom.

At Arnold, the department head organized teams, made up of teachers who teach the same courses, that plan together regularly before and after school and during lunch. He selected a head teacher for each team who was responsible for providing leadership. In this way, the department chair attempted, in his own words, "to make myself obsolete." He did teach five of the six periods each day so had limited opportunity to be as involved in curriculum development activities as his counterparts at Grandville and Carlsberg. He was, however, active within his own team, and made a special effort to take a more informal role with others. He frequently brainstormed ideas and planned lessons with other teachers who requested help or suggestions. He seemed to truly enjoy experimenting with lesson designs. Because he had no significant release time for departmental leadership, the quality of his own teaching seemed to suffer somewhat in terms of our indicators of classroom thoughtfulness. However, he was clearly aiding others in the department to infuse the model of thinking into their lessons. A discernable ethos of collegiality existed within the department, exemplified by the team approach to curriculum planning and the frequent informal meetings among groups of teachers on professional issues. All the teachers we interviewed praised the leadership of the department chair, emphasizing the fact that he encouraged teachers to take risks in the classroom, that his own attempts to be innovative served as a model for staff, and that he treated everyone, including student teachers, as peers from whom he could learn.

Team Planning

Team or peer planning played a central role in curriculum development in the top three schools. During these meetings teachers struggled with the implementation of the department's model for teaching thinking. The common characteristic of these departments was that peer planning of curriculum was explicitly focused on fostering students' thinking, with the department head taking an active role with staff in operationalizing the particular conceptualization or model of thinking.

In contrast, the four bottom schools offered few opportunities for sustained discussion of substantive curriculum and professional issues, and collaborative work on lesson or course planning was unusual. Each social studies department in this group held regular department

meetings, but teaching for thinking was not a central agenda item; other departmental business dominated. Additional time, typically on in-service days, was also given to departments for meetings, but little attention was given to the teaching of thinking. The possibility of securing more time for professional discussions among teachers was dismissed outright by many of the teachers and department heads in these schools. As one of the department chairs stated, "To have more time for discussions on an organized basis is not feasible, under our financial restraints."

One of these representative schools does present an interesting example of an opportunity for sustained discussion among department members that did not intrude upon teachers' preparation time during or after school. Pierce High School scheduled department meetings *each week* for 55 minutes during the regular school day. The department chair reported, however, that the meetings were rarely devoted to specific issues of teaching for thinking. According to one of the teachers, the meetings concentrated mostly on how to deal with particular students and they allowed staff to "bounce a lot of ideas off each other." Thus, the social studies department at Pierce failed to take advantage of this opportunity to connect curriculum revision with the critical thinking workshops they attended and to develop a common focus on thinking.

Team planning did occur at one of the four bottom schools. At Downing, the three teachers we interviewed told us that they met with other teachers more than five hours each month. Since most social studies classes here were team-taught, this would be expected. But the focus of these meetings was to improve students' understanding of subject matter. There was a strong emphasis on content coverage. The department chair at Downing suggested that a lack knowledge about higher order thinking may have prevented teachers from focusing their efforts more on promoting classroom thoughtfulness. The staff at Downing had not given thinking priority over other instructional goals nor had they adopted a model of thinking to guide their efforts in planning, both prominent aspects of the three most successful departments.

The Role of the Principal

Involvement of the school principal in curriculum efforts to promote thinking was also distinctive of two of the top schools, Carlsberg and Arnold. In addition to his role in evaluation and instructional supervision of staff, which is examined later, the principal at Carlsberg regularly collaborated with the social studies department chair in setting and reviewing instructional goals. He also took his responsibility of reviewing teachers' final exams as an opportunity to check their emphasis on "factual vs. power questions,"

the latter defined as questions requiring application, analysis, synthesis, or evaluation (Levels 3-6 in Bloom's taxonomy). Through this review process, the principal lent legitimacy and prominence to the department's model for teaching thinking.

At Arnold, the principal perceived himself to be responsible for instructional leadership and provided support for efforts in promoting thinking through his direct involvement in curriculum work with his department heads and the eight mentor teachers at the school. The department heads and mentors, in turn, worked directly with other staff members to help improve the quality of instruction. The social studies department chair regarded the principals' support and guidance as crucial to department initiatives to further higher order thinking. Arnold's principal was, however, critical of the priorities of his district. He reported that there was no significant contribution for the promotion of higher order thinking from the district. He also believed that because of the administrative duties he must carry out, the district had significantly restricted the amount of time that he had to spend on curriculum and instructional improvement.

In contrast, instructional leadership by principals in the four representative schools was generally not as focused or directed. When asked what specific aspects of their school need to be changed in order for the school to improve the promotion of higher order thinking for all students and what leverage they might have to effect these changes, the principals by and large mentioned only teacher evaluations and in-service programs aimed at the teaching of thinking. Yet the department chairs at these schools who were responsible for the supervision of teachers tended to believe that evaluations were not effective in communicating expectations to staff, and in only one of the schools, Pierce, was continuing in-service focused on thinking sponsored.

Several principals in the bottom schools believed that the most important way their school could improve the teaching of thinking was through changes in the teachers themselves. But we found little evidence that they either wanted to or knew how to influence teachers in significant ways. In general, we found principals at the representative schools inactive in initiating programs to help teachers improve in the teaching of thinking.

Summary

The three top schools, then, exhibited on-going curriculum revision and improvement driven by an explicit focus on thinking. Curriculum work was done in peer or team planning with the department heads involved in guiding and reviewing the process. Principals at two of these schools also provided support for the departments' attention to thinking. The four representative schools, on the other hand, exhibited few attempts by department chairs or

principals to encourage better attention to thinking through curriculum development. Without a shared goal of fostering students' thinking within the department, curriculum revision alone failed to generate higher levels of classroom thoughtfulness.

The efforts of staff in the select departments in the area of curriculum seem to confront two of the major barriers to classroom thoughtfulness, knowledge dissemination and the coverage epidemic. The instructional model of thinking adopted by each department highlighted central problems (Carlsberg), metaphors (Arnold), or skills (Grandville) rather than the dissemination of knowledge to students. As each social studies staff implemented their model of thinking, the model also brought some continuity within courses and between courses in the department.[5] Curriculum work stressed not content to be covered but key themes or problems, helping to move these departments away from the pressure to cover large amounts of content with which many social studies teachers continue to struggle. Structuring team planning of curriculum directly confronted the barrier of teacher isolation as it provided opportunities for collaborative work, for reflection on instructional strategies, and for professional support for emphasizing thinking.

Pedagogy

Leadership that attended to actual teaching strategies and approaches to instruction also contributed to the higher levels of classroom thoughtfulness in the three top schools. These efforts went beyond simply monitoring and reviewing curriculum, course planning, or individual lesson plans of a teacher or a group of teachers. The purpose here was the careful analysis and examination of pedagogy.

The Bottom Schools

Typically, principals or department chairs observed and supervised teachers a few times throughout the school year in each of the schools considered here. But there was a considerable contrast regarding the exercise and influence of this role between the top three select schools and the bottom four representative schools. Principals in the representative schools generally maintained that formal teacher supervision or evaluation was not an effective means for the improvement of their staff. They cited the limited opportunities to observe and comment on teachers' lessons and pedagogy and suggested that the established hierarchy between administrators and teachers made it difficult to develop constructive relationships.

The limited potential of using the supervisory process as a means to communicate expectations to staff was also suggested by

comments from some department heads that colleagues in the department would feel uncomfortable if they were to observe and evaluate their classes. Thus, at one of the schools, Downing, the department head made only one observation of social studies teachers each semester, with a pre- and post-conference. The discussion following each observation was not focused on higher order thinking, according to the chair. In his view, these evaluations and other formal procedures for staff improvement were not only unnecessary, they tended to undermine his working relationship with teachers.

The social studies department chair at Erskine High School stated that she attempted to use her supervisory role as a means to influence teachers to focus more on students' thinking. Teachers here, however, received a contradictory message from the department head when she observed their classes. They reported feeling considerable pressure from her to follow the established curriculum in the specified time frames; this did not allow the time for reflection and in-depth study that thoughtful instruction requires. Nor did the teachers have significant opportunities to work on the connection between curriculum content and the kind of classroom discourse that might promote higher order thinking.

At Pierce, the department chair did use classroom observations and follow-up conferences with teachers successfully. She focused, in part, on thinking by analyzing the difficulty level of the teacher's questions during instruction. During these encounters, she attempted to get teachers beyond factual, informative questions to comparison, analysis, and critical questions and the application of ideas to other situations. The three social studies teachers we interviewed at this school indicated that their department chair provided significant help to them in their attempts to promote thinking both through the formal supervisory process and her efforts in organizing the workshops on thinking with the college. If these efforts had been connected more closely with department curriculum work, the staff at Pierce might have exhibited higher levels of classroom thoughtfulness.

For the most part, however, department chairs at the low scoring schools preferred and relied largely upon informal means to convey expectations to staff. They tried to encourage change through informal conversation, setting an example in their own teaching, good will, and gentle persuasion. One department head, for example, indicated that formal supervision of teachers, following the criteria established by the district, was one of the major responsibilities of his position. But he also stated that he conveyed 90% of his expectations informally, such as during "coffee bull sessions" when a teacher may want to discuss an issue. Other department chairs might work closely with one or two social studies teachers each year when the teachers themselves took the initiative. In an important sense, though, relying

on informal means of improving instruction translated into passive leadership and little sense of direction or purpose. In these departments, it did not seem to contribute to a better emphasis on classroom thoughtfulness.

The Top Schools

In contrast, department chairs and principals at the three top schools seemed to be more effective in encouraging a focus on pedagogy to promote thinking. At Grandville, the supervisory role was assumed primarily by the department chair although he was not part of the official teacher evaluation process. Taking an active and aggressive role, the chair wrote lengthy summaries of class observations in which he made specific suggestions on how a teacher might better implement the department's focus on thinking skills (e.g., emphasizing the need for reflective time for students: "Critical thinking takes time"). Teachers were receptive and responsive to his feedback. Part of this may be attributable to the fact that the chair also taught demonstration lessons to the social studies staff, providing opportunity for their feedback and criticism. This process seemed to serve both as a model for teaching thinking and as a vehicle to further collaborative work and open discussion around issues of improving students' thinking.

The principal at Grandville made few observations, allocating that task to the department heads. He did, however, make a serious effort to promote a program of peer observation and a positive sense of collegiality and community among staff. During prep periods or over lunch, a group of teachers, usually those teaching the same course, would meet. During this time, one of them presented a lesson followed by discussion with their colleagues. According to the social studies department chair here, the peer observations were central to improvement in teaching thinking.

At Carlsberg, both the social studies department chair and the principal were involved in the observation and supervision of department staff. The department chair here exhibited a systematic approach to supervision, which he did daily. He observed teachers at least twice per year, many more if the teacher was experiencing difficulty or was new to the school. He gave explicit suggestions, praise, and encouragement after the lesson and followed this up with a written summary for his files which was also given to the teacher. Through this process, the department chair communicated his expectation, which was accepted as a departmental "rule," that the instructional format should be predominantly whole-group, teacher-directed discussion. That is, he expected the social studies teachers to be *interacting* with students the entire class period. This emphasis on discussion seemed to have had a positive effect of promoting classroom

thoughtfulness. Teachers in the department respected his coherent and purposeful leadership.

The principal at Carlsberg also placed significant emphasis on supervision of staff. He led workshops with department chairs "to help improve and refine methods of observation and assessment." He made over 100 observations per year in all departments, including written summaries and criticisms, more than any other principal in the sample. As with his analysis of teachers' exams, he stressed "power" questions in his assessment scheme. In addition, he read and commented on the observation summaries of department chairs. A former social studies department head himself, he worked closely with the current chair to reinforce the department's goal of promoting students' thinking.

Both the department chair and principal at Carlsberg, along with other teachers, taught demonstration lessons to classes, with colleagues observing. Afterward, the staff discussed and critiqued the lesson. In previous years, the department head had also used department meetings for peer observation. A video-tape of an individual teacher's lesson would be shown and discussed critically by the group. At other times, the chair devoted meeting time to the details of instruction by giving teachers a lesson objective and having them develop an engaging introduction to the lesson and four thought-provoking questions. Through various means, then, the principal and social studies department chair at Carlsberg fostered an atmosphere of attention to and open discussion around issues of pedagogy related to thinking.

Of the three top select schools, Arnold's department chair gave the least direct attention to instructional issues and pedagogy. As mentioned previously, he had the same teaching responsibilities as other staff members. Consequently, in contrast to the other two top schools, he was not involved in class observation or supervision, peer observations, or demonstration lessons. Planning teams did, however, stress instructional issues, such as how to utilize a student notebook format that would encourage students to think about and explore ideas and take a position on an issue. The principal here did take an active role in the supervision of teachers and used this opportunity to focus on the promotion of thinking. He also encouraged collaboration between the social studies and English departments. This was facilitated through Arnold's writing project, led by one of the mentor teachers, which was viewed by teachers as a critical vehicle for developing students' thinking.

Summary

Significant efforts at the top three schools addressed the specific issue of pedagogy for the promotion of higher order thinking.

These efforts included the supervision of instruction by the social studies department chair and/or principal, and at two schools, peer observations and the teaching of demonstration lessons to staff. Thus, the common departmental vision which focused on thinking was emphasized in curriculum development projects, and further reinforced through deliberation on pedagogy. These efforts appear to have contributed to a culture of professional collegiality that helped to overcome, as one department head put it, the "lone ranger" syndrome in which teachers are viewed as independent, autonomous professionals, with few attempts to bring teachers together to struggle collectively over the aims of education or critically examine their practice in the classroom.[6]

The attention given to instructional approaches and pedagogy addresses important barriers to classroom thoughtfulness. First, in the top three departments attention to pedagogy made problematic the traditional forms of pedagogy in secondary social studies, that is, didactic instruction for the purpose of disseminating information. Second, the collaborative ethos that was focused on both curriculum and pedagogy in these top schools helped to overcome the isolation of individual teachers that often leads to attitudes of competitiveness and defensiveness. Third, critical examination of pedagogy for thinking might encourage teachers to emphasize higher order thinking with all students, regardless of perceived ability. That is, this focus may alter teachers' low expectations of some students that often restrict classroom thoughtfulness. Finally, the programmatic emphases on collegial interaction at these three schools, through team curriculum development or a focus on pedagogy, suggests that teachers' limited planning time can be used constructively. Additional planning time, if combined with similar programmatic efforts, would presumably contribute to even higher levels of classroom thoughtfulness.

Conclusions

A distinct pattern emerges from the comparison of the top three schools with the bottom four schools. Leadership in the top schools was directed at systematic program development for the promotion of higher order thinking within the social studies department. The programs at these schools, while exhibiting differences in their conceptions of thinking and in models for instruction, did share important features: members of the department shared a common conception and vision of higher order thinking; curriculum development and lesson design activities done in teams encouraged the staff to relate the conception of thinking to what was actually taught; and continuous discussion among the department staff focused on how well they were

progressing toward their vision. The four representative schools that scored at the bottom of the sample, although pursuing some activities similar to those of the three select schools, exhibited no systematic effort at the department level to further the promotion of higher order thinking.[7]

Having described differences between departments scoring the highest and lowest in classroom thoughtfulness, we finally consider the extent to which the findings tend to support or refute a number of propositions about effective instructional leadership.

•A principal's leadership is essential to initiate and sustain school improvement efforts; principals must take on an active interventionist role (see Angus, 1989). Our findings support only part of this conclusion that has been asserted in previous research reports. Rather than initiating program development on higher order thinking, principals in the top three schools played an active role in *supporting* the efforts of the department chair. Activities to implement a focus on thinking originated from social studies department chairs and department staff.

•Instructional leadership must be shared among principals, assistant principals, department chairs, and teachers (Peterson, 1989). This is confirmed by our study. The top schools distinguished themselves from the bottom schools in part through strong departmental leadership. That leadership worked deliberately on a systematic, department-based program focused on thinking. Authority and program direction were not simply equated with the formal roles of principal and department chair; teachers were actively and continuously involved in the conceptualization and implementation of the programmatic model.

•Effective instructional leaders attend to both the instructional process and the cultural side of the school, the tacit understandings of staff members that shape their views and behaviors about educational issues (Peterson, 1989). Our findings support this proposition as well. In the two schools that scored at the top on our measure of classroom thoughtfulness, Grandville and Carlsberg, efforts were focused on pedagogy and instructional approaches, primarily through peer observation and demonstration lessons. Their efforts in this area may account for the difference between their mean scores (4.05 and 4.04 respectively) and Arnold's mean score (3.85), a difference equivalent to approximately .50 of the standard deviation for all schools. Although department chairs and principals did not specifically consider the cultural side of the school as distinct from their focus on thinking, leadership in the three top schools seemed to have contributed to norms of collegiality and collaboration and to a common vision and clarity of purpose within the department.

•Effective instructional leadership is educative, stimulating dialogue about teaching and learning, and encouraging reflectivity and critique (Smyth, 1989). This is also confirmed by our findings. In the most successful departments, department chair leadership facilitated consistent discussion of curriculum and professional issues within the department, and, at two of the schools, observation and feedback on actual teaching. The discussions in these schools continually reinforced the emphasis on thinking. If leadership is primarily informal, providing only moral support and approval, that is, without a focus on substantive issues of curriculum and pedagogy, it fails to contribute to a focus on thinking or classroom thoughtfulness.

Collaborative work among teachers and department heads must be approached with some caution, however. As Hargreaves and Dawe (1989) argued, collaborative professional development can have contradictory tendencies. On the one hand, it can be a mechanism for "teacher empowerment and professional enhancement, bringing colleagues together to generate critical yet also practically-grounded reflection on what they do as a basis for wiser, more skilled action." On the other hand, it can also break down teacher isolation "to facilitate the smooth and uncritical adoption of preferred forms of action (new teaching styles) introduced and imposed by experts from elsewhere, in which teachers become technicians rather than professionals exercising discretionary judgment" (p. 7). In short, leadership in this area can promote either "critical and collaborative teacher cultures or contrived collegiality" (p. 7). The high scoring schools demonstrated the former outcome--teachers were involved with each other and with department chairs in continuous interaction and dialogue to develop and implement their model of thinking.

One central question of the research project was: Why have some social studies departments made successful movement toward the goal of promoting higher order thinking while others have not? This investigation suggests that leadership within the department may be a significant part of the answer. In terms of the barriers discussed by Onosko (this volume), efforts by department chairs and principals seemed to attack the problems of instruction as knowledge dissemination, broad coverage of subject matter, teacher expectations of students, and professional isolation. Active instructional leadership at the department level that generated a common vision around a shared conceptualization of thinking, combined with curriculum development within a culture of collegiality and attention to teaching and pedagogic strategies, seemed to facilitate improved levels of classroom thoughtfulness in high school social studies classes.

Endnotes

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[2]The discussion of leadership in the three select schools is based, in part, on the report by McCarthy and Schrag (1990).

[3]Because of the exploratory nature of the study, we included in interview questionnaires a number of factors, such as leadership, departmental collegiality, and staff development, that may relate to the promotion of classroom thoughtfulness. Additional factors unique to specific schools also helped to explain a department's emphasis on thinking. One such factor at Carlsberg was the stability of the social studies staff.

[4]The different conceptions of thinking and approaches to instruction in the top schools reflect the debates over the relative importance of knowledge, skills, and dispositions in developing students' thinking (Newmann, this volume). The success of these three schools suggests, however, that these debates may be misleading. Our research indicates that departments achieved relatively high degrees of thoughtfulness without a dominant focus on any of the three. That is, by taking a more integrative approach, in which, for instance, content was not separated from skills, lessons in these departments consistently exhibited elements of in-depth study of topics, skills focus, and modeling of thoughtful dispositions.

[5]Some of the unique organizational features in three of the restructured schools attempted to break down the strict boundaries between different subject areas. Although the benefits of subject matter integration may be debatable, these changes were intended to counter the curriculum fragmentation between departments that is common in traditionally structured schools. It should be pointed out that the leadership efforts in the top three schools, which focused on the department, may reinforce these subject boundaries which might mitigate against even higher levels of classroom thoughtfulness.

[6]One of the representative schools, Vander Meer, achieved a higher level of classroom thoughtfulness than other representative

(continued on next page)

Endnotes (continued)

schools, even with a departmental culture that lacked collegial spirit. Teachers tended to work alone and rarely had the opportunity to discuss important professional issues. It is, however, risky to assume that this kind of culture will contribute to the promotion of thinking; in fact, the significant lesson from the top select schools is that leadership that fosters a collaborative collegial culture is associated with higher levels of classroom thoughtfulness.

[7]Interestingly, principals in both the top select schools and the bottom representative schools accepted the conventional features of school organization, such as class size, scheduling, and the division of subject disciplines into distinct departments. None of them pressed for organizational innovation as a strategy for better promoting higher order thinking.

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ORGANIZATIONAL FEATURES AND CLASSROOM THOUGHTFULNESS IN SECONDARY SCHOOL SOCIAL STUDIES DEPARTMENTS[1]

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Abstract

This paper offers an empirical analysis of the association between organizational features and classroom thoughtfulness. The findings yield a mixed message. On the one hand, no association was found between classroom thoughtfulness and the organizational features of class size, total numbers of students, amount of planning time and number of courses for which teachers had to prepare. On the other hand, there seemed to be a positive association between levels of thoughtfulness and departmental common visions, curricular revision and instructional improvement programs to promote higher order thinking. While only an exploratory analysis, the evidence from this study suggests that what departments do within extant structures may contribute more to improving the level of classroom thoughtfulness in high school social studies than the mere presence or absence of specific organizational structures.

Introduction

Advocates of school "restructuring" have suggested that traditional organizational features of schools hinder efforts to improve students' learning and the quality of students' thinking (see, for example, Lewis, 1989; Sizer, 1984). Arguments on how to improve the general quality of instruction have pointed to the organizational need for teachers' commitment to a common vision, revamped curricula, and

programmatic emphases on developing teachers' pedagogic skills (e.g., Goodlad, 1984). Newmann (1988) has suggested that other specific organizational features, such as the amount of teachers' planning time, the flexibility of class time, and the number of students per class period, may be barriers to the promotion of thoughtful classroom practice and students' higher order thinking. While such rhetorical arguments may strike a resonant tone with those educators who have long argued against the "factory" model of school, the association between organizational features and the thoughtfulness of classroom practice has not been examined through systematic empirical research.

In this paper, I offer an exploratory empirical analysis of the association between organizational features and classroom thoughtfulness, using data from the study of classroom thoughtfulness in sixteen secondary school social studies departments previously described. Since the study was concerned with how to institutionalize the promotion of higher order thinking, it tried to learn what social studies departments did, as departments, that might help account for different levels of classroom thoughtfulness. Here the specific question to be addressed is, "What departmental organizational features are associated with levels of classroom thoughtfulness?"

Methodology

The selection of departments and teachers, and the observational instrument used to measure levels of classroom thoughtfulness have been described by Newmann (this volume), but further clarification on the methodology of this analysis would be helpful. All sixteen of the departments included in the project were included in this analysis. This involved five "select" departments, included because of strong departmental efforts to promote higher order thinking, four so-called "restructured" departments, selected on the basis of exhibited organizational innovations and a departmental emphasis on higher order thinking, and seven "representative" departments, selected to represent demographic diversity among schools. We anticipated that such a diverse set of departments potentially could uncover associations between classroom thoughtfulness and organizational features.

The organizational features examined in this analysis were limited by availability of data. Direct quantitative indicators were available for four organizational features: (a) the amount of scheduled time teachers had for planning their classes and sharing ideas with their peers, (b) the number of students in each class, (c) the total number of students teachers taught, and (d) the number of courses for which teachers planned. Data for these organizational features were gathered from teacher interviews.

Direct quantitative measures of departmental common commitment to developing students' higher order thinking, curricular revision emphasizing higher order thinking, and programmatic efforts to improve instruction for higher order thinking were not available. However, estimates of the strengths of these organizational features were developed through three types of data: (a) qualitative information gathered through observations and interviews, (b) a small number of quantifiable teacher interview items, and (c) post-observational researcher ratings of each department's organizational emphases on higher order thinking. More information about the nature and use of these indicators is presented with the findings.

To examine the association between levels of classroom thoughtfulness and the organizational features for which indicators were available, two contrasting groups of departments were selected according to their scores on average classroom thoughtfulness in the departments (HOTAV). By comparing the higher rated departments with lower rated departments on the HOTAV scale, associations between organizational features and levels of classroom thoughtfulness hypothetically would be apparent. To distinguish the "high" from the "low" group, a cut-off point of plus or minus one standard deviation from the overall sample mean departmental HOTAV score was used.

Findings

There were only three departments with HOTAV scores at least one standard deviation (.38) above the overall sample mean of 3.40 (see Table 1). These top three scoring departments, Grandville, Carlsberg and Arnold all were members of the "select sample," and received HOTAV scores of 4.05, 4.04 and 3.85, respectively. The departments with HOTAV scores at least one standard deviation below the overall sample mean were Pierce (2.94), Wadsworth (2.93), Downing (2.92), and Erskine (2.88). These four low scoring departments were all members of the "representative" sample. None of the "restructured" departments in the study were in either the top or bottom groups.

There were only minor differences between the top and bottom scoring departments on each of the four organizational features for which we had direct quantitative data (see Table 2). For example, the total number of students for which each teacher was responsible, and the number of courses for which teachers plan were both similar in these two groups of departments. The small differences found between the two groups on these variables were a bit surprising, especially considering the direction of some of the differences.

Where it has been argued that larger class sizes and teachers' lack of planning time might be barriers to higher levels of classroom

thoughtfulness (Onosko, this volume), these findings contradict what one might expect. Class sizes were actually larger in the higher scoring group of departments. The average number of students per class in the top group was 28.56, compared to the bottom group's 22.75. And where it has been argued that teachers with more planning time might better promote classroom thoughtfulness (Newmann, 1988), teachers in the top group of departments actually had less time to plan compared with the teachers in the bottom group. Average planning time per week in the top group was 4.89 50-minute periods, compared to the low scoring departments' 5.67 periods per week.

Table 1
Departmental Means and Standard Deviations on Classroom ThoughtfulnessAccording to Sample Set

Select Departments (N=90 lessons)	Mean	SD
Grandville	4.05	(.57)
Carlsberg	4.04	(.47)
Arnold	3.85	(.65)
Bradley	3.48	(.75)
Scarborough	3.22	(.56)
All select depts	3.73	(.33)
Representative Departments (N=125 lessons)	Mean	SD
Vander Meer	3.63	(.84)
Newcombe	3.35	(.84)
Mathewson	3.13	(.96)
Pierce	2.94	(.83)
Wadsworth	2.93	(.98)
Downing	2.92	(.41)
Erskine	2.88	(.88)
All representative departments	3.11	(.26)

Department Rankings	
Grandville	4.05
Carlsberg	4.04
Arnold	3.85
Williams	3.72
Vander Meer	3.63
Carter	3.56
Bradley	3.48
Nelson	3.36
Newcombe	3.35
Shaw	3.35
Scarborough	3.22
Mathewson	3.13
Pierce	2.94
Wadsworth	2.93
Downing	2.92
Erskine	2.88

Table 1 (continued)
Departmental Means and Standard Deviations on Classroom ThoughtfulnessAccording to Sample Set

Restructured Departments (N=72 lessons)	Mean	SD
Williams	3.72	(.68)
Carter	3.56	(.51)
Nelson	3.36	(.90)
Shaw	3.35	(.78)
All restructured departments	3.50	(.15)
Total among all departments	3.40	(.38)

Comparisons on the total number of students per teacher and the number of courses for which teachers had to prepare again yielded only minor differences. The top group of departments averaged 114 students per teacher and the bottom group averaged approximately 125 students per teacher. Interestingly, both the top and bottom group taught more students per teacher than the overall sample mean of approximately 107. Differences in the number of courses teachers taught between these two groups of departments were very small. Teachers in the top group prepared for an average of 2.11 courses and teachers in the bottom group prepared for an average of 2.17 courses.

Generally, the organizational features for which we had direct quantitative measures did not differ noticeably between the top and bottom departmental groups. But differences did begin to appear in a comparison between these two groups of departments on our other less easily quantifiable measures of organizational features. When comparing our indicators of departmental common commitments to, curricular revision for, and programmatic instructional development for the promotion of higher order thinking, these two groups of departments actually appeared quite different. The differences between the top and bottom department groups on these organizational features first became apparent in qualitative descriptions of each department.

In all of the top three departments, one way or another, a staff commitment to the promotion of higher order thinking had been developed. This was indicated by the fact that virtually all of the

Table 2
Departmental Structural Variable Means and Standard Deviations

Dept.	Planning (hrs/wk)	SD	Mean Class Size	SD	Total # Students/ Teacher	SD	# of Courses Taught Teacher	SD
All Depts.	5.21	(2.28)	23.70	(6.08)	107.44	(33.69)	2.18	(.44)
High HOTAV Contrast Group	4.89	(3.50)	28.56	(5.24)	114.00	(49.73)	2.11	(.38)
Low HOTAV Contrast Group	5.67	(.72)	22.75	(6.50)	124.92	(23.32)	2.17	(.19)
Restructured Depts.	4.17	(2.05)	21.15	(7.05)	93.50	(45.93)	2.17	(.64)

teachers in the top departments mentioned critical thinking, thinking processes or thinking skills within their descriptions of the common vision held by the department (8 out of the 9 interviewed).

In the lowest scoring departments the only evidence of a departmental common vision that included higher order thinking came from statements of Erskine's department chair. Yet, none of the teachers from Erskine mentioned anything about higher order thinking, or critical thinking, in descriptions of the department's common vision. From among all the teachers in these four bottom departments, only one (out of the 12 interviewed) mentioned higher order thinking (or anything resembling thinking) as part of a departmental common vision.

In the top departments, curricular revision was conducted on a systematic basis and was continually done with an emphasis on higher order thinking. This was evident in an examination of the curricular materials used by these departments. The interviews gave some information about how this revision was done. Grandville's department chair and principal funded summer curriculum revision; Carlsberg's

department chair selected one course each year for revision and Carlsberg's teachers maintained resource files; Arnold's teachers revised curriculum continuously, meeting before and after school. Each of these departments instituted these revision efforts based on some model of higher order or critical thinking (see McCarthy and Schrag, 1990).

In the four bottom departments, we found no evidence that such curricular revision took place. Most curricular materials in these departments remained closely tied to published textbooks. While the "bottom" departments did periodically revise their district curricular guidelines, none of the curricular revision efforts were focused on higher order thinking.

In terms of staff development efforts to improve instruction, the contrast continues. Grandville and Carlsberg, had programmatic efforts to develop teachers' instruction. Teachers at Grandville were required to conduct peer observations and the department chair periodically employed demonstration lessons to model lessons in which higher order thinking is promoted. Carlsberg's department chair conducted systematic classroom observations in the attempt to promote teacher's pedagogical emphasis on higher order thinking. In the bottom scoring group, there had been little or no attempt to improve teachers' instruction with respect to the promotion of higher order thinking.

From these contrasts, the association between these organizational efforts to promote higher order thinking and classroom thoughtfulness seems quite strong. To get additional data relevant to these organizational features, however, I also examined a selected set of related quantitative interview items.

On a yes/no question asking whether or not teachers perceived a departmental common vision, almost all of the teachers in both groups of departments suggested her or his department did have a common vision. All of the teachers in the top three departments answered "yes" to this question and 11 out of 12 of the teacher in the bottom group answered "yes". When asked what percentage of the department members shared this vision, interestingly, the top group averaged 86.44 percent and the bottom group averaged 90.83 percent. From these items, then, the two groups appear quite similar, in terms of a general departmental common vision. But neither of these indicators were specifically tied to a common vision which included a commitment to higher order thinking.

On another questionnaire item, teachers were asked whether s/he was less, equally, or more interested in teaching reasoning relative to subject matter content (with less ='1', equally ='2', and more ='3'). If we interpret department means on this item as an indicator of a commonly shared interest in promoting higher order thinking, an important difference between the two groups of departments appeared.

The top group had an average department mean of 2.72 on this interview item, while the bottom group averaged 2.00. Roughly put, this means that teachers in the top departments were consistently more interested in teaching reasoning as opposed to subject matter content; but, the teachers in the bottom group of departments were equally interested in teaching reasoning and content coverage. This can be interpreted as an indication that the common visions held in the top department were more likely to have included a commitment to higher order thinking (or at least teaching reasoning) than were the bottom group departments' common visions.

Unfortunately we had no direct quantitative indicators of the departments activities in curricular revision and efforts to improve instruction to promote higher order thinking. Teachers did, however, answer a questionnaire item asking how much time per month s/he spent meeting with other teachers in the department planning curriculum. On this item (with a scale from 1=less than fifteen minutes, to 6 = more than 10 hours), the top department group averaged 4.89 and the bottom group averaged 3.42. And when asked how many times over the prior three years s/he had been observed by a colleague or observed a colleague's class (excluding supervisory/ evaluation observations), teachers in the top departments reported more collegial observations. Teachers in the top departments averaged 9.44 observations over the prior three years and teachers in the bottom departments averaged 6.83. Since these quantitative measures are not directly connected with curricular revision and instructional improvements specifically intended to promoted higher order thinking, they did not provide solid evidence of an association between organizational features and classroom thoughtfulness. These simply indicate that teachers in the top departments more often planned curriculum collectively and conducted more peer observations than their bottom group counter-parts.

To get a clearer measure of departmental efforts to develop or maintain a common vision, to develop curricula, and to improve instruction for the promotion of higher order thinking, an additional means of getting quantitative estimates of these features was employed. Five researchers were asked to rate the departments they had visited along six dimensions: (a) the degree of a general common vision or focus, (b) the degree of a departmental vision which included higher order thinking, (c) the degree to which teachers in the department systematically revised curricula, (d) the degree to which teachers in the department revised curricula towards the promotion of higher order thinking, (e) the degree to which teachers in the department programmatically attempted to improve instruction or teaching techniques and (f) the degree to which teachers in the departments attempted to programmatically improve teaching for the promotion of higher order thinking or classroom thoughtfulness. Each

of these dimensions were rated on a scale from low (1), medium (2) to high (3). Each department was visited by two researchers for 8-12 days. Exact agreement was achieved on 90.6 percent of the ratings and these ratings never disagreed by more than one point. Any differing ratings were averaged.

Given that these ratings were made after class observations were completed, the potential for bias must be acknowledged. But in this exploratory attempt to estimate the association of organizational features and classroom thoughtfulness, we were unable to anticipate all needs for data prior to actual fieldwork. Some more direct estimates of these departments' organizational efforts, however limited, would be more instructive than none.

Researchers' ratings of these organizational features were associated with levels of classroom thoughtfulness (see Table 3). The top three departments scored substantially higher than the bottom four departments on every one of the six rated dimensions. The largest differences appeared with respect to a departmental common vision that includes higher order thinking (2.83 vs. 1.25), general curricular revision (3.00 vs. 1.38), and curricular revision with a focus on higher order thinking (2.83 vs. 1.00). Overall, these general departmental ratings are consistent with the notion that departmental common visions, programmatic curricular revision and systematic efforts to improve the instruction of higher order thinking are positively associated with levels of classroom thoughtfulness.

Organizational Structures and Programs

The findings offer a mixed message. On the one hand, no association was found between the organizational features of class size, total numbers of students, amount of planning time and number of courses for which teachers had to prepare. That is, both the top departments and the bottom departments were fairly similar and traditionally organized with respect to these features. On the other hand, when examining the association between departmental common visions, curricular revision and instructional improvement programs to promote higher order thinking, the evidence suggested that the top departments were stronger on these organizational features.

To understand these findings, I would note that these "organizational features" were not all of the same kind. Here I would draw a heuristic distinction between two types of organizational features: organizational *structures* and *programs*. This distinction is analogous to the form v. substance distinction. While the term "structure" carries as many meanings as there are uses of it, I use it here with a rather demographic or geographic intent. That is, I mean only to be describing conditions of space/time and numbers of people (i.e.,

organizational regularities that prescribe teachers' workloads and organization of time). The term "program" is chosen for a more pragmatic reason. That is, many departments describe efforts to organ-

Table 3
Means and Standard Deviations of Researcher Ratings of Departmental Programs According to Sample Set and HOTAV Contrast Group

Dept.	Gen. Comm. Vision	HOT[1] Comm. Vision	Gen. Curric. Revis.	HOT Curric. Revis.	Genr Peda-gogic Prog.	HOT Peda-gogic Prog.	Mean of All Prog. Ratings	Mean of HOT Prog. Ratings
All Depts.	1.78 (.71)	1.63 (.74)	2.09 (.64)	1.69 (.73)	1.31 (.57)	1.34 (.60)	1.64 (.54)	1.55 (.62)
Restruc-tured Depts.	2.38 (.48)	1.25 (.50)	2.25 (.50)	1.63 (.48)	1.38 (.48)	1.25 (.50)	1.69 (.37)	1.38 (.34)
High HOTAV Contrast Group	2.33 (.58)	2.83 (.29)	3.00 (.00)	2.83 (.29)	2.17 (.76)	2.17 (.76)	2.56 (.25)	2.61 (.35)
Low HOTAV Contrast Group	1.50 (.58)	1.25 (.50)	1.38 (.48)	1.00 (.00)	1.00 (.00)	1.00 (.00)	1.19 (.10)	1.08 (.17)

Standard Deviations are shown in parentheses.
All Ratings scaled from low (1), medium (2), to high (3).
[1] HOT Program Variables are those which were designed to promote Higher Order Thinking.
Exact agreement 87 out of 96 90.6 percent.

ize curricular revision and instructional improvement as departmental programs. And such "programs" reflect the extent to which the department systematically organizes the content, or substance, of the work to aim toward certain goals, curricula, and pedagogy.

Following this distinction I considered those organizational features that have a direct impact on the conditions in which teachers work to represent *organizational structures*. From the available data, four organizational structures were analyzed: (a) the amount of scheduled time teachers have for planning their classes and sharing ideas with their peers, (b) the number of students in each class, (c) the total number of students teachers teach, and (d) the number of courses for which teachers must plan. These can be considered structures in the sense that the organization of space/time and the number of people to be served within a given unit of space/time by a single person (the teacher) can conceivably place constraints on the kind of work and interaction that is possible. Other organizational structures might also be important, but in this study reliable quantitative data across all sixteen departments were available for only the four structures designated above.

Such structural organizational features have been addressed in calls for school improvement, reform, or restructuring, and some of the main concerns about these organizational features are evident in distinguishing between traditionally organized and more structurally innovative high schools. A traditionally structured high school would be one in which teachers teach approximately 20-30 (or more) students per class, about 120-140 (or more) students per day. Teachers in such schools typically have one planning period (excluding study hall duties or other monitoring responsibilities) per day. High school teachers typically must plan for at least two different courses. And most teachers in traditional settings rarely have the opportunity to plan their lessons or curricula with colleagues.

In contrast to traditionally structured schools, innovative school structures might include (a) teachers with fewer students per class, (b) teachers with fewer students per day, (c) teachers with more planning time and even shared planning time within teams, or (d) fewer courses for which teachers must plan. Other organizational structures which could also be changed might include the flexibility of class time lengths and the amount of time department heads have to exercise instructional leadership.

The *amount* of time and required work is certainly of interest in trying to understand the relationship between organizational features and classroom thoughtfulness; but, it is equally important to consider the *kind* of work done. Herein lies the question of substance. Thus, in this analysis of organizational features, I also studied departmental efforts to directly influence the quality of teachers' classroom practice. Departmental efforts to affect the kind and quality of teachers' work were considered *organizational programs*. In the departments studied, organizational programs to promote higher order thinking included (a) sanctioned curriculum revision and design, (b) staff development efforts

focused on improving teachers' instruction, and (c) departmental staff development programs to maintain or promote collegiality or a common vision.

It is quite possible, of course, for a school or department to innovatively change its organizational structures (its form) and to institute programs to promote higher order thinking (change its substance). However, it is also possible to not change anything about a school or department's organizational structure, and yet engage in serious programmatic efforts to promote higher order thinking. One might also find innovatively structured schools or departments which have not engaged in any programmatic efforts to promote higher order thinking. And finally, schools and departments might change neither their organizational structure nor undertake any programmatic efforts to promote higher order thinking. The point of raising these hypothetical possibilities is to underscore the importance of independently examining both organizational structures and programs to discern what their practical connections with classroom thoughtfulness might actually be.

The top departments studied here are good examples, I think, of departments which had not altered their organizational structure, but have engaged in strong programmatic attempts to promote higher order thinking. Their relative success in these efforts seem to contradict claims that conventional organizational structures necessarily undermine efforts to promote higher order thinking. I would argue that despite calls to modify school structures, departments and teachers can maintain relatively high levels of classroom thoughtfulness within traditional high school organizational structures. On the other hand, I did find that certain types of organizational programs were associated with our ratings of classroom thoughtfulness. This suggests that what departments do within extant structures may contribute more to improving the level of classroom thoughtfulness in high school social studies than the mere presence or absence of specific organizational structures.

If this tentative conclusion seems inconsequential to current advocates of school restructuring, recall that four departments in the sample were selected as "restructured;" but, none of these departments were in the contrast groups distinguished by scores on classroom thoughtfulness. Given that these four restructured departments were chosen, in part, because of an expressed departmental commitment to the promotion of higher order thinking, why were they not among the departments with the highest ratings on the HOTAV scale? One question that lingers from this situation is simply, "What happened in these restructured departments?" To begin answering this question, I offer a brief description of the restructured departments and

comparisons with the other department groups in terms of the restructured departments' organizational structures and programs.

Structures and Programs in Restructured Departments

Structural variation within the group of restructured departments suggests that higher HOTAV scores occurred in departments located within school-wide restructuring efforts. In Williams, the entire high school instituted flex-mod scheduling which has allowed the social studies department to establish class meetings of different lengths and sizes. Carter's entire school had reduced the students' course load with an interdisciplinary curricular model and longer class-time meetings. Both of these departments were in schools that had restructured the organization of all departments and class times. These departments, each with school-wide restructuring efforts, received higher HOTAV scores than the other two "restructured" departments (see Table 1).

Nelson's social studies department was part of a "school-within-a-school" model. The opportunity for longer class meetings and interdisciplinary approaches among subjects existed at Nelson. However, since the program functioned as an "alternative" within a larger school in which no restructuring has taken place, significant limits existed with respect to what teachers in the program offered students. First, because students were required to take some courses outside the "alternative" program, their class schedules had to conform to the larger school schedule -- limiting the ways in which time could be allotted to specific subject matter courses. Second, while two subject matter courses in the alternative program were scheduled consecutively so as to leave open possibilities of longer class times and team teaching, these options were rarely exercised. And third, although teachers in the "alternative" program were allotted extra planning time, most teachers in the sample opted either to teach additional classes or coach extracurricular (academic) activities for supplemental pay. Consequently, the structural changes made in Nelson's alternative program actually only slightly altered the conditions in which teachers and students at Nelson worked. In general the "school-within-a-school" model at Nelson limited the alternative program's restructuring effort, both because the larger school structure wouldn't allow for more extensive structural changes and because teachers in the alternative program didn't exercise the options available to them. While Nelson's HOTAV score (3.36) was above the "representative" mean (3.11), it was lower than both Williams and Carter and the overall sample mean.

At the bottom of the "restructured" sample, Shaw, a highly tracked school was only partially "restructured," with innovative

structures limited to individual courses for middle and low track students. The changes in the structural condition of these courses allowed for close association between the social studies and the English departments, longer class meeting times (by combining classes back to back), and a reduction of the number of students in these classes. However, like Nelson, staff at Shaw had not fully taken advantage of the opportunity to extend class times and to integrate curricula to the extent that was possible. Like Nelson's HOTAV score, the HOTAV score Shaw received (3.35) was moderately above the "representative" mean (3.11), but lower than the overall sample's mean HOTAV (3.40).

The differences among these restructured departments complicate the interpretation of the finding that structural features did not seem associated with differences in departmental HOTAV scores when comparing the top and bottom departments in the full sample. The departments at Williams and Carter were in schools which had restructured the entire school, and they received HOTAV scores above the overall sample mean. Whereas both departments in schools with only partial school restructuring (Nelson and Shaw) received HOTAV scores below the overall sample mean. Among the "restructured" departments, it seems more comprehensive and school-wide restructuring was associated with higher ratings of classroom thoughtfulness.

Interestingly, both Carter and Williams have used their innovative structures to reduce the number of students per class (15.92 and 14.33, respectively) and to reduce the number of courses teachers taught (1.67 for both departments). Both of these class sizes and the number of course taught were lower than Shaw's (28.33 and 2.33) and Nelson's (26.00 and 3.00).

More direct evidence of restructuring having a positive, causal influence on the promotion of classroom thoughtfulness can be found in at least one of the restructured departments. To illustrate the point here, I briefly describe Williams' restructuring effort.[2]

In Williams, the departmental commitment to small group class meetings, as part of the flex-mod scheduling, seemed to have led teachers to adapt pedagogical practices conducive to promoting classroom thoughtfulness. In interviews it became evident that the teachers in Williams' social studies department saw their small group meetings as *the* time for student discussion. In fact the department had made whole group discussion a standard by which to judge how small groups were being conducted. With the small number of students in these sessions (approximately 15) and with the department's interest in student involvement in discussions, it seemed that Williams' relatively high HOTAV (3.72), in large part, may be due to the new pedagogical opportunities in small group classes and the departmental

expectation that these classes ought to be a time for involving students in discussions.

As a group, the restructured departments received higher HOTAV scores than the overall sample mean. But based on the finding presented earlier, that departmental structural conditions were not associated with levels of classroom thoughtfulness, it is difficult to attribute the restructured sample's higher than average HOTAV scores to changes in structural conditions alone. However, differences among the restructured departments, with respect to the degree to which they have actually "restructured" what I have labeled organizational structures, suggest that in some contexts innovative structures may help in promoting classroom thoughtfulness. Of specific interest here were smaller class sizes and fewer courses for teachers to teach.

The ratings of departmental programmatic strength can also be examined within the restructured set of departments (see Table 3). The restructured departments were rated higher than the low HOTAV contrast group of departments on each of these dimensions, supporting the notion that these departments had implemented some programs to promote classroom thoughtfulness. However, the restructured departments were rated lower than the top departments on virtually every programmatic dimension (comparing means of sub samples, see Table 3). Most notably, the top departments received much higher ratings on the dimensions of common visions that include or focus on classroom thoughtfulness (the top group mean was 2.83 vs. the restructured mean of 1.25) and curriculum revision with respect to higher order thinking (3.00 for the top group mean vs. 1.63 for the restructured mean).

The only exception to this trend was that the "restructured" departments had higher ratings than the top departments on their degree of a general common departmental vision. From interviews, it was apparent that the teachers in these restructured departments strongly held a common vision; but the restructured departments' common visions did not focus particularly on higher order thinking.

These comparisons of programmatic ratings are generally consistent with the claim that these restructured departments had implemented programs for developing classroom thoughtfulness less strongly than had the top departments. This conclusion was also consistent with a comparison of the two "total" departmental programmatic ratings. Two overall programmatic ratings were obtained by averaging each department's ratings for all six dimensions for the "Mean of All Program Ratings" in Table 3, and the three ratings of dimensions focusing on higher order thinking (dimensions 2, 4, and 5) for a "Mean of HOT Program Ratings." The strongest ratings of departmental programs were found in the top group--with the "restructured" sample's total ratings considerably lower than the top

departments. Mean sample total ratings for the "restructured" departments were 1.69 for the total programmatic rating and 1.38 for the higher-order-thinking total rating. The top group's means were much higher at 2.56 and 2.61.

The teacher interview indicators of programmatic emphasis are also consistent with the general comparisons between the restructured departments and the contrast department groups. Teachers in top departments suggested there was a departmental common vision more often than did members of restructured departments (100 percent vs. 83 percent), as well as slightly higher percentages of departmental agreement (86 percent vs. 80 percent). Similarly, top department teachers expressed more interest in teaching students to reason, indicating a stronger focus on higher order thinking than teachers in the restructured departments. The top group's mean score on the 3-point scale of interest in teaching students to reason (2.72) suggests that these teachers in these departments were much more interested in reasoning than in content coverage. In the restructured departments, however, the mean score of 2.17 indicates only slightly better than equal interest in teaching reasoning relative to subject matter. In conjunction with the high level of departmentally shared common vision, this is consistent with the researcher ratings and the notion that the top departments held stronger foci on promoting thinking relative to the restructured departments. Teachers in top departments also conducted more peer observations than their restructured counterparts. Though the actual content of the peer observation could not be ascertained from an indicator of the amount of observation, qualitative data has suggested that the select departments' interest in promoting thinking was a primary concern in these observations (see King, this volume).

Conclusion

The findings on organizational programs suggest that there is an association between levels of classroom thoughtfulness and the strength of departmental programmatic efforts to promote higher order thinking. The association between organizational programs to promote higher order thinking and levels of classroom thoughtfulness is consistent with the proposition that such programs are critical in attempts to improve classroom thoughtfulness. It would be reasonable to expect higher levels of classroom thoughtfulness in departments which implemented programs to promote higher order thinking.

Perhaps more interesting, especially with the inclusion of restructured departments, no association was found between organizational structures and levels of classroom thoughtfulness. Although departments in the restructured set received higher HOTAV scores than did most of the "representative" departments, their

performance did not match that of the top departments. These results are consistent with arguments that suggest it is not necessary to alter traditional high school structures in order to achieve higher levels of classroom thoughtfulness. The performance of the top departments suggests that relatively high levels of classroom thoughtfulness can be achieved within existing high school structural conditions.

In order to understand the influence of restructuring on the promotion of higher order thinking it should be recognized that higher order thinking was only one of the goals toward which the restructured schools in this sample aimed. In comparison to the top rated departments, in which the promotion of higher order thinking was a central concern, the restructured departments implemented structural changes for a variety of reasons (e.g., improving teachers' work life, fortifying the social network of "at-risk" students). Since these restructured departments were busy with many other things in addition to promoting higher order thinking, it should not be a surprise that the promotion of classroom thoughtfulness had not reached levels comparable to those of the top departments. The higher levels of classroom thoughtfulness of the teachers in these restructured departments, compared to those in the "representative" sample, could be associated with their modest programmatic efforts.

Overall, these findings offer something of a cautionary note to advocates of school restructuring. On the one hand, the evidence presented here suggests that altering school structures alone may do little to improve the promotion of classroom thoughtfulness, since they do not appear to be necessarily associated with each other. On the other hand, our finding that organizational programs for the promotion of higher order thinking are associated with classroom thoughtfulness suggests that "restructuring" efforts may lead to higher levels of classroom thoughtfulness if the new structures are used to focus on programs that attempt to influence the quality teachers' work.

Many schools and departments are spending great amount of time and energy fighting for more flexibility in their organizational structures -- gaining more planning time, lowering class sizes, etc. And some districts are adopting such proposals under the presumption that altered structural conditions will help improve the quality of teaching. Though limited to the specific goal of promoting classroom thoughtfulness, this analysis gives reason, I believe, to be remain skeptical about such presumptions.

Some advocates of restructuring have recently begun to call for more attention to programmatic attempts to directly improve curriculum and instruction (see, e.g. Sizer, 1989). This analysis is consistent with the insights on which these more specific arguments for directly improving curriculum and instruction are based. The available data from the Higher Order Thinking project is not sufficient to offer

more conclusive claims than the rather tentative ones I have presented here. However, the differences between types of organizational features (structures and programs) and their association with levels of classroom thoughtfulness presented in this analysis, I think, does open an important line of inquiry for future studies of school restructuring.

Endnotes

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[2]The evidence for this claim was qualitative and presented more fully in Ladwig and King (1991).

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CLASSROOM THOUGHTFULNESS AND STUDENTS' HIGHER ORDER THINKING: COMMON INDICATORS AND DIVERSE SOCIAL STUDIES COURSES[1]

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Abstract

This article presents the problem of arriving at common indicators of instructional quality and student achievement in social studies, given great diversity between classes and schools in what is taught. A study of more than 70 classes in 11 high schools showed that generic qualities of classroom thoughtfulness were not associated with the persuasiveness of student writing on a constitutional issue. However, since the impact of classroom thoughtfulness on higher order thinking in the subjects that teachers actually taught was not assessed, the results do not justify dismissing the significance of generic qualities of classroom thoughtfulness for promoting students' thinking.

Introduction

The central focus of the previous three articles, and the project as a whole, was the analysis of thoughtfulness in social studies classrooms and the factors within departments that affect levels of thoughtfulness. It is reasonable to assume that thoughtfulness and student practice in higher order thinking will improve their competence, but the assumption should be tested. What results do thoughtful classrooms actually have on student thinking, or more specifically on their proficiency in meeting higher order challenges in

social studies? Addressing this significant question involves a number of complex issues.

Secondary school social studies varies considerably between schools, between courses within schools, and between sections of the same course within a school. The diversity is nourished by the pluralistic content of the curriculum -- which includes disciplines of history, geography, political science, economics, sociology, psychology, anthropology, many specialties within these disciplines and a host of areas beyond formal academic disciplines considered legitimate areas of study (e.g., ethnic and women's studies, global education, environmental studies, multicultural studies, law-related education). Teachers' efforts to shape content to the diverse abilities and interests of students further differentiates instruction. Finally, the varied political interests of teachers and local communities make the selection of content even more controversial and non-uniform. Yet, in spite of the diversity, educators often agree that, regardless of the content studied, a major purpose of social studies instruction should be to help students think critically and creatively about the subject and that careful, disciplined thinking should eventually be applied to public issues that confront citizens in a democracy.

In the midst of disparity among specific instructional goals, how might we assess progress on the more general goal of promoting students' thinking? Some common indicators are needed to respond to the growing demand for school, district, state and national accountability. Common indicators could reveal not only the general qualities of student thinking, but also provide information to identify inequities in instruction and opportunity to learn. Common indicators for both instructional quality and student thinking might help to unify the profession around some goals, while, at the same, preserving diversity in the teaching of more specific content. Diversity in specific content between classes, schools, districts and states is consistently advocated to respond to students' personal backgrounds, to support cultural pluralism, to foster teacher commitment and creativity, and to adequately represent the many disciplines of the social studies field.

The project addressed this problem by identifying "generic" qualities of classroom thoughtfulness that could be expected to promote students' thinking across a wide range of social studies courses. These qualities of thoughtfulness were discussed in Newmann (1990a) and summarized in Table 1 of Newmann (this volume). We also developed a test for assessing the quality of student thought on public issues which did not depend upon students' prior mastery of specific content. This article presents the approach to testing, the methodology of data collection and scoring, results and discussion of implications.

Testing Thinking in Social Studies

What kind of assessment would give meaningful indicators of the quality of students' thinking in social studies? The ideal approach would meet several criteria. These can be summarized into the three categories of context-specific exercises, multiple indicators of performance, and authenticity.

Context-specific exercises

To give students ample opportunity to demonstrate how they think about what they know, assessment tasks should pose novel challenges in understanding the specific subjects studied in each of the observed classes. Because of the diversity of topics studied and teachers' goals in our sample (and in schools generally), such tests would vary considerably in the problems presented, the nature of in-depth knowledge required to solve the problem, the kinds of skills needed, and possibly also the underlying dispositions. This seems to suggest the potential need for a different test and set of scoring standards for each teacher. But how then would it be possible to compare levels of student performance across classes? Perhaps it would be possible to construct unique exercises for each class and still develop a generic scoring scheme useful across the diverse exercises.

Multiple indicators

Ideally, one would prefer to have multiple indicators of student performance that represent a range of work and problem-solving competencies. It would be informative, for example, to examine students' competencies in oral examinations, oral reports and discussions as well as in written exercises. It would be useful to assess the quality of thinking that emerges in both independent, individual work and in cooperative group activity. And to get a fair representative of students' thinking one would presumably want to examine performance on diverse topics or problems, rather than only one.

Authenticity

The most valid tests of student thinking would presumably be those that students are interested in and care about enough to put forth their best efforts. Such tests should be seen as significant, meaningful and worthwhile in their own right, not merely as contrived rituals to certify success in school. Elsewhere we have defined authentic human achievements as those which display production (rather than reproduction) of knowledge, through disciplined inquiry and which have personal, utilitarian or aesthetic value beyond the certification of success in school (Archbald & Newmann, 1988; Newmann &

Archbald, in press). Authentic social studies tasks indicative of student thinking might involve long-term research and action projects on community history or public affairs. These cannot be administered as one class-period tests.

Unfortunately, the project lacked the resources to develop assessment procedures consistent with all of the above criteria. Working within the constraints of the project and the cooperating schools, we decided to administer a written test to be given in a single class period. A written format was chosen largely for ease of administration and scoring.

One alternative was to administer a previously developed test of critical thinking, such as those reviewed by Arter and Salmon (1987). We rejected this on the grounds that such tests, which focus primarily on students' logical-deductive skills and which are usually answered in multiple-choice form, do not reveal the depth of students' understanding of any particular topic and they do not show how students organize their thoughts in their own language.[2]

Our research indicated that when social studies teachers want to promote thinking, their aim is not usually to teach and test for discrete thinking skills, such as hypothesis testing or evaluating the reliability of sources. Instead, they design their daily efforts to fulfill a more general vision -- leading students to interpret, analyze, and use their knowledge of history, government, geography and the social sciences to understand the contemporary world.

The Posttest: Persuasive Writing on a Constitutional Issue

We devised an exercise consistent with this general purpose, not aimed at the specific content taught in any class. Students were given a two-page document (see Appendix) that described a hypothetical court case, based on an actual case, involving the search of Karen Doctor's purse and locker by the high school assistant principal who suspected Karen first of smoking in violation of a school rule and then of selling marijuana. Following the case description, background information was given on the main principles that courts have used in making decisions about the constitutionality of student searches. Students were asked to decide whether Karen's constitutional rights were violated and to write a persuasive essay which explained and defended their views using information in the reading.

Completing the task requires higher order thinking, because to succeed, students must organize and interpret information in a new way (assuming they have not previously studied this issue). Virtually all of the substantive knowledge needed is available within the document. This is not a test of what students have remembered from social studies, but a test of their competence in thinking about social studies content.

As explained below, an analogous task, the case of Anthony and Stanton involving school censorship of a student newspaper, was used as a pretest in one of the data sets.

There are, of course, a variety of important ways to think about social studies content that this test does not attempt to assess -- for example, explaining historical causation, analyzing cultural differences, interpreting economic data, solving moral dilemmas, or critiquing the use of political power. Social studies assessment should give serious attention to all of these forms of thinking. Our test is limited to the kind of thinking involved in writing a persuasive position on a constitutional issue. This should not, however, be seen as an esoteric or highly specialized facet of social studies. To the contrary, it was chosen because it represents a central civic competence and an important objective of social studies.

According to the research design described later, the test was administered toward the end of the spring semester, and students had about 50 minutes to complete it. Almost all students finished with time to spare.

Scoring

Students' essays were scored from 1 to 5, based on the following criteria which we adapted from the National Assessment of Educational Progress (NAEP) assessment of persuasive writing (Applebee, Langer, Mullis, & Jenkins, 1990). Essays received one of five scores: (1) unsatisfactory, (2) minimal, (3) adequate, (4) elaborated, or (5) exemplary. *The overarching consideration was the degree to which a student's response was capable of persuading a reader.* Three elements focused the assessment: whether or not the student had a) taken an informed stand, b) provided persuasive reasons, and c) elaborated upon those reasons. Specific points were not subtracted for unpersuasive or irrelevant reasons but these could diminish persuasiveness. Presentation of faulty assumptions or reasons that undermine the argument could also diminish overall persuasiveness. Finally, responses were to be written in sentences; that is, incomplete sentences or fragmented lists were considered less persuasive. Fuller descriptions for each of the scores are given below. Examples of responses for each are given in Newmann (1990c) which gives more detail on development and scoring of the test.

•*Unsatisfactory:* The student has failed to take a stand on the issue under examination, or has taken a stand but has failed to provide a single persuasive reason. Lacking a persuasive reason, unsatisfactory responses will necessarily lack elaboration. Overall, the response has no chance of persuading the reader.

•*Minimal:* The student has taken a stand on the issue under examination and has provided at least one persuasive reason, or at least two supportive reasons. Faulty assumptions, undermining, or irrelevant reasons could result in an unsatisfactory score if they reduce the persuasiveness of the argument. Overall, the response is unlikely to persuade the reader.

•*Adequate:* The student has taken a stand and has provided two or more persuasive reasons. Elaboration of reasons is not necessary here. The presentation of only one persuasive reason can result in a score of "adequate" if useful elaboration is included. Undermining reasons, faulty assumptions, or irrelevant reasons can possibly reduce the score to "minimal". Overall, the response has a chance of persuading the reader.

•*Elaborated:* The student has taken a stand, has provided two or more persuasive reasons, and has provided elaboration on at least one of those reasons. Presentation of many persuasive reasons (at least 3) without elaboration can also produce this score. Undermining reasons, faulty assumptions, or irrelevant reasons can possibly reduce the score. Overall, the response is likely to persuade the reader.

•*Exemplary:* The student's response meets criteria for (4) above, and demonstrates (a) at least two elaborated persuasive reasons, and (b) an argument so clear and coherent (i.e., no significant undermining reasons, faulty assumptions or irrelevant reasons) and grammatically correct as to merit public display as an outstanding accomplishment for a high school student. Overall, the response is more likely to persuade the reader.

To apply the criteria, several additional scoring conventions were developed to clarify what counts as a persuasive reason and what substantive principles in the case are considered relevant to the argument for each side.

To determine inter-rater agreement, different pairs of two raters read 492 tests (375 posttests, 117 pretests) which amounted to about 29 percent of the tests completed. The overall correlation between ratings was .80. Raters achieved exact agreement in 65 percent of the cases and agreed exactly or missed by only one point in 98 percent of the cases.[3]

Methodology

The posttest was given to students in classes in grades nine through twelve in 11 of the high school departments studied in the project. These included the seven "representative" departments (Phase II of the study) and the four "restructured" departments (Phase III). "Select" departments were not included, because the first year of data collection (Phase I) did not include plans for student assessment. The posttest was administered to 73 classes, and 1387 students completed it.

Due to limited funding for the project, it was not possible to administer a pre test of higher order thinking in social studies to all students who took the posttest. In the study of representative departments, however, we had access to two tests for ninth graders administered in the fall that could serve as controls for students' writing competence and social studies knowledge at entry. The first was a short answer test of social studies knowledge consisting of multiple-choice and short-answer items drawn from earlier NAEP tests in social studies. For the second, students wrote an essay (in 15 minutes) about a place or a possession that was important to them and were instructed to describe it "as fully as you can and explain why it is important to you." Since neither of these required students to write persuasively about constitutional issues, they can be considered "weak" pretests.

In the study of restructured departments we administered a far more rigorous pretest in the fall. Similar in form to the posttest, this pretest was a written exercise that asked students to persuasively defend their position on a constitutional issue that involved a school principal's censorship of an article in a student newspaper. The structure of the exercise was identical to the Karen Doctor case that was given as the posttest. The scoring procedures and inter-rater reliability rates were the same.[4]

To examine the relationship between classroom thoughtfulness and student performance, we consider three different data sets. Data Set 1 consists of all students in Phases II and III, without considering any pretest data. Data Set 2 consists of the ninth graders in Phase II, the only students who took the "weak" pretests on social studies knowledge and writing. Data Set 3 consists of all students in Phase III, the only students who took the "strong" pretest on constitutional reasoning.

The analyses involve regression of the student's individual posttest score on several variables described in Table 1. These variables include both attributes of the individual student (e.g., pretest score, race, grade-point average) and attributes of the class in which the student was enrolled (e.g., grade level, ability level, percentage of

African-Americans). The variable of most interest in this study is the CHOT score of classroom thoughtfulness assigned to each student enrolled in the observed class.[5]

Results

The central question is the extent to which classroom thoughtfulness (when measured by generic indicators) is associated with students' higher order thinking (when measured by their persuasive writing about a constitutional issue). Before examining the findings, note that the design of the study worked *against* the discovery of a strong relationship between the dependent and independent variable. Performance on the posttest would seem to be maximized by instruction related directly to the test, but none of the teachers concentrated on the teaching of persuasive writing or on the understanding of constitutional reasoning. Instead, instruction concentrated on topics typically pursued in the diverse courses observed, such as US History, World History, Politics, Sociology, Economics and others. Furthermore, the independent variable of classroom thoughtfulness did not assess the quality of instruction for the specific competencies of persuasive writing or constitutional understanding.

A posttest on student thinking related to teachers' specific content goals would have been preferred. This would allow one to test the more useful hypothesis that increased classroom thoughtfulness in the teaching of a topic, as assessed by common indicators, will enhance student performance in higher order thinking on *that topic*. As explained earlier, it was not possible to develop an assessment exercise responsive to each teacher's content goals. We were aware of the odds against finding a strong association between the generic qualities of thoughtfulness we observed and the more specific competencies required for success on the posttest chosen for this study, but we were hopeful nevertheless.

The results are presented in Tables 1-3. The means and standard deviations of Data Set 1 (the full sample of students) in Table 1 indicate that performance on the higher order thinking task (Posttest Constitutional Reasoning) was barely minimal. Most students (66 percent) were given scores of 1 or 2; only 11 percent scores of 4, 1 percent scores of 5. This confirms previous reports of low levels of student competence in writing about complex problems.[6] Levels of Classroom Thoughtfulness also tended toward the lower end of the 5-point scale, with most students (72 percent) experiencing classes that scored below 3.5. This finding is consistent with other studies that have found low levels of cognitive work in high school classrooms. It is particularly

Table 1
Definition of Variables, Means and Standard Deviations for Each Data Set

	Definition	Data set 1 N=1387		Data set 2 N=734		Data set 3 N=342	
		Mean	SD	Mean	SD	Mean	SD
Posttest Constitutional Reasoning	Posttest. Persuasive writing on Constitutional issue of school locker search, scored 1-5.	2.21	1.01	2.04	.91	2.22	.97
Male	Student sex, measured by male=1, female=0.	.48	.48	.47	.50	.53	.45
African-American	Student race, self-report, measured by African American=1, other=0. In this study, most non-white students were African-American.	.14	.33	.12	.32	.20	.36
Parents' Education	Parents' education measured on a five point scale (1=less than high school graduation, 2=high school graduation only, . . . 5=graduate or professional degree) and averaged between two parents, student report.	3.03	1.10	3.32	1.04	2.09	.83

Table 1 (continued)
Definition of Variables, Means and Standard Deviations for Each Data Set

	Definition	Data set 1 N=1387		Data set 2 N=734		Data set 3 N=342	
		Mean	SD	Mean	SD	Mean	SD
Grade-Point Average	Student's grade-point average measured by the student's self report on an eight-point scale (1=mostly below D to 8=mostly A).	5.63	1.58	5.57	1.53	5.80	1.51
Percent African-American	Percentage of African-American students in the class according to teachers' reports.	17.73	20.17	13.66	13.29	30.73	28.81
Class Ability	Mean ability of students in the class, based on teacher report of percent of students in the lowest (1), middle (2) and highest (3) thirds of school achievement, 1-3.	2.05	.53	1.99	.50	2.07	.59

Table 1 (continued)
Definition of Variables, Means and Standard Deviations for Each Data Set

	Definition	Data set 1 N=1387		Data set 2 N=734		Data set 3 N=342	
		Mean	SD	Mean	SD	Mean	SD
Grade Level	Mean grade level of students in the class, based on teacher report of percent of students at each level, grades 9-12.	9.72	.96	*		10.33	.93
Pretest Constitutional Reasoning	Pretest. Persuasive writing on Constitutional Issues of School Censorship, scored 1-5.	**		**		2.27	.93
Classroom Thoughtfulness	Mean of six indicators scored 1-5.	3.12	.66	2.83	.56	3.47	.51

* All students were in the ninth grade.
** Test not given to this sample of students.

Data Set 1: All students in the study who took the posttest.
Data Set 2: Ninth grade students in seven "representative" schools.
Data Set 3: All students in four "restructured" schools.

Table 2
Correlations Among All Variables
Data Set 1 (N=1387)*

	Posttest Const. Reas.	Male	African Amer.	Parents' Educ.	GPA	Grade Level	Class Ability	Percent African Amer.	Pretest Know-ledge	Pretest Writing	Pretest Const. Reas.	Classrm Thought -fulness
Posttest Const. Reasoning	1.00											
Male	-.13	1.00										
African-American	-.20	.02	1.00									
Parents' Education	.20	-.03	-.12	1.00								
Grade-Point Average	.41	-.10	-.14	.20	1.00							
Grade Level	.29	-.01	.00	-.11	.09	1.00						
Class Ability	.43	-.09	-.17	.15	.38	.18	1.00					
Percent African-American	-.30	.07	.39	-.25	-.19	.00	-.38	1.00				
Pretest Knowledge	.43	.09	-.30	.25	.44		.41	-.35	1.00			
Pretest Writing	.29	-.18	-.08	.19	.26		.24	-.11	.29	1.00		
Pretest Const Reasoning	.43	-.10	-.21	.25	.28	.22	.38	-.30			1.00	
Classroom Thoughtfulness	.37	-.07	-.10	.06	.24	.49	.38	-.09	.31	.14	.37	1.00

*Correlations for Pretest Knowledge and Pretest Writing based on Data Set 2 (N=734); all students grade 9. Correlations for Pretest Constitutional Reasoning based on Data Set 3 (N=342); Pretest Knowledge and Pretest Writing not administered to Data Set 3.

disturbing in this study in which teachers most likely to promote higher order thinking were deliberately sampled.

Mean values for the student background variables (sex, minority status, parent's education) were close to national norms. Students' grade-point averages and the ability level of the classes clustered in the mid-range. The grade level of students (teacher-reported class average rather than student self-report) tended toward the lower levels, because of the large number of ninth graders in the Phase II data set.

The correlations of most interest in Table 2 are those associated with Posttest Constitutional Reasoning and Classroom Thoughtfulness. As expected, the posttest scores were most strongly related with the strong pretest, the pretest of social studies knowledge, the ability level of the class, and student grade-point average. Students in the upper grades were more likely to do well on the posttest, and those in classes with higher percentages of African Americans were likely to do worse. The posttest correlated .37 with classroom thoughtfulness, but so did the pretest. These results suggest the possibility that instruction reflects students' initial achievement rather than influencing it.

In other reports of this research we delve deeper into the possible determinants of classroom thoughtfulness, by considering differences in thoughtfulness among teachers and schools and how these differences can be explained by characteristics of the teachers, the leadership and the organizations.[7] But correlations here indicate what might be expected; namely, that thoughtfulness is higher in classes with older students (i.e., higher grade levels), in classes with larger percentages of higher achieving students, and in classes with students who perform better on the pretests.

Possible explanations for the correlations with classroom thoughtfulness are that teachers' expectations for student performance influence the degree to which they promote higher order thinking, that teacher expectations are determined largely by their assumptions about student ability, and that these expectations are influenced by students' age and prior school achievement. Expectations based on these assumptions would result in younger and lower-achieving students' having fewer opportunities to experience thoughtful classrooms.[8] It is encouraging, however, that levels of classroom thoughtfulness were not highly associated with students' sex, parental education, or minority status.

The regression results in Table 3 provide more information on the relationship between classroom thoughtfulness and student posttest scores. Each analysis offers a different way of examining the issue. Analysis 1 examines the relationship controlling for background variables, but not considering the influence of either type of pretest.

Table 3
Regression of Posttest of Constitutional Reasoning on Classroom Thoughtfulness, Background Variables and Pretests

	Analysis1 (Data Set 1)			Analysis 2 (Data Set 2)			Analysis 3 (Data Set 3)		
	B[1]	Beta[2]	p[3]	B	Beta	p	B	Beta	p
Male	-.14 (.05)[4]	-.06	.00	-.15 (.06)	-.08	.01	-.10 (.09)	-.05	.28
African-American	-.18 (.07)	-.06	.01	-.14 (.09)	-.05	.14	.10 (.13)	.04	.43
Parents' Education	.09 (.02)	.10	.00	.04 (.03)	.05	.18	-.03 (.05)	-.03	.57
Grade-Point Average	.15 (.02)	.23	.00	.09 (.02)	.16	.00	.12 (.03)	.19	.00
Grade Level	.19 (.03)	.18	.00				.20 (.05)	.19	.00
Class Ability	.35 (.05)	.18	.00	.11 (.07)	.06	.11	.37 (.09)	.23	.00
Percent African-American	-.00 (.00)	-.11	.00	-.00 (.00)	-.05	.19	-.00 (.00)	-.13	.02
Pretest Knowledge				.02 (.00)	.22	.00			
Pretest Writing				.08 (.02)	.12	.00			
Pretest Constit. Reasoning							.21 (.05)	.21	.00
Classroom Thought-fulness	.20 (.04)	.13	.00	.21 (.06)	.13	.00	.10 (.10)	.05	.28
(Constant)	-1.91 (.26)		.00	-.63 (.25)		.01	-1.90 (.61)		.00
Variance Explained (adjusted R^2)		.34			.28			.39	

[1]B=raw regression coefficient.

[2]Beta=standardized regression coefficient.

[3]p=probability due to chance.

[4]( )=standard error

Here most of the background variables are associated with posttest performance, but the most powerful ones (considering standardized coefficients) are grade-point average, ability level of the class and grade level of the class.[9] Holding background variables constant, classroom thoughtfulness appears to make a difference. The raw regression coefficient indicates that an increase in one point on the thoughtfulness scale would, on average, be associated with a gain of a fifth of a point on the posttest.[10] Whether this is considered "large" or "small" is a matter of interpretation. The total posttest variance explained by these variables is 34 percent.

Analysis 2 includes two "weak" pretests completed by ninth graders and presents a somewhat different picture. Considering the standardized coefficients, we see that posttest performance is most powerfully related to initial social studies knowledge and to grade-point average, but that initial writing ability and classroom thoughtfulness also have influence. In this analysis, perhaps due to controls for pretests, the effects of class ability level, class racial composition, and parents' education are lower than in Analysis 1, and grade-point average also loses some importance. In terms of raw coefficients, a 1 point difference in classroom thoughtfulness is again associated with a fifth of a point on posttest. While total variance explained was less than 30 percent, the fact that classroom thoughtfulness survived the controls for social background and pretests is a potentially important result.

Analysis 3 offers the most rigorous test of the association of classroom thoughtfulness with posttest, because of the inclusion of the strong pretest. Controlling for the strong pretest, along with the other variables, eliminated the association of classroom thoughtfulness with posttest performance. Instead, the pretest, ability level of the class, grade level of the class, and student grade-point average contribute, in roughly equal amounts, virtually all of the predictive power, and this analysis explains more variance (39 percent) than the first two.

Considering the nature of the posttest and the design of the study, this finding might well be expected. On the other hand, since the first two analyses indicated a connection between classroom thoughtfulness and posttest performance, even after controlling for several background variables rarely included in analyses of instructional effects, we were reluctant to allow Analysis 3 to terminate the investigation.

Could classroom thoughtfulness affect performance on this exercise in ways other than those tested in the straightforward linear regressions? Is it possible, for example, that gradual increases in thoughtfulness below a certain threshold would make no difference, but

that students exposed to the highest levels would perform better? We explored this possibility by dividing the 20 classes that took the strong pretest (Data Set 3) into quintiles based on their class thoughtfulness scores (which ranged from 2.72 to 4.33). We asked whether students in the top fifth of the classes would perform better than those in the lower four fifths. Regression analysis indicated no such result, which sustained the finding of analysis 3: in social studies classes focused neither on persuasive writing nor on constitutional reasoning, general qualities of classroom thoughtfulness had no apparent impact on student persuasive writing on constitutional issues.[11]

Conclusion

This study attacked a perplexing problem. Social studies includes multiple fields of inquiry that have not been organized into a coherent, nationally accepted curriculum. In spite of lack of consensus on a core of essential content, there seems to be much agreement on at least three points: (a) diversity ought to be preserved; (b) regardless of what is studied, teachers ought to promote thinking rather than mindless reproduction of knowledge; and (c) students ought to be able to demonstrate competence in analysis and interpretation of social phenomena. Recent national interest in accountability challenges social studies educators to develop common indicators of performance on the last two points: how well teachers teach thinking and how well students learn to think.

This project proposed a conceptualization of higher order thinking and its promotion in the classroom that is applicable to a host of students, teachers, and topics of study. Similarly, it developed an exercise to assess student competence in thinking about important social studies content - constitutional issues. The main empirical problem was, given the diversity in what the observed teachers actually taught, whether the "generic" qualities of classroom thoughtfulness that the project observed would be associated with student performance on the assessment task.

Seventy-three classes in eleven high schools were observed and almost 1400 hundred students were tested. Design variations within the study led to the use of different data sets to estimate the possible impact of classroom thoughtfulness, but all analyses controlled for several background variables at both the individual and class level. Logistical limitations resulted in only 20 of the classes and 340 students taking a pretest that made intellectual demands equivalent to the posttest.

Because our measures of classroom thoughtfulness were not derived from teaching the specific competencies required on the

posttest (i.e., understanding of constitutional reasoning and persuasive writing) and because no teachers concentrated instruction in this direction, we did not anticipate finding a strong relationship between the main independent and dependent variables. We chose to investigate this relationship, nevertheless, for at least two reasons.

First, research on the importance of school and classroom culture suggests that student learning is influenced by general qualities of human interaction, not simply by pedagogic moves tied to the teaching of specific content.[12] The observation scheme used here offered an opportunity for quantitative exploration of the relationship between one aspect of classroom culture (thoughtfulness) and student performance that demanded complex thinking in social studies.

Second, the recent concern with national education standards has highlighted political, professional, and technical issues related to the pluralistic nature of social studies instruction. This investigation could contribute new information on the prospects of using a common observation scheme and a common assessment exercise with classes that differ in the subject matter taught.

After controlling for students' sex, race, parents' education, gradepoint average, grade level in school, ability level and racial composition of the class, and pretests of social studies knowledge and writing ability, classroom thoughtfulness was associated with student posttest performance. When student performance on a pretest virtually identical to the postest was taken into account, classroom thoughtfulness had no association with posttest scores on persuasive writing about a constitutional issue. The lack of relationship is consistent with the point we emphasized earlier: that success in meeting of higher order challenges in a specific content area demands in-depth knowledge in the area, not simply general skills and dispositions. The result seems consistent with research on instruction in a variety of subjects. Generic instructional traits are often not associated with complex intellectual performance in specific content domains. Instead, "what constitutes effective instruction...varies with context" (Brophy & Good, 1986, p.370).

What are the implications of these findings? There is a great risk that the findings will be misinterpreted as evidence that general qualities of classroom thoughtfulness do not enhance student achievement in social studies, and that, therefore, the dimensions of thoughtfulness we propose should not be pursued in teaching. This interpretation is misguided in several ways. First, because the study examined only a very specialized form of social studies achievement (persuasive writing on constitutional issues), its findings should not be generalized to all forms of social studies achievement. Second, since teachers did not teach the knowledge and skills needed for persuasive

writing on constitutional issues, the study offered no evidence on the more appropriate question; namely, whether more and less thoughtful approaches to the teaching of persuasive writing on constitutional issues affects student achievement in this domain. Third, since the study did not assess student achievement in the specific domains that teachers *did* address, it offered no evidence of the impact of general dimensions of thoughtfulness on the quality of student achievement or on higher order thinking in the topics actually taught. Given the study's silence on each of these important matters, it would be premature to use it as a basis for dismissing the importance of classroom thoughtfulness along the dimensions we proposed.

On a more positive note, recall that in analyses 1 and 2, classroom thoughtfulness was associated with posttest performance after taking into account several important background variables. Although each analysis failed to control for a rigorous pretest, the findings are compatible with the prospect that classroom thoughtfulness would be more highly associated with student performance on a posttest of higher order thinking in the topics actually taught. To adequately test the influence of classroom thoughtfulness, a study that assesses student higher order thinking in the topics taught is needed.

We hoped that the project would contribute to practice, not simply by offering evidence on empirical questions, but also by developing instruments to assess the thoughtfulness of teaching and the performance of students on tasks that require higher order thinking. Although we identified generic qualities of classroom thoughtfulness that might function as common indicators of teaching related to thinking, we did not develop a generic test for student thinking in social studies. The test of persuasive writing on constitutional issues calls for specialized competence; i.e., jurisprudential reasoning expressed in writing.

In fact, to rely upon a single exercise to measure generic thinking in social studies is probably misguided. Instead, it would seem more prudent for future work on assessment to aim toward a diverse set of tasks. Ideally, these tasks would be sensitive to teachers' diverse content objectives, but they could be scored according to generic qualities, such as depth of understanding or skill in summarizing arguments. While success on the tasks would require domain-specific competence, a set of common scoring criteria would hopefully assess how students use in-depth knowledge, skills, and dispostions to solve the diverse kinds of higher order challenges that can enrich instruction in social studies.

Endnotes

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[2]See Norris (1989) for further discussion of this point.

[3]These rates of agreement are consistent with, but slightly lower than those achieved in NAEP scoring of persuasive writing. This was to be expected, because our scoring required more complicated judgements about students' use of subject matter.

[4]Logistics did not permit administering a pretest on reading ability. But since the pretests that were used and the student's grade-point average could be expected to correlate highly with reading ability, an additional control for reading seemed unnecessary.

[5]Rather regressing class mean posttest scores on class mean independent variables, we chose to use the individual student as the unit of analysis. Analysis at the individual level gives more information, because it allows examination of the association between the individual posttest score simultaneously with both individual and class level variables.

[6]In Data Set 3, pretest and postest means were virtually identical. Assuming that the tests were of equal difficulty, this indicated no overall improvement in performance over the academic year. The assumption of equal difficulty was confirmed through a separate study in which the tests were randomly assigned at the same point in time to two groups of students (N=106), grades 9-12 from three high schools. While the means were somewhat higher than in Data Set 3, there was no difference in the means of the groups that took each test (posttest =2.43, pretest =2.44).

[7]See Ladwig (this volume), King (this volume), Newmann (1990b, in press), Onosko (1989, 1990, this volume).

(continued on next page)

Endnotes (continued)

[8]Calling attention to teacher expectations (an unmeasured variable) as a way of explaining these correlations is not meant to dismiss or to underestimate the actual difficulties teachers face in promoting higher order thinking with younger and low achieving students.

[9]The students tested were not drawn randomly from a larger universe of students, and, therefore, it is not technically instructive to report tests of statistical significance (p values). On the other hand, we have no particular reasons for assuming that these students would not be representative of a larger universe to whom the findings might be generalized. The p values are included to provide information for readers who may be curious about the probabilities due to chance if random sampling were assumed.

[10]To compare the magnitude of influence among independent variables measured in different metrics, it is useful to refer to standardized coefficients. To estimate more concretely how a change in a given independent variable might affect a dependent variable, it is useful to refer to raw regression coefficients.

[11]Regression analysis in Data Set 3 was limited by the number of classes. Although more than 300 students took pre- and posttests, there were only 20 classes, thus only 20 distinct scores for classroom thoughtfulness, and in the quintile analysis only 4 classroom thoughtfulness scores per quintile. A better design for the study would have included many more classes (e.g. 100) which took the strong pretest. This would allow us to study (through hierarchical linear modeling) the variation in association between classroom thoughtfulness and posttest that might be due to different types of classes while simultaneously analyzing the effects of individual level variables (e.g. social background, gpa, and pretest) on posttest scores.

[12]See Lightfoot (1983), McNeil (1986), Metz (1986), Powell et al., (1985), Rutter et al., (1979), Sedlak et al., (1986).

APPENDIX

Reasoning About Student Locker Searches

This reading presents a court case involving the search of a student's school locker by a school administrator. Though not an actual case, it is based upon cases presented to the U.S. Supreme Court. You are to be the judge. As you read, be thinking about how you might decide this case.

Appendix (continued)

The case of
State of New York v. Karen Doctor

A teacher at a high school in New York discovered, Karen, a 16 year old sophomore and her friend smoking cigarettes on school grounds in clear violation of a school rule. The teacher took them to the principal's office. Karen denied that she had been smoking, saying that she did not smoke at all. The Assistant Principal, Mr. Hardy, then insisted on seeing the contents of her purse. He found a pack of cigarettes and also a package of rolling papers which are often used to smoke marijuana. He then decided to search Karen's locker.

With Karen present at the search, Mr. Hardy discovered in her locker a small amount of marijuana, a pipe, a note card with a list of students who owed her money, and two letters that indicated she was involved in dealing marijuana. He then contacted the police and delinquency charges were brought against Karen. In court, Karen's lawyer argued that the search of her locker violated her constitutional rights and therefore the evidence found in her locker cannot be used. The case should be dismissed. The attorney representing the school and Mr. Hardy argued that the school had reasonable grounds for searching her purse and her locker and therefore the evidence uncovered can be used in the trial. She should be found guilty.

Background Information

The following information is provided to help you think about the case. Please read carefully. You should use this information in writing your argument.

All citizens have certain rights which are guaranteed in the United States Constitution. The Fourth Amendment states, "The right of the people to be secure in their persons, papers, and effects, against unreasonable searches and seizures shall not be violated and no warrants issued, but upon probable cause..." In other words, citizens have a right to privacy. Government officials and other authorities such as the police may not search any citizen or their personal possessions without good reason or "probable cause." For example, the police often must present evidence to a judge that something illegal is located in a specific place before they can conduct a search. The judge decides if the evidence is enough to justify the search, and if so, the judge issues a search warrant to the police. A search warrant is a document signed by a judge that gives authority to the police to search a specific place for specific items.

As you consider the case, keep in mind that school officials are viewed by the Courts as a type of government official or authority.

They have a responsibility to maintain order so that learning can take place, and a responsibility to protect students from harming themselves or others. This may, at times, involve the search of students, their possessions, and their lockers.

There are several general principles that the U.S. Courts have used to help them decide cases involving the search of students and their possessions. These are called precedents. The following principles or precedents are summarized to help you decide the case of *New York v. Karen Doctor.*

First, the Courts have developed the principle that school officials serve as representatives of parents during school-related activities, and, in some situations, have the right to act as a student's parent.

Second, the Courts have decided that, unlike the police, school officials can conduct searches without a warrant if they have "reasonable suspicion" to believe something illegal or dangerous is present. However, there must be evidence that something harmful is hidden by a student.

Third, the Courts have decided that the danger of the items for which the search is conducted must be balanced against the student's right to privacy. Therefore, school officials must decide how dangerous the item is before conducting a search. The student's age, history, and school record, and a teacher's past experience with the student can provide information to decide if there is reasonable suspicion to conduct the search.

Fourth, the Courts assume that student lockers are different from a house, motor vehicle, backpack or even a rented private locker. School lockers are to be viewed as having two owners, the student and the school. Lockers are owned by the school, but are assigned to students for their private use under the condition that dangerous or illegal items are not to be concealed.

As judge, you are to answer this question:

Did the school violate Karen's constitutional rights by searching her purse and then her locker?

Please write an argument to try to convince someone of your position on this question. In your argument, you should

- State your position on the question,
- Support your position by giving as many reasons as you can, and
- Explain why they are good reasons.

Keep in mind that your position will be most convincing if you include information from the reading and show weaknesses in the opposing position. Good luck!

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