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AUTHOR McCoy, Leah P., Ed.
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ABSTRACT

This is a collection of papers reporting student research projects at the Annual Research Forum, Department of Education, Wake Forest University (North Carolina). They include: "Student Interest in Studying World History in Relation to Current Events" (Conan Arthur); "Perceptions of High School Student Athletes and Athletics" (Edward Barrett); "Moments of Transition" (Mary Beth Braker); "The Effect of Ability Level on Student-Teacher Interaction in Secondary English" (Brooke Buchanan); "Impact of Math Course Selection on Future Endeavors (Bernice Campbell); "Are High School Students Learning Nutrition?" (Laura Fierke); "Humor in the High School English Classroom" (Christiana Fitzpatrick); "Teacher Questions in High School History" (Carmen Garland); "The Use of Historical Background in Secondary School Literature Classrooms" (Amy Garrett); "Why Don't Students Like Social Studies?" (Charles Gobble); "The Learning Cycle as Used To Modify the Current Biology Lesson" (Sandra Haas); "What Instructional Strategies Do Teachers Use and How Do Teachers Respond When Students Use African-American English in the Classroom?" (Guy Hill); "How Do Teachers Generate and Use Questions in the English Classroom?" (Melissa King); "What are High School Geometry Teachers' Views Toward Teaching Proofs?" (Karen Marshall); "Occupational Gender Stereotypes of High School Students" (Felicia McCrary); "Classroom Environment: Perceptions of How Classroom Activities Influence Student Learning" (Edward McNeal, Jr.); "Student/Athlete or Athlete/Student?" (Ryan Michel); "School Reform--Coalition Style" (Kristan Morrison); "A Hypermedia Guide to the Life and Poetic Works of John Keats" (Bethany Nowviskie); "Block Scheduling" (Sharon Oxford); "What Are the Future Plans of Today's High School Athletes?" (Chris Pfohl); "Critical Thinking Challenges" (Blake Radcliffe); "To What Extent Are Primary Sources Used To Teach History to High School Students?" (Kara Smith); "Predictive Factors for High School Physics Enrollment" (Alice Sy); "How Do Single-Sex vs. Coed Science Classrooms Affect Females' Attitudes, Beliefs and Achievement?" (Rebecca Thompson); and "Teachers' Perceptions about Student Learning in Sex Education" (Utasha Watkins). (JLS)

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Edited by
Leah P. McCoy

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Student Interest in Studying World History in Relation to Current Events

By
Conan Arthur

With
Dr. John H. Litcher, Ph.D.

Wake Forest University
Department of Education
December, 1995

PURPOSE

As a student of history, I am both concerned and fascinated by widespread lack of interest towards world history demonstrated by high school students. Almost every day, the world undergoes important changes in politics, economics, religion and military alliances and conflicts. In today's world, such events, which may seem isolated geographically, often have a direct impact on our lives despite the fact that we may be thousands of miles away.

Often, a clearer understanding of the importance of world events hinges on a clear understanding of the events which preceded them. Thus current events and world history are bound to one another. If the U.S. is to maintain its role as a leader in today's global community, the study and understanding of world history is crucial. However, if today's students find world history too boring, our task of educating them is obviously a daunting one. Perhaps it is not enough to simply teach students that certain events have occurred; perhaps they must also be shown that certain events are having a direct impact on their present and future lives. Many educators believe that this goal can be achieved by tying current events to history lesson plans in a thoughtful, meaningful way.

The purpose of this research study is to examine the current level of interest in world history among high school students and to determine whether high school history students feel that studying world history in relation to current events would affect their level of interest in the subject. I also hope to determine whether student interest in certain historical fields (political history, economic history, religious history, military history and social history) would benefit more than others from the use of current events.

LITERATURE REVIEW

Much attention has been paid to the problem of lack of student interest in world history. Researchers and teachers alike have discovered that a major cause of such disinterest is the perception among students that world history is irrelevant (Pfannkuche, 1971; Evans, 1989). Educators have recognized the importance of tying history lessons to current events with which students are familiar and, hopefully interested. However, despite this recognition, there has been surprisingly little research undertaken in relation to the role of current events in social studies education (Merryfield, 1993).

Many suggestions have been made as to how current events could and should be effectively incorporated into lesson plans. Two of the most common methods are the concept of "reverse history" (Pfannkuche, 1971) and the use of media sources in comparison with, or relation to, the existing curricula (Merryfield, 1993; Wilson, 1993; and Rhoades,1994). In order for teachers to use either of these methods effectively, Pfannkuche and Evans both stress the need for teachers to be given more freedom to establish their own curricula.

Although many teachers realize the potential benefits of combining world history with current events, too many are reluctant to implement such a system. Their reasons include: Minimal understanding of many current events; inability to effectively tie current events to the curriculum; and most importantly, feelings of restraint or limitations in time and scope because of rigid curriculum guidelines (Pfannkuche, 1971; Evans, 1989; and Merryfield, 1993). Not only has such restraint prevented history teachers from taking full advantage of the use of current events, it has also limited the amount of research carried out on the effects of current events on student interest in world history.

Merryfield (1993) found that the Gulf War provided social studies teachers with ample opportunities to incorporate current events into their classes. Students were generally interested in the war and well-informed, making it difficult for teachers to avoid discussion of the subject. However, our society seldom experiences events which captivate our attention for an extended period of time the way the Gulf War did, making it difficult for teachers to choose "interesting" and relevant news items every day. Even during the war, Merryfield found that some teachers were reluctant to devote much class time to current events.

Campanella (1991) has found that many students are either disinterested in, or unable to, use current events media effectively. However, it is uncertain whether Campanella's findings indicate that using current events in history would be unproductive or whether tying history to current events would improve student interest in both world history and current events.

METHODOLOGY

Forty (40) tenth grade world history students at a public high school in the southeastern U.S. were chosen as subjects for the study. Subjects participated strictly as volunteers and were not paid. Gender, ethnicity, GPA and socio-economic status were not con-

sidered during the recruiting of the volunteers or data collection and analysis. All responses were kept confidential.

The subjects were given approximately 10 minutes of regular class time to fill out a questionnaire which determined their level of interest in world history, their perceived positive and negative aspects of world history class, their level of interest in current events (in general and in terms of specific areas), and whether studying world history in direct relation to current events would affect their level of interest in the subject. The subjects were also asked which area of history (political, economic, religious, military and social history) they believed would benefit the most if it were studied in relation to current events.

The data from the questionnaire was then analyzed ethnographically.

RESULTS and DISCUSSION

Student Interest in World History:

Although the literature suggested that high school students are disinterested in world history, over half of the subjects in this study (52.5%) had a great interest in the subject and almost all of them (97.5%) had at least a mild interest in world history. Surprisingly, not one subject had no interest at all in world history. There is an indication that the relatively high level of student interest in world history found in this study was a result of the effectiveness of the subjects' teacher; over one-third (37.5%) of the subjects believed that their teacher or their classroom environment (i.e. class discussions, individual and group presentations and assignments) was the most interesting aspect of their world history class. Only 35% indicated that specific areas of world history (i.e. wars, ancient Rome, Greece and Egypt) were the most interesting aspects of world history. This may indicate that at least some of the subjects were more interested in their world history class specifically rather than in world history in general.

Student Interest in Current Events:

The subjects were found to be less interested in current events than they were in world history. Although not one subject had no interest at all in current events, 12.5% had very little interest and only 12.5% had a great interest. The majority of the subjects had a mild interest in current events. Over half of the subjects (52.5%) were more interested in world history than they were in current events and 40% had about the same amount of interest in the two. Only 7.5% were more interested in current events than in world history.

Adequacy of Current Events in Present World History Class:

Almost all of the subjects (87.5%) felt that their world history class served them adequately in understanding current events which interested them. This is an indication that the subjects' teacher already uses current events in the classroom. All of the subjects with a great interest in current events and 87% of the subjects who had a mild interest in current events believed that their history class served them adequately in understanding current events. Only 10% believed that their class served them inadequately. Each of those subjects had at least a mild interest in current events. One subject abstained.

Interest in Studying World History in Relation to Current Events:

Most of the subjects were receptive to the concept of studying world history in direct relation to current events. Sixty-five percent of the subjects believed that this would make their world history class more interesting. Over half of those subjects (54%) already had a great interest in world history and 42% of them had a mild interest in the subject. The one subject with very little interest in world history believed that studying the subject in direct relation to current events would result in increased interest.

Although a significant number of subjects (32.5%) did not believe that current events would make their world history class more interesting, each of those subjects already had at least a mild interest in world history and over half of them (54%) had a great interest in the subject. Thus when asked whether current events would make the subject more interesting these students probably saw more potential for decreased interest than the other way around.

Almost all of the subjects (95%) believed that knowledge of history was beneficial to a clear understanding of current events. This indicates the subjects recognized the relationship between current events and world history, but contrary to the literature, believed that world history was more beneficial to current events than the other way around.

Of the 5 subjects who had very little interest in current events, 80% of them did not believe that using current events would make history more interesting. The fifth believed that current events would make world history more interesting which is probably a result of the fact that the subject had very little interest in world history as well.

Of the 30 subjects who had a mild interest in current events, 70% believed that current events would make world history more interesting. Only 27% of these subjects did not believe that current events would make history more interesting but all of them already had at least a mild interest in world history and over half of them (62.5%) already had a great interest in the subject as it was presently taught. One subject abstained from answering the question.

Of the 5 subjects who had a great interest in current events, 80% of them believed that studying world history in direct relation to current events would make world history more interesting. The fifth subject inexplicably did not believe that current events would make world history more interesting despite the fact that the subject had a great interest in current events and only a mild interest in world history.

Benefits of Current Events in Specific Areas of History:

Although social issues were the most popular area of current events (17 highest rankings), a pronounced majority of the subjects (21) cited political history as the area of world history which would be improved the most (in terms of interest level) if it were studied in relation to current events. Only 6 subjects felt that social history would benefit most from the use of current events. Military history was cited by 9 subjects as the area which would benefit most from the use of current events, religious history was cited by 8 subjects and economic history was cited by 5 subjects.

CONCLUSION and DISCUSSION

Although this study found that high school student interest in world history was relatively high, it should be noted that all of the subjects had the same teacher. This is significant because a substantial percentage of the subjects indicated that they were most interested in their teacher specifically, as well as their teacher's use of class discussions and dramatic interpretations. This is an indication that some of the subjects may be more interested in their teacher's class specifically, rather than in world history in general and may have been the result of ambiguity in the questionnaire.

A pronounced majority of the subjects preferred world history to current events. However most of the subjects did have at least a mild interest in current events. Thus it was not surprising that most of the subjects believed that studying world history in direct relation to current events would make history class more interesting. The subjects who were unreceptive to this concept were probably influenced by their existing high level of interest in world history class and were perhaps concerned by the notion of change to the existing format. This is an indication that the use of current events in world history may have a negative effect on the interest level of some students (i.e. students with high interest in world history without current events, and students who have no interest in current events).

Since almost the entire subject group believed that their world history class served them adequately in understanding current events which interested them, it can be assumed that the subjects' teacher has already made fairly extensive (and effective) use of current events. Although it is unknown which methods the teacher uses to implement current events in lesson plans, the fact that the majority of the subjects had a great interest in world history indicates that using current events may positively influence student interest levels in world history class.

The data indicates that the subjects thought that political history would benefit the most from the use of current events followed by military history, religious history, social history, then economic history. However, it is unknown what factors influenced this data.

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Perceptions of High School Student Athletes and Athletics

by
Edward Barrett

with
Dr. Leah P. McCoy, Ed.D.

Wake Forest University
Department of Education
December, 1995

As professional sports in this country become more popular and powerful in our society, athletics and high school athletics in particular have come under intense scrutiny from supporters and opponents alike. Those opposed to high school athletics programs feel that too much emphasis is placed on victory, and that the costs and staffing disputes resulting from athletics are balanced by a benefit to small minority of students. Those who support high school athletics say that athletes learn teamwork, discipline, and responsibility through athletics. They point out that athletics greatly improve school spirit and bring together students. Both sides of this argument bring interesting points to light, but what are we to do?

Following the NCAA's 1983 decision to include minimum SAT scores and GPAs for incoming freshmen, many have attempted to find out if the "dumb jock " still existed. Spreitzer and Pugh (1973) found that contrary to common beliefs, student athletes have higher educational expectations as compared to classmates from similar backgrounds. In 1991, Summers found that the mean high school GPA of selected student athletes was 3.00 and that their mean SAT score was 962. So student athletes work at a level equal to or greater than their peers and expect themselves to continue their educations. McNamara (1985) also found that of a large sample of high school seniors, 51% participated in athletics and that those students with high or moderate involvement in athletics, over 66% had a B average or better. Unfortunately, Zingg (1982) found that the idea of the "dumb jock" still affects the entire athletic community.

Tannenbaum (1962) found that in peer culture, athletics was far more valued as compared to academics. He uses the fact that athletics are more important in peer culture to show that participation in athletics leads to better social adjustment and subsequently into higher peer status. Johnson (1986) even found that as early as fourth grade, students saw athletic ability as positively related to popularity in their peers. Cramond and Martin (1987) found that teachersalso felt that athleticism was a greater determinant of popularity than brilliance or studiousness. However, Sparent (1988), Massengale (1977), and Braddock (1979) all found that teachers often had negative attitudes towards athletes and athletics.

Goldman (1994) found that teachers disliked having student athletes in their classes Snyder and Spreitzer (1979) found that non-athletes perceived athletes as receiving more preferential treatment. How do teachers treat student athletes, and how do teachers and students perceive this treatment? These are the questions to be answered in this study.

Methodology

The subjects of this study consisted of two groups. The first group was made up of 75 students selected based on the classes that they were in. The second group consisted of 20 teachers from the same high school . The school used in the study was a high school in a small Southeastern city with a diverse student body and staff and a large selection of athletic options for students to take part in.

The measures used in this study were two different surveys; one for teachers and one for students. Both surveys were used to determine the respondent's involvement in school sports, what they felt the position of the student athlete was and how student athletes were treated, and how the participant felt athletics affected their school. The teacher survey also included questions asking if they knew of any teachers who had preferences between athletes and nonathletes in their classes, and how they found out if a student was an athlete. After all surveys were collected, the results were tallied.

Results

The student surveys showed that 68% of the 75 students were involved in athletics, with 72% of these involved in school sponsored athletics. Even a larger majority, 75%, felt that athletics helped the school's atmosphere, while only 5% felt that sports were harmful to their school. So not only student athletes feel sports are beneficial. 41% of all participants listed enhanced school spirit as a direct effect of sports in their school. 28% of students responding also said that sports were a way that students could take part in something that was school related yet not academic. Less than 5% of students commented on the negative effects that sports had on their school.

When asked if student athletes were treated differently at their school, 56% said that

they were not treated differently. Of those students who did feel that student athletes were treated differently, 13% felt that they were treated differently by teachers, 18% felt that they were treated differently by administration, and only 3% felt that they were treated differently by students. The kinds of student treatment that students saw also varied. 11% saw certain sports emphasized over others, 8% felt that student athletes were given opportunities that were not available to non-athletes, and 7% of those responding felt that student athletes were given extra time to complete their school work.

The results of the teacher survey showed that 50% of those responding coached sports, with 90% of these coaching school sponsored sports. 95% of teachers said that sports are beneficial to the school in general. 45% of the teachers felt that sports lead to improved school spirit and morale. 30% of teachers felt that sports were another way for students to get involved. Some teachers, 35%, felt that participation in athletics lead to improved student work habits and grades. 30% said that athletics improved student's overall attitudes towards school.

Only 15% of teachers said that they were aware of teachers who preferred to have either athletes or non-athletes in their classes. 65%of teachers said they knew athletes by name recognition, while 55% reported finding out by asking the student directly. Other ways of knowing whether or not a student was an athlete included attending games, in school announcements, and the students always seeming tired or missing work.

70% of the teachers surveyed felt that student athletes were not treated differently in their school, while only 25% said that they were. 20% felt that there were higher expectations of student athletes, while 10% felt that student athlete received differential punishment so that there were no conflicts with athletic schedules. 10% also said that teachers viewed athletes as being on pedestals and that all eyes were on them when they struggled or failed.

Discussion

Both students and faculty agreed that school spirit is very important, and that they all see the connection between school spirit and athletics. As one teacher said "The positive attitude and excitement that the sports program generates is especially helpful in generating school pride". The students mirrored this sentiment. Several of them also went on to say that sports provided one of only a few opportunities for students and teachers to interact outside of the classroom. This sort of bond is important in light of Willower's 1986 finding that students are aware of teachers involvement in and concern for extracurricular activities. A strong sense of school pride that involves teachers and administration as well as the student body will lead to a school where students relate to teachers in diverse ways and will

see their teachers as more than their antagonists in the classroom.

Teachers and students also saw athletics as providing an arena for students to excel outside of academics, as well as a place where students could interact in ways not possible in traditional school settings. One student noted that " (sports) help the atmosphere because they help to promote ... unity among students. They give the diversity of (the school) a common bond." This unity provides a sense of belonging that academics do not permit. "(Sports) provide many students with a sense of belonging they may not have anywhere else," said one teacher. Athletics also provide students with an opportunity to be successful at school in a non-academic manner. Tannenbaum (1962) also found this to be true. Surprisingly, Tannenbaum's connection between athletic participation and status elevation was evident in only 4% of the students' responses and none of the teachers' .

Some teachers did, however, make the connection between athletic participation and improved grades and work habits that were seen by McNamara (1985). As one teacher wrote, " some students find structure, discipline, encouragement, teamwork, and sportsmanship skills in school and sports, but respond to sports. Also, they need good grades and conduct to play sports, so they encourage students to do well." Sports provide a motivation for students to do well in school. One teacher's thoughts represent this idea very well, "Most student athletes seem to have good behavior habits in my classes. They tend to care what the teacher and coach think about them. I think that usually students who will put in extra time and effort in a sports program will come to school and show more effort in class."

Some would argue that participation in athletics would affect a participantss response to the question regarding different treatment of student athletes. The results show that this is not true. The percentages of perceived different treatment are almost identical in athletes and non-athletes participating in this survey. The results also show that the increased perception of special treatment in the eyes of non-coaching faculty seen by Massengale (1977) was entirely nonexistent. It is obvious, then, that the treatment of student athletes is not unlike the treatment of nonathletes, however the benefits inherent in athletics are plain to see.

It is not disputed that there are still some cases where athletes are coddled or given special licence because of who they are. A teacher told of a time where "I was 'encouraged' to change a grade so that a student could participate in sports. When I refused, the principal made the change himself and initialed it." While this may still occur in some places, it is the exception and definitely not the rule. Student athletes are treated similarly to their non-athletic cohorts, yet they see benefits that their peers may not. As one student wrote,

"Sports help by creating a sense of school spirit, getting students involved in the school, and by keeping many teenagers out of trouble. Athletics encourage students to strive for self improvement, and when individuals are improved the school as a whole benefits."

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MOMENTS OF TRANSITION

by

Mary Beth Braker

with

Joseph O. Milner, Ph.D.

Wake Forest University

Department of Education

December, 1995

INTRODUCTION

Lesson plans and classroom management techniques vary from highly formal and rigid to more loose and, to borrow from Dr. Joseph Milner's term, "suppositional" environments. Extensive and valuable research has been conducted by Frederick, Walberg, Kounin and many others on lesson planning, organization, sequencing, and pacing. My research has involved what happens during moments of transition in the classroom, moments important both in terms of time management concerns and for their creative and interactive possibilities. Because transitions have the capacity to either enhance or complicate a lesson's flow, they are a rich subject for study.

PURPOSE

I have sought insight into the question, "What are the most effective processes for transitioning students from task to task while allowing for the social and creative interaction that often characterizes these moments?" I hope that the results of this study

will be beneficial to teachers and students interested in the most effective and encouraging management of transition periods in the English classroom.

REVIEW OF THE LITERATURE

A review of the literature reveals a lively, ongoing discussion about classroom management and effective transitioning strategies. Research has revealed that learning is directly related to the way in which time is managed in the classroom (Frederick and Walberg, 1980; Kounin, 1970). There is consensus that increased management skills are required in initiating and executing smooth transitions; indeed, Arlin (1979) understands transitions to be the predominant mechanism of a teacher's control over lesson timing and pace. Regarding "successful transitions," Kounin (1970) has articulated "smoothness and momentum" as high predictors for student involvement and on-task behavior, and Arlin (1979) has categorized transitions as "structured" (exhibiting clear, definite procedures) or "unstructured" (exhibiting no overt structuring behavior). Teachers indicate the boundaries of transitions (their beginnings and endings) through many verbal and non-verbal markers of which the researcher must be aware during the observation periods (Smith, 1985; Green and Weade, 1985; Kounin and Gump, 1970).

There have been contradictory results regarding the impact of the number and length of transitions during a single class period. While Martin (1989) found that effective teachers used fewer and shorter transitional segments, Smith determined that the most effective teachers used many transitions per class, transitioning from activity to activity quite frequently during the course of the class period. Along with these issues of frequency and length, it seemed important to me to consider the degree of interaction between teacher and student, and among students, during transitions. As Dyson (1987) and Webber (1988) have articulated, interaction during transitions can signify, and foster, a high level of comfort, creativity, and cooperation within a classroom.

METHODOLOGY

SUBJECTS

I observed four English teachers in a North Carolina high school. The teachers taught classes ranging in age from ninth to twelfth grade, and in level from standard to honors. Class size varied from approximately 18 students to 30 students per class. While the

teachers and students in these classes were observed, they were not involved in the data collection process directly, and no names, social security numbers, or any other identification processes were collected or used in the analysis of the data.

MEASURES/PROCEDURES

I observed (as a nonparticipant) twelve hours of classroom teaching in a naturalistic setting, three hours per each of the four teachers included in the study. Using an observation checklist, I recorded specific information regarding teacher and student behavior during transitional segments. The number of transitions used during the class period were noted, and the length of each transition was recorded in seconds using a stopwatch. More subjective information, such as clarity of directions, degree of interaction, and success of transitions, was also observed and recorded, both on the checklist and in informal observer notes. To prevent changes in behavior due to my presence as observer, I did not inform the four teachers about the specific subject of my study.

ANALYSIS

Data from the observation checklists were organized by teacher and summarized using both descriptive statistics and qualitative analysis. Means were computed for the number and length of transitions used by each teacher to facilitate comparison, and the degree of interaction, verbal/nonverbal cues, and successfulness of transitions were compared.

DISCUSSION

To facilitate discussion of results, I will refer to the four teachers observed in this study as Teachers A,B,C, and D. Both in numbers and in more qualitative measures, the four teachers evidenced differences in their management of transitions. Teacher A averaged 4 transitions per class period, with an average transition length of 39.8 seconds; Teacher B averaged 2 transitions, with an average length of 104.5 seconds; Teacher C averaged 2.3 transitions, with an average length of 72 seconds; and Teacher D averaged 3 transitions, with an average length of 64.3 seconds.

Teacher A was consistent in the use of multiple, short transitions, and these transitional segments, though brief, were marked by lively interaction between both teacher and students and among students. The teacher welcomed quick questions during

these moments and often offered general "housekeeping" comments. Some off-task behavior was observed in this classroom at the close of the transitions, but, for the most part, the transitions were successful in moving the class as a whole to the new activity. Teacher B evidenced the least number of transitions per class, although the transitions were generally long and characterized by much interaction between teacher and students and among students; questions (both on and off-task) were asked and answered, and personal conversation was allowed, even welcomed. Like Teacher A, Teacher B normally had to respond to off-task behavior and side-bar conversations which continued after the transition period, but the transitions succeeded with the majority of students.

While the classrooms of Teachers A and B demonstrated interaction and intimacy during transition periods, the classrooms of Teachers C and D were silent for the most part, both for different reasons, I would argue. Teacher C communicated a sense of urgency in the transitional cues, and the students responded quickly. Although the interaction outside of the lesson was limited in this classroom, the energy level was extremely high, the students were focused, and the classroom discussion within the lesson was lively. There was no evidence of off-task behavior or conversations requiring teacher desists. Finally, while Teachers C (2.3 trans., 72 seconds) and D (3 trans., 64.3 seconds) are close in the statistics, they differed greatly in their management of transitions. Teacher D adopted a laid-back, contingent attitude toward the role of facilitator, and transitions were allowed to occur haphazardly, incompletely. While there was no interaction during transitions, neither was there class discussion within the lesson; the class seemed to lack the critical elements of safety, unity, and intimacy. Despite the lack of interaction, the level of off-task behavior in the form of sleeping, daydreaming, and lack of attention was high, and one did not get the sense that an activity/subject had been brought to a close and a new one begun.

Although generalization always carries an element of risk, I would assert that the findings discussed above speak to larger issues of classroom management and climate. In classrooms where transitions, regardless of their number and length, are marked by interaction between students and access to teacher, the overall climate seems to be one of respect and unity. These classrooms are also marked, however, by greater risk for off-

task behavior. Classrooms that lack this interaction during transitions may be manifesting very different realities. The reality of a classroom in which transitions are taken lightly and students remain disengaged throughout transitions and lessons is sad indeed. It seems that the most effective transition strategy is the one that communicates a sense of the value of classroom time and encourages students to transition efficiently so that they might grapple with the heart of the lesson. These results and issues have been deeply engaging to me as researcher and will be explored in greater depth in a larger research paper.

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The Effect of Ability Level on Student-Teacher Interaction in Secondary English Classrooms

by
Elizabeth Brooke Buchanan

with
Joseph O. Milner, Ph.D.

Wake Forest University
Department of Education
December, 1995

I. Introduction

The practice of ability grouping has caused serious debate among educators and researchers. Tracking, or labeling students as above average, average, or below average, seems to greatly impact the students' self-perceptions of himself or herself as teachers react to a student's supposed potential rather than to what the student has proven himself or herself capable of. Many educators believe that rather than individualizing and customizing the educational experience to the diverse needs of students, tracking creates a system of inherent inequality. Research indicates that the frequency and qualities of teacher-student interaction differ markedly among ability levels.

The purpose of this study is to determine to what degree student-teacher interaction and classroom climate differ among ability levels. The primary research interest is to study classroom procedures and activities in average and honors tracked English classrooms and examine the climates of these different classes.

II. A Review of the Literature

In a study conducted by Good, Cooper, and Blakey, in which observations within classrooms were categorized according to whether the teacher-student interaction involved a high-, average-, or below-average student, it was found that students perceived as high and low achievers did indeed interact with teachers differently. Their results concluded that high-expectation students created more public interactions with teachers and made more appropriate responses to teacher questions than did low-expectation students. Furthermore, teachers addressed more public interaction and praise to high-expectation students than to low-expectation students. These results are consistent with previous research and replicate many previously tested findings.

Numerous studies report significantly less wait time, feedback, and teacher interactions with low-expectation students. Rothbart, Dalfen, and Barrett (1971) found that teachers pay closer attention to the responses of bright students. Brophy and Good found that teachers stay with high-ability students longer than with low-ability students after they have failed to answer a question. This increased interaction with high-ability students includes clue-giving, more repetition, and more rephrasing of the question (1977). Low-expectation students receive briefer and less informative feedback and took or were given less wait time than their higher-achieving classmates (Allington, 1980; Gambrell, 1983; Rowe, 1974; Taylor, 1979; Tobin and Capie, 1982). Brophy and Good cite twenty studies, thirteen of which report that teachers more often engage in academic contacts with high-ability students rather than with low-ability students (1974). It was also found that teachers praise high-expectation students more and proportionately more per correct response. Likewise, low-expectation students are criticized more and proportionately more per incorrect response (Brophy and Good, 1974).

Rosenthal's research indicates that high-expectation students enjoy a warmer socio-emotional classroom climate and receive more smiles, head nods, forward body lean, eye contact, and support and friendliness from the teacher than do low-expectation students. Teachers are more generous with feedback to brighter students; high-expectation students receive more praise and less criticism than low-expectation students.

Gambrell (1983) observed a total of 964 questions asked by the teacher to students during instruction of reading comprehension. Of the 964 questions she observed, 609, or 63% were text based. 355, or 37%, were scriptal questions. In the above average class, 52.97% of the questions were text based, 47.01% were scriptal. In the average class, 70.63% of the questions were text based, 29.37% were scriptal. In the below average class, 67.84% of the total questions were text based, 32. 16% were scriptal. Both the average and below average classes were asked significantly fewer scriptal questions. Gambrell concludes that the different "ability groups received differential treatment with respect to teacher-posed questions" (1983, p.79).

III. Methodology

The subjects for this study were ninth, tenth, and twelfth grade honors or standard level English classrooms. Five honors level classes and five standard level classes were observed for fifty minutes each. A tally sheet was kept to record the frequency of four specific student-teacher interactions. In addition, the Brophy-Good dyadic coding sheet was used to record the frequency and type of questions asked by the teacher, student response, and teacher feedback. The results were quantitatively measured according to the frequency of the interaction between the two levels.

IV. Results

A total of 154 questions were observed in the honors classes. Of these, 26, or 16.88%, were process questions. A process question is defined by Good and Brophy (1991) as one that requires students to explain something in a way that requires them to integrate facts or to show knowledge of their interrelationships. 126, or 81.81% of the total number of questions observed in the honors classes were product questions. Product questions seek to elicit a single correct answer that can be expressed in one word or a short phrase (Good and Brophy, 1991). Honors level students answered 84.6% of the process questions correctly and 74.6% of the product questions correctly.

In the standard classes, a total of 128 questions asked by the teacher to the class were observed. Only 15, or 11.72%, were process questions. Of these, 53.3% were answered correctly. 100, or 78.13% of the total number of questions asked to standard level students were product questions. 72% of these were answered correctly.

Teachers responded differently to the correct responses to process questions of the two groups. Teachers affirmed the correct answers of honors students 81.81% of the time. They praised the correct responses of these students 9.1% of the time and summarized the correct answer 9.1% of the time. The correct responses to process questions of standard level students, however, were affirmed only 37.5% of the time. Teachers summarized the correct answer for these students 50% of the time. There was no occurrence of teacher praise after standard students' correct responses to process questions. Teachers made no feedback reaction to the correct answers of standard level students 12.5% of the time.

Teachers affirmed the correct responses to product questions of standard level students 66.7% of the time. The correct responses to product questions in the honors classes were affirmed with almost equal frequency, 67.02% of the time. Teachers summarized the answers to product questions of standard level students 25.64% of the time and praised the standard students' correct responses to product questions only 3.85% of the time. The correct responses to product questions of the honors students were summarized and praised with equal frequency, 13.81% of the time.

Teachers in the standard level classrooms gave the correct answer to students who either did not respond or did not know the answer to the question 77.3% of the time. Teachers gave the correct answer to honors students who either did not respond or did not know the answer with less frequency, only 33.3% of the time. Honors level teachers sustained the response opportunity by rephrasing or repeating the question 25% of the time. There was no occurrence of rephrasing or repeating the question in the standard classrooms although teachers at this level did give clues 9.1% of the time. Clues were

given to honors students 8.3% of the time. In response to students who did not answer or did not know the answer, teachers in the standard classes asked another student the same question 4.5% of the time. Honors teachers asked another student almost twice as often, 8.3% of the time. Also in the honors classes, in response to students who did not know the right answer or made no response, teachers asked new questions or explained the process of achieving the correct answer with equal frequency, 8.3% of the time. There was no occurrence of either of these answer sustaining techniques in the standard classes.

Teachers in the honors classes addressed students by their first names with greater frequency than did standard level teachers. It was observed that teachers addressed honors students by their first names 93 times; teachers addressed standard level students by their first names only 44 times. Honors level teachers used first names twice as many times as standard level teachers.

Standard level teachers allowed student choice in classroom activity 15 times during the observation period. Honors level teachers allowed student choice only once.

Standard level teachers moved away from the front of the room 7 times during the observations. Honors teachers left the front of the room 30 times.

Standard level teachers touched the desk or property of students zero times. Honors teachers touched the desk or property of students 12 times. Interestingly, teachers of both levels touched students with equal frequency, 14 times each.

V. Conclusions

It is apparent from these research findings that student-teacher interactions differ between the different tracks. Teachers asked more total questions and more process questions at the honors level. The correct responses of honors students were affirmed over twice as many times as the correct responses of standard students. Honors students consistently received more praise and more teacher feedback. Teachers at the standard level gave students the correct answer rather than sustaining the question by rephrasing, repeating, asking another student, asking a new, different, but related question, or by explaining the process of arriving at the correct answer, as did teachers at the honors level. It may be concluded, therefore, that honors students receive more academic attention and were more involved in academic interactions with the teacher.

Classroom climate also differs considerably between the two tracks. Honors teachers were more personal and more involved with students within the classroom. Honors teachers used first names 111.36% more often than standard teachers and moved away from the front of the room, toward and within the students, over four times as often as standard level teachers. Furthermore, teachers touched the desks and surrounding

property of honors students more often, thus indicating concern and involvement in the individual students.

The differences in student-teacher interaction and classroom climate between the two levels indicates a definite distinction between honors and standard tracks. Perhaps the most troubling and most significant difference is the discrepancy in teacher feedback. Teachers at the standard level express their lack of confidence and low expectations in the academic potential of their students through teaching methods that are aimed more towards making certain students know the answer rather than ensuring understanding and comprehension through extended feedback and interaction. Standard level teachers consistently abstained from rephrasing and repeating questions or even explaining how to arrive at the correct answer. Not only does this eventually inhibit students both within and outside of the classroom, but it teaches them that understanding is superfluous; that genuine comprehension of subject matter is not necessary. Until the qualities of student-teacher interactions become equal among all ability levels, lower-tracked students will continue to perform at a standard level and will be prevented from achieving success in the classroom.

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Impact of Math Course Selection on Future Endeavors

by

Bernice Virginia Campbell

with

Dr. Scott Baker, Ph.D.

Wake Forest University

Department of Education

December, 1995

Introduction

Today's businesses are demanding well-trained young leaders to step into a flourishing job market. Current occupations require prerequisite knowledge in specific mathematics courses. For example, a student determined to become an engineer needs background knowledge of calculus and an aspiring accountant must have familiarity with business mathematics. Therefore, course selection prepares high school students for their future.

This study examines African-American students' perceptions of the relationship between math course selection and future plans and opportunities and acknowledges who students consult on decisions regarding course selection. Hopefully, the data gathered will stress the importance of obtaining advice from parents, teachers, and guidance counselors when making math course decisions. Little research has been done on how students perceive course selection as having a direct effect on their future.

Review of Literature

Math is one of the "gatekeeper courses" or paths to academic and future success (Polite, 1993). Therefore, students need to enroll in as many classes as possible to maximize their opportunities for success. A study done on the average number of math and science courses completed in high school indicates that whites and asians take more math courses than African-Americans. The graph (Table I) provides information on the average

number of math courses completed during high school. The data is broken up into categories by race and socioecomonic status (SES). From the graph we can see that asians and whites of high SES complete more math classes than blacks and hispanics. From the graph all students of low SES complete fewer math classes than students of middle and high SES (Hoffer, Rasinski, Moore, 1995). Therefore, researchers have concluded that race and socioeconomic status have some effect on the number of math courses a student completes.

African-American students, as well as other students, should seek the advice of knowledgeable adults when selecting math courses. Although research suggests that students from different backgrounds receive different information, advice, and attention from teachers and counselors (Oakes, 1992). Teachers and guidance counselors are not the only resources students have. Parents should become interested in their student's future plans beginning with course enrollment (Kershaw, 1992). If changes are not made within the individual school systems, African-Americans and other minorities will not have a chance at educational and economic opportunities (Kretovichs, Noblit, Rogers, etc., 1995, Vanfossen, Jones, Spade, 1987).

Methodology

Subjects

For this study, a high school in the south eastern region of the United States was selected. The subjects were African-American students currently enrolled in a math course. The math courses varied in content and ability level: Pre-Algebra, Algebra I (A & B), Algebra I, Algebra II, Algebra III, Geometry, Pre-Calculus and High School Math. Fourteen participants were selected. Eight students were selected by teacher recommendations and six were chosen randomly by the researcher.

Procedure

The fourteen participants were given informed consent letters to be returned with their signatures and their parents' signatures. The researcher received six letters and five students were interviewed (One student returned the letter but did not show up for the interview). Interviews consisted of nine main questions and the session lasted between ten and fifteen minutes. All interviews were recorded. The participants were encouraged to be honest and to speak clearly into the recorder.

Analysis

The student's responses were analyzed noting patterns in responses. One of the limitations of the study was the small number of returned consent letters and actual interviews done. Time limitations prohibited further search for participants.

Results/ Conclusions/ Discussions

Source of Advice on Math Course Selection

Participant	Parent	Teacher	Guidance Counselor	Friend	Student
A	X	X			
B	X		X		
C	X	X			
D			X		X
E	X	X			

The results of the study show most students seek the advice of knowledgeable adults when deciding which courses to take. Although most students consult at least one person, (either parent, teacher, or guidance counselor), I believe they should seek the advice of all three sources to make sure their best interests are being met. All of the students recognize a relationship between math and their future plans, In other words, they understand that math skills are important to their future, but they do not understand how math is important. Students realize they must have enough math credits to graduate from high school and to meet college entrance requirements. They also know they will be required to take more math in college. What they do not understand is that success in math courses provides a greater opportunity for a successful future or career. Students see the importance of math with regard to short-term goals such as high school graduation instead of as a long-term goal like college and career plans.Because students do not understand math's full importance to their education and future, they take fewer or the minimum math courses. Here advising becomes very important. Students should be encouraged to take more math. Parents, teachers and guidance counselors should all support this idea.

All of the students in the study had thought about their plans for the future. These goals are obtainable as long as the student stays in school and continues to do well in math. Each student (at the time of the interviews) can graduate with at least the completion of

Algebra II.

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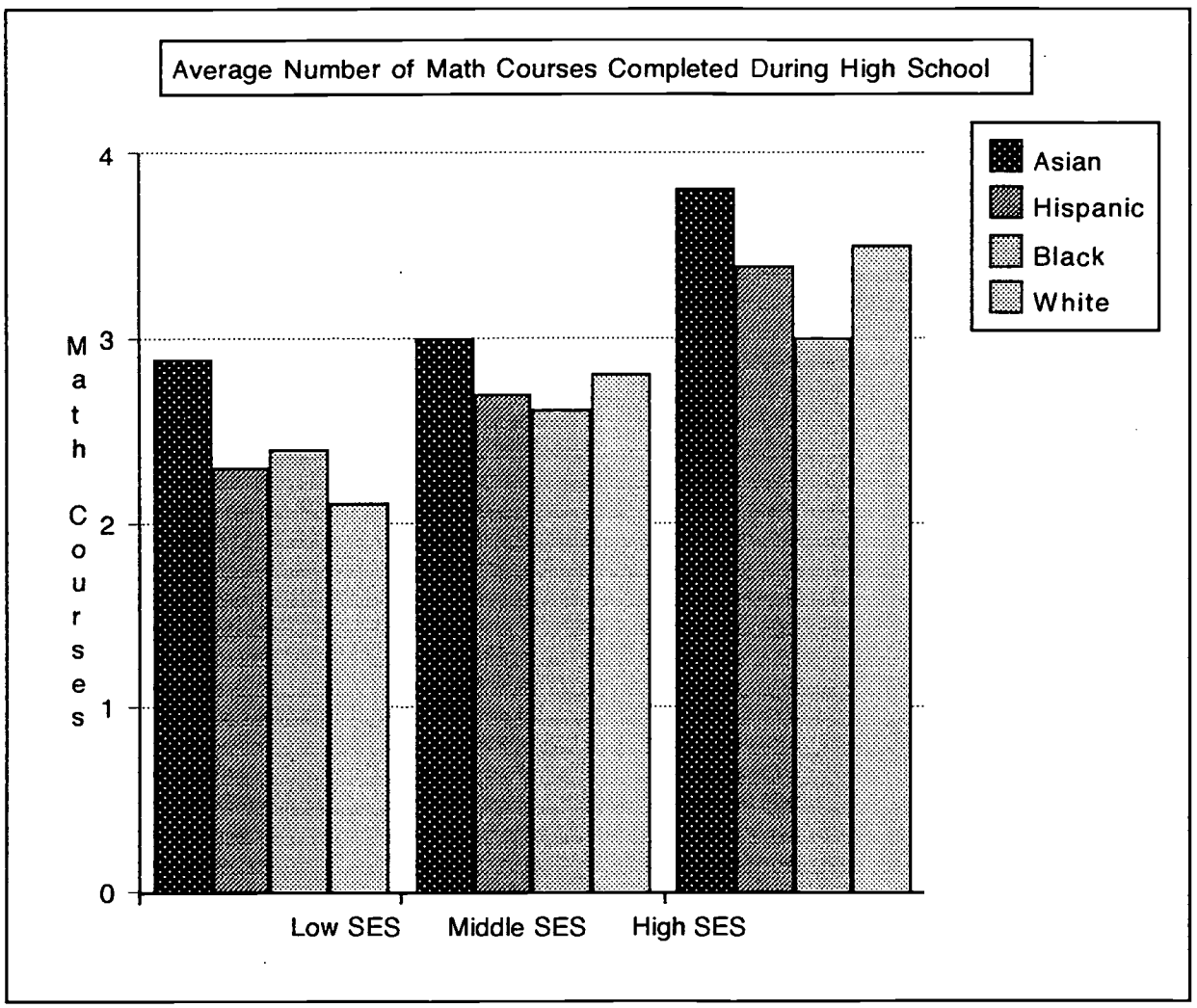
Table I



Note. From, "Social Background Differences in High School Mathematics and Science Coursetaking and Achievement," by T. Hoffer, K. Rasinski, and W. Moore, 1995, National Center for Education Statistics, U.S. Department of Educational Research and Improvement, p. 5.

Are High School Students Learning Nutrition?

by
Laura Fierke

with
Dr. Robert Evans, Ed.D.

Wake Forest University
Department of Education
December, 1995

Introduction

This study is designed to answer the question, "Are high school students learning nutrition?" Due to the increasingly poor dietary habits of adolescents, combined with the growing information about nutrition being an important facet of preventative medicine, it is important to determine how much students actually know about nutrition. Even more significant in terms of science education, it is necessary to determine where they are learning, or not learning about nutrition. Currently, in North Carolina, nutrition is only part of the health education curriculum rather than the high school science curriculum. Do students feel that they know enough about nutrition or do they want to know more? Why do students feel that they know as much (or as little) as they do about nutrition? These and many other questions have been answered by this study.

Review of Literature

A study conducted by Devaney, Gordon and Burghardt (1995) was part of the School Nutrition Dietary Assessment Study. They surveyed 3350 students in grades 1-12. The students were asked to recall all foods and beverages consumed during the previous 24 hours. An analysis of the diets showed that students were more than meeting the recommended dietary allowances (RDAs), consuming more food energy than necessary. Specifically, students consumed more protein, fat, and sodium than is recommended. These results included the students that participated in the National School Lunch Program

(NSLP) and the School Breakfast Program (SBP). In *The National Adolescent Student Health Survey*, Collins, Appel, and Popham proclaim, "Adequate nutrition during adolescence is essential for normal development and may help to avert many chronic diseases. Dietary patterns have been shown to relate to six of the ten leading causes of death in the United States. Diet also plays a significant role in infant mortality, dental caries, and obesity" (1989, p. 98). Sallis (1993) summarizes the potential benefits of a proper diet. The benefits include: meeting the increased need for nutrients during a phase of rapid growth; avoiding obesity which may lead to health problems or psychosocial problems; promoting a normal body composition; lowering the risk of cardiovascular diseases, cancers, non-insulin-dependent diabetes, and atherosclerosis (which begins in adolescence or childhood); and, preventing osteoporosis . Perry-Hunnicutt and Newman (1993) found differences in nutrition knowledge between adolescent dieters and non-dieters; some dieters had higher scores, especially those who had previously had a health or nutrition course. The findings of dieting practices and nutrition knowledge were not specifically compared to each other in this report . In a report of the Alabama Adolescent Health Survey, which found the health behaviors to be comparable to that of the rest of the country, the authors maintain that, "It is apparent that the health knowledge of these adolescents is generally poor. Poor knowledge however, does not always predict poor health behavior...[and] high knowledge regarding health behaviors does not always predict immediate positive health behavior changes. However, more knowledge and education about health topics...improves the likelihood that positive health behavior changes will occur" (Nagy and Adcock, 1991, p. 52).

Methodology

To determine high school students' level of nutrition knowledge, a questionnaire was developed. The questions were based on the Food Pyramid and the nutrition objectives for Middle School in the North Carolina Healthful Living curriculum. The curriculum objectives included basic nutrition concepts such as calories, fiber, sources of nutrients, and balanced diets. Questions were included on the Food Pyramid because the Food Pyramid is the newest tool (replacing the "four basic food groups") to guide the public in eating a balanced diet. The questionnaire also included questions about where the students learn nutrition. These answers were designed to determine how much students feel that they know about nutrition, and the sources of their nutrition knowledge. Additionally, the students were asked to answer background information on themselves (excluding their names) such as gender, grade level, and grade point average in order to determine if there were any differences in nutrition scores between groups. A pilot

questionnaire was tested on six high school students. Verbal comments were encouraged and the data was used only to revise the instrument. Based on the students' comments, some questions were clarified and others were added.

Four classes from a public high school in a small city in the south-eastern United States were chosen for testing. They were selected in an effort to get a cross section of the student body. Every student in each class who was present on the day of testing completed a questionnaire. In total, 83 questionnaires were completed: 19 from a Yearbook class; 15 from a Newspaper class; 27 from an Honors Biology class; and, 22 from an average Earth Science class. Out of the 83, 79 were scored.

Data Analysis

The questionnaires were scored according to a predetermined rubric One question (listing a day's menu to check for correct number of portions), was not scored because the students usually did not indicate portion size in their day's menu, making it impossible to score.The data was analyzed from different perspectives. First, the scores from the total sample were analyzed to quantitatively describe the sample. Next, the means from different groups were compared statistically (using a preset alpha level of 0.05). The effect of gender on score was determined using an independent t-test. The effect of grade level, source of nutrition knowledge, class (class the students were tested in), and grade point average (GPA) on score were also tested using separate one-way ANOVAs. The results from one question, the Food Pyramid question (number eight) were tallied. Students could earn a possible 12 points, and the number of students earning zero points versus the number earning full credit was determined. Questions 15-19, the descriptive questions on learning nutrition, were tallied individually to examine the ranges of answers.

Results and Discussion

For a total of 79 observations, the minimum score was 3 and the maximum score was 70.5 (out of a total of 100 points). The mean was 32.5, and the standard deviation was 13.9. The results were normally distributed The results of the statistical tests indicated that there was a significant difference between the means of males and females ($p=0.019$, $p<0.05$).This may be the result of girls paying more attention to nutrition information in the media, specifically dieting information. There were also significant differences between the classes surveyed. The means for each class were as follows: Yearbook Class, 30.944; Newspaper Class, 46.786; Honors Biology Class, 34.259; and, Average Earth Science Class, 21.700 The means were significantly different at a $p=0.0005$ ($p<0.05$). Scheffe tests indicated that the Newspaper Class mean was significantly greater than the Yearbook

Class mean (F=4.98, F>critical value of 2.76), the Biology Class mean (F=3.64), and the Earth Science Class mean (F=13.05). Additionally, the Biology Class mean was significantly greater than the Earth Science Class mean (F=4.56). The mean for the Newspaper Class was probably so much higher than the other means because the teacher for the Newspaper Class hand-picks students based on their GPA and their writing ability; the students in the Newspaper Class were some of the smartest in the school. It was expected that the scores for the honors science class would be higher than those for the average science class. The students in the honors class are deemed "smarter" by the school system, and they may have taken more science classes.

Finally, the results of the ANOVA for GPA's indicated that there were significant differences in scores for different recorded GPA's ($p=0.008$, $p<0.05$). Scheffe tests indicated that the significant difference was between the "A's" (mean=41.500) and the "B's" (mean=29.880) at F=3.64 (F>critical value of 2.76). The Food Pyramid question was particularly poorly answered.

When asked if they knew more or less than the average student, one answered "much more," 14 said "more," 38 said "average," 17 said "less," and seven said "much less." When asked if they knew enough about nutrition, nine students said that they knew enough, while 54 indicated that they needed to know more. When asked, "why do you have the level of knowledge that you do?" and "what would help you know more?" the answers were varied, but related. Many students indicated that they did not care about nutrition--either they just eat what their parents give them, or they do not pay attention in health class, or they do not pay attention to serving sizes and just eat what they think is healthy. Another problem seems to be that students do not remember what they learn in health class: "I have been taught so long ago I forgot"

Conclusions

It would seem from some of the answers to questions 15-19, as well as from the fact that students who indicated a primary source tended to have higher scores than average, that the students who know the most about nutrition (or think they do) were students who had a special opportunity to learn about nutrition. Sources mentioned as primary sources were doctor(2), sports teams(2), home economics class(1), science class(3). parents(1), TV(1), health class(10), magazines(1), nutrition labels(4), and nutritionist(2).As one can see from the total scores, these high school students could definitely learn more about nutrition. Most students, despite their scores realize that they need to know more about nutrition. They insist that it has been too long since they have had nutrition and that a class in nutrition would help. Overall, smart students who have a

personal motivation to learn about nutrition tend to have the most nutritional knowledge.

If the high school health curriculum includes nutrition, why do students not remember learning about it? It is possible that nutrition is not being covered thoroughly in health class. Many students in this study benefitted from additional classes in nutrition and others suggested that a nutrition class would be helpful. Because students seemed to learn more about nutrition if they had their own reasons, it is possible that what is needed is motivation. Students may not realize the relevance of nutrition information. The topic of nutrition could be presented in a health, nutrition or science class in a way that the student realizes the importance of good nutrition. Teaching nutrition, as with teaching any subject should be more than a presentation of facts. Perhaps teaching methods could be researched in further studies. It may be necessary to incorporate nutrition in other parts of the curriculum.

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Humor in the High School English Classroom

by
Christiana Fitzpatrick

with
Joseph O. Milner, Ph.D.

Wake Forest University
Department of Education
December, 1995

Introduction

The learning process is necessarily complex, and its parts often difficult to label. Teaching style, subject material, student response, and classroom atmosphere all play large roles in the final outcome of each class. Students are challenged and learn from a variety of teaching methods. Often, humor becomes a tool for teachers to use in the classroom. They can use a joke to begin class, they can illustrate a point in a lecture with a well-told example, they can integrate literary terms into conversation in a humorous way, and they can deepen the learning process with natural wit. This list is by no means comprehensive of the varied ways humor can be used in the classroom. The role of humor in the classroom is different for every teacher. We can ask whether students actually learn better when humor is used. Is humor a necessary part of every class? Should it be used constantly or would fewer instances give it more power? Does the natural wit of a teacher make him or her a better teacher? These are some of the questions that led me into my research of humor in the classroom. If humor can be a way to facilitate learning or if it instead undermines the learning process, it deserves our full attention. I determined to find out how often teachers do use humor, what kind of humor they use, and how students respond to that use.

Review of Literature

A team of researchers at Stanford University performed an extensive study on student perspectives on classroom environment, teacher relationships, pedagogy, inter group relationships (Phelan et al. 1992). According to their study,

students feel that in classrooms which are more accepting of individual personalities, they do better academically and personally. In this research, the use of humor as a teaching tool specifically is not studied, but it is a useful study to show the importance of humor in the interpersonal relationships of teachers and their students. We must ask then, what types of humor should teachers use to effect learning in their students? Do better teachers necessarily use more humor? According to Javidi, Downs, & Nussbaum (1988), outstanding teachers do use humor to a greater extent than others do. The humor they use is mostly course related, and often clarifies the subject matter for the students. The researchers call for more descriptive research to determine what happens in the classrooms on an ongoing basis--in other words, theories are not enough. We must understand how good teaching works and the only way to do that is to explore the classroom.

Neuliep (1991) examines the secondary level teachers' use of humor and also derives a taxonomy of teacher humor from teacher responses to questionnaires which asked when and why they used humor. However, he especially concerns himself with the reasons teachers give for their use of humor, instead of using another researcher's taxonomy. He arrives at a twenty item taxonomy of humor along with ten frequently cited reasons for using humor in the high school classroom. This taxonomy covers a wide variety of teacher humor in the classroom, noting quality of humor over quantity as the important finding. The author suggests, in addition, that humor is not a good learning strategy, but instead serves better in making the classroom environment more conducive to learning.

A study by Ziv (1988) contradicts this finding. His research suggests that humor is an effective teaching tool. By randomly assigning students to two classes of college statistics with the same teacher, he finds that material related humor helps in comprehension of material. Students in the classroom in which humor played a carefully planned role did significantly better on the final exam. Ziv calls for teachers to be trained in using humor effectively in their classrooms as a major part of their education because it can have such a positive effect on student learning.

A comprehensive study by Corey Rainsberger determines that humor is a major force in reducing stress and tension in the classroom--not only for the students, but also, to a greater extent, for the teachers (1994). Through a seven item survey to teachers and students concerning coping mechanisms involving

humor to deal with stressful classroom and school-wide situations, he notes that humor makes the teacher more approachable, that it can resolve conflicts in the classroom, that it makes class more enjoyable on the whole, and that it facilitates learning by leading to higher order thinking. As we move toward seemingly more stressful school environments, humor's place in education becomes more and more essential. This research has led me to realize the need for further investigation into humor in the secondary English class especially.

Methods

For this study, I observed four English teachers in a medium sized city in North Carolina. Two of the teachers were female, and the other two were male. The classes I saw included ninth grade honors, tenth grade honors and standard, senior honors and standard, composition classes, and journalism classes. This variety provides me with a wide range of student abilities and interests brought together in the English classroom. After preliminary observations without specific note-taking on the use of humor, I began observing carefully using the taxonomy developed by Neuliep (1991) which is below.

Teacher Targeted Humor
1. Self-disclosure (related to course)
2. Self-disclosure (unrelated to course)
3. Self-disclosure (embarrassment)
4. Teacher Role Play (related)
5. Teacher Role Play (unrelated)
6. Teacher Self-deprecation

Student Targeted Humor
7. Error Identification
8. Friendly Insult (non-hostile)
9. Teasing (non-hostile)
10. Student Role Play

Untargeted Humor
11. Awkward Comparison/Incongruity
12. Joke Telling
13. Punning
14. Tongue-in-cheek/Facetious

External Source Humor
15. Historical Incident
16. Third Party Humor (related)
17. Third Party Humor (unrelated)
18. Natural Phenomenon Humor

Nonverbal Humor
19. Affect Display Humor (facial express.)
20. Kinesic Humor (physical humor)

This taxonomy allowed me to specifically categorize the type of humor the teachers used during their classes, while examining the teachers' individual personalities in relationship to their students. The taxonomy with its twenty-item category scheme had an interrater reliability of .88, correcting for chance agreement. During the time of categorical observation, I studied 19 class periods over a five-week period. This time period allowed me to see teachers as well as students on good and bad days, dealing with a variety of subject matter.

Findings

While observing the four teachers, I found a wide variety in number of times humor was used, in what type of humor was used, and in when the humor was used. Teacher 1, a male, taught several classes the same material, yet his humor changed for individual classes. He used humor between two and seven times in the six classes I observed. The type of humor he used was fairly evenly divided among teacher-targeted, student-targeted, untargeted and external source humor. He used a low-key approach to humor, often asking students a question that could be taken humorously. He sometimes called attention to his attempts at humor- "an English teacher joke" for example. His students, from a mix of levels, responded to his manner positively, not always laughing, but smiles occurred frequently.

Teacher 2, the other male, offered the largest range of incidences of humor in his classes. In one class, there were fifteen incidences (and probably more) of humor centered around his giving students vocabulary words for the week. However, in the class just prior to that one, he expressed humor in another way. He read his class a short story to exemplify a narrative voice. The story was extremely humorous, but he felt no need to add to the story and let it speak for itself. He, like Teacher 1, had a wide range of types of humor used. The atmosphere in his class was conducive to humor. The students felt comfortable making jokes as well. In this teacher's classes, word plays were common, as was the use of literary terms as part of a joke. The students were obviously used to the teacher's style, and the humor in the class seemed to be an extension of his personality.

Teacher 3, a female, took a more traditional classroom approach. Her humor never targeted herself. She did not share her personal life with the students, but she interacted well with them all the same. Her humor tended more toward student teasing and good-natured correction. The instances of humor ranged from one to five in the classes I saw. The students responded well to her comments, but did not seem comfortable in replying in a joking manner. It appears that there is a serious undertone to this classroom, and the students know what is expected and do it.

The final teacher, #4, a female as well, had a more balanced approach to humor in her classroom. She taught only honors students and supervised work in

the one other period. During that period, she had little cause to humor the students. No learning was taking place, so it makes some sense that they would not need humorous stimulation. The other three periods, her attempts at humor were balanced--four incidences in two classes and five in the other. Her non-verbal expressions were more evident than those of the other teachers. She balanced all five categories of humor, and her students responded well. They laughed with her.

Discussion

From this limited research, I have seen the benefits of using humor, but also have seen several classes that worked well with little humorous reference at all. This study did not encompass testing of student learning, so it is impossible for me to assert whether or not students learn better in a classroom that is conducive and welcoming to humor. In the classes I observed, the students seemed comfortable with each teacher despite the variety of styles and types of humor used by each one. Students seem capable of adjusting to various styles and the teachers who use humor more frequently are not necessarily more effective. Further studies of student response, or teacher intent, and of student learning should be conducted to determine the extent of humor's influence in the high school English classroom.

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Teacher Questions in High School History

by
Carmen R. Graham Garland

with
John H. Litcher, Ph.D.

Wake Forest University
Department of Education
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Questioning is one of the primary forms of teacher-student interaction in the history classroom. Nevertheless, systematic research on questioning techniques and the role of questioning in the secondary history classroom is scant. In an attempt to better understand how questions are actually used in the history classroom, this study examined teacher questioning practices and philosophies. In preparation for this study, I reviewed literature specifically focussed on questioning practices as well as discussions of classroom environment and teacher-student interaction found in various sources. Using a classification scheme found in the question literature, I described teacher questioning practices. In addition, I identified teacher questioning styles and goals, and examined them in the context of problems and issues highlighted in the literature.

Questioning has long been considered an important educational tool, as evidenced by the long history and abundance of question research. Some of the earliest question research, conducted early in this century, found that as much as three-quarters of each school day was spent in question-and-answer activities. Wilen (1986) described the progression of question research, including the "research of Bloom and Guilford (which) gave impetus to major efforts to identify and classify components of the cognitive operation in the classroom" (p. 6). This research resulted in the development of systems and instruments for observing and classifying questions. One of the major findings of

question research has been that teachers ask mostly low-level, recall questions. As Gall (1970) noted, teachers asked few higher-level questions in the classroom.

While questioning has been acknowledged as an important instructional practice generally, its effects are not clear. The research on questions and achievement is contradictory (Redfield and Rousseau, 1981; Winne, 1979). Moreover, some authors have doubted its usefulness altogether. Dillon (1978) suggested, for example, that questions may not inspire thought, participation, and discussion but inhibit them instead. Dillon (1981) argued that teacher questions are detrimental to real discussion because teachers as questioners are in a superior role. He recommended that questions be used during discussion only if the teacher is confused or needs information, or as a last resort, only in the event that it becomes necessary to "gain control of the class" (p. 55). He suggests, in fact, that "this attractive feature may account in part for the predominant use which teachers make of questions, rather than for their supposedly stimulating effect on student thought and discussion" (Dillon, 1981, p. 55).

The primacy of classroom control may have numerous effects on classroom environment, including how teachers use questions. In her study of "silencing" in public schools, Fine (1987) reported that teachers adjust oral, written, and nonverbal expression to control discussions and subject matter coverage with low socio-economic status students. McNeil (1988) argued that teachers sometimes become "more a part of a controlling process than of an instructional one" (433). Goodlad (1984) discussed the relationship between the demands of control and classroom environment, noting "one wonders if the way classrooms are organized and run has something to do with the neutral emotional tone we observed in many of them" (p. 111). While it is by no means apparent that Dillon's arguments are correct, or that questions result in the effects described by other authors, issues surrounding the role of questions in the classroom clearly deserve further investigation.

The current study of questioning behaviors was carried out in a mid-sized Southeastern city. Four history teachers were observed, two in each of two large high schools, for five hours each. Standard, honors, and seminar classes in U.S. history, world history, and biblical history, including students in grades 9 through 12, were observed. Following all five observation periods, each teacher was interviewed for 20-40 minutes.

Questions sought to elicit their questioning philosophies and their views on their own questioning practices. Data were collected during observations and interviews, which took place over a one-month period in November, 1995.

Reviewing field notes and tapes to determine if teacher questioning was a dominant activity, three class periods with each teacher (except Teacher C) were chosen for analysis. (Two class periods with Teacher C were chosen, because only two distinct observations included a significant number of questions. Teacher C had only two separate classes. Both were observed on the same days, and she used very similar questions. During the fifth observation, few questions were asked.) A form based on the Gallagher and Aschner classification system, in which questions are divided into four cognitive levels corresponding to Guilford's Structure of Intellect model, was used to categorize questions. The Gallagher and Aschner system divides questions into four categories based on the thinking processes used to answer them. Cognitive-memory questions ask students to "mentally reproduce facts, formulas, or other remembered content through use of such processes as recognition, rote memory, and selective recall." Convergent thinking questions ask students to "analyze and integrate given or remembered data. The outcome is one expected end result or answer because of the tightly structured framework through which the individual must respond." Divergent thinking questions ask students to "generate independently their own information within a data-poor situation, or take a new direction or perspective on a given topic." Evaluative thinking questions ask students to "deal with matters of judgement, value, and choice" (Wilen, 1986, p. 13).

According to this classification scheme, patterns in the four teachers' questioning styles were similar to those found in earlier research. All four teachers used cognitive-memory--essentially recall or yes-or-no questions--more than any other type. Beyond that, however, there were significant variations among the teachers. Only Teacher A used all four types of questions in each class observed. Overall, Teacher D used cognitive-memory questions more than any other. This may result from the pressure to cover a great deal of content Teacher A spoke about during our interview. She noted, somewhat regretfully, that, "There are times when I ask questions to engage kids in debate, and I would like to do more of that." Evaluative questions, requiring students to

make a judgement or a choice, were the least frequently observed, and divergent questions, requiring independent thought, were not much more frequent.

Teacher A asked questions continuously to elicit student participation. She often restated questions several times, providing students more information and think-time, Her students did not experience the classroom John Goodlad (1984) described in which "barely 5% of instructional time was designed to create students' anticipation of needing to respond." On the other hand, as in Goodlad's classroom, "usually when a student was called on to respond, it was to give an informational answer to the teacher's question" (p. 229). Sometimes, however, Teacher A's simple, cognitive-memory questions were part of a sequence building toward a complex idea.

Teacher B often used questions in a structured but student-participatory manner. Students researched assigned questions independently or in groups, and then presented their findings to the class. Yet Teacher B didn't sacrifice participation for control, a phenomenon Lynn McNeil (1988) noted in which administrators emphasize objectives of control rather than education, leading "teachers ... to structure their courses (to) elicit minimum (student) participation" (p. 433). Still, Teacher B focussed on control sometimes--seminar students answered questions without raising their hands, while honors students were required to raise their hands. He believed honors students, unused to an open environment, might be disruptive without this restriction.

Teacher C focussed on fact questions about specific reading materials. This coincided with her interview comments that questions should focus on finding out if students have learned basic information before going on to higher-order questions.

In addition to many cognitive-memory "fact" questions, Teacher D included communicative, "affective" questions. She used them to consult with students about the pace and progress of the lesson, their level of comfort with material, and their readiness to move on. Although observation time was inadequate to conclude whether her classroom evinces the "neutral" affective environment described by Goodlad, she clearly asked questions in order to make a personal connection with her students.

Interviews with the teachers revealed a variety of goals underlying their questioning strategies. Three goals recurred with at least three out of four teachers: checking knowledge and understanding, encouraging participation, and promoting

thinking. An additional goal was cited by two teachers: demonstrating the relevance of the material. Thus, teachers' asked questions to avoid the very classroom problems cited by Fine, McNeil, and Goodlad. Clearly, these teachers did not subscribe Dillon's views either.

Although the scope of this study was too limited to generalize the findings broadly, the observations and interviews showed that questioning strategies are not simply an end unto themselves, but part of a larger complex of educational issues. Teachers use questions to achieve instructional objectives, but the effects of questions have not been definitively demonstrated by research. The teachers in this study used them to involve and communicate with students, and observation seemed to confirm that at least sometimes these goals were achieved. On the other hand, the literature suggests that the manner in which questions are used may be, in fact, among the practices that hinders genuine student participation in the classroom.

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The Use of Historical Background in Secondary School Literature Classrooms

by
Amy E. Garrett

with
Joe O. Milner, Ph.D.

Wake Forest University
Department of Education
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The question of the inclusion of historical and authorial background into the literature classroom has been heavily debated for decades. The growth of interdisciplinary programs and the use of integrated curricula has recently put that debate further into the spotlight. Changes in literary criticism have also influenced teachers' emphasis and focus in their literature classes. There are many critics and theorists who claim that historical and authorial information is needed to help students more closely engage with and understand the works of literature they discuss in the classroom. There are also many critics and theorists who claim that the inclusion of historical and authorial background into the literature classroom only serves as a simple organizing principle and takes away students' attention from their own experiences as they relate to the works themselves. My study is conducted to determine the emphasis placed on historical background in the literature classrooms and student and teacher attitudes regarding that emphasis.

Purpose and Review of the Literature

Educators see programs that integrate several or all subjects studied as a way to increase critical thinking and problem-solving skills and alleviate problems presented by a fragmented curricula (Moss 1991). Some difficulties with integrated curricula

discussed by teachers in Schumacher (1992) are the need for extreme flexibility and detailed planning on the parts of the teachers, lack of time for some team members to meet and accomplish administrative duties, and the inexperience most teachers have working as a team. One common way of integrating classes and/or subjects is the use of themes. An example of a themed class that specifically integrates language arts and other subjects is as follows: language arts with American government, Arthur Miller's *The Crucible* and issues of censorship, the Constitution, separation of church and state (Moss 1991; Johnson 1980).

Another way to enable connections between subjects for students is for teachers to draw connections in their own classrooms between the subject they teach and others that the students study. For example, Drew (1991) sees the inclusion of literature into social studies classes as a way to turn events into stories about real people and therefore give human aspects of the events that might not otherwise be shown to students. Other activities that allow characters to come alive outside literature are ones that incorporate historical documents into literature classes. Aldridge (1980) discusses a unit that revolves on the theme of immigration that was designed for a pair of teachers, one from social studies and one from language arts. The unit included research, letter writing, critical thinking, and many other skills that teachers endeavor to teach their students (Aldridge 1980).

The question remains, what do teachers focus on in their classrooms when they are teaching literature, text, historical context, social context, or reader-response? Applebee (1993) conducted a detailed study of high school teachers to determine their goals for the study of literature. In this study, Applebee gave the teachers a series of open-ended questions to determine the emphasis they place on certain parts of literature. Their responses ranged from an emphasis on literary analysis (66%) and literature appreciation (57%), to exam preparation (6%) and ethnic or gender awareness (3%). All schools ranked student-oriented goals as over 85% importance. All text-oriented goals were not ranked as highly as the student-centered goals (Applebee 1993).

Miller (1989) says biographical background and information should be given to the students, "not as so much cultural baggage . . . but as a context through which the

[author] and his [literature] is demystified," (p. 6). Miller (1989) gives an example of a poetry discussion that "needs" biographical material as that of the poetry of Robert Frost. Facts of Frost's life, such as his social isolation, lack of recognition as a great poet, sorrow-filled life, etc., "can be invoked to guide our students to a more . . . natural response to the poetry than might otherwise be the case" (p. 7).

Ellis (1987) conducted a study of high school literature classes in Georgia to determine teachers' focus in their literature classrooms. Ellis (1987) found that 79.7% of classroom time focused on ideas from the literature itself and that on the average, two-thirds of classroom time was spent on factual information. History was the focus for only 2.4% of the classroom time and authorial information was the focus for 7.4% of the classroom time (Ellis 1987. p. 111).

There seems to have been very little research conducted on the debate over the inclusion of historical information in literature discussions in either high school or university classrooms. The Ellis (1987) study is the only one discovered that deals with the specifics of secondary school literature classroom time emphases. There were no studies found regarding how much historical information is actually included in either level of classroom, and no studies found about either teacher level's attitude towards the inclusion of historical background in the classroom.

Methodology

The participants in this study are four English teachers, chosen for their Master Teacher status, at a high school in a small city in the southeastern region of the United States. Two classes under each teacher were observed and surveyed. The total number of students surveyed was 56. The discussion of works of literature by the four teachers were observed and recorde on a checklist of detailed information about the use or omission of historical background.

Implications

Most important to students as to what they like the most about the way their teacher introduces works of literature are excitement/enthusiasm (with 13 of 56 responses) and the relation of historical abckground (with 14 of 56 responses). In-depth class discussions, good explanations, and fun activities were also important (with 11, 8,

and 7 responses respectively). Not as common, but important to a few students, were the relation of the literature to the students' lives, note-taking, and preparation through vocabulary.

By far, the majority of students surveyed believed their teacher spent just enough time on historical background of an author/poet and an era when discussing a work of literature, 95% and 86% respectively. Only 5% of students responded that their teacher spent too much time on the discussion of the historical background of an author/poet, 7% felt that their teacher spent too much time on the discussion of the historical background of an era, and 7% felt their teacher spent not enough time on the discussion of the historical background of the era. The majority of students surveyed specified that they used historical background in class discussion (52 out of 56). Historical background use on tests, papers, and reports was equal amongst the students (34, 33, and 32 students respectively).

Character and setting, parts of the literature text itself, were seen by the students surveyed as being most important to understanding a work of literature. Life details and dates of literary history tied for third most important, followed by critical interpretations and details of an author's biography. It is interesting that an understanding of an author's life was seen as more important to the understanding of a work of literature than details of the author's biography. It is unclear if the discrepancy was caused by the wording of the two choices or if students actually see understanding more important than specific details.

Grammar was almost the least popular topic of English. If "Other" had not been included in the tally, due to a lack of reponses from some students, Grammar would have been least popular. A rank of six was added in for every student who did not specify an "Other" topic. Vocabulary was the favorite part of English class, with literature study, poetry study, and writing following in that order, with a range of only 14 ranking points for those four. 13 out of 21 total students surveyed in one teacher's classrooms chose paedeia, which is an open discussion format carefully structured to provide students with the chance to actively engage with material, as an "Other" topic of English that they enjoyed. The average score that paedeia received was a 2.6 on the six-point scale. Students from other classes placed class discussion as an "Other" choice, as well as fun

activities, such as games, class presentations, and drawing about literature. Less common "Other" responses were character sketches, in-class work, thesis-writing work, and quizzes.

Regardless of what was actually observed in the classroom, almost all of the students surveyed stated that their teacher spent just enough time on historical background in the classroom. Observations show huge discrepancies between the amounts of time the teachers actually do spend on historical background in their respective classrooms and teacher interviews show teacher beliefs about the use of historical background in the classroom to be different as well. For example, one teacher saw historical background as very important and used it often in class and another teacher saw historical background as not as important or interesting as text and used it rarely in class. A majority of students underneath both teachers chose just enough time as their choice for the amount of time their teacher spent on historical background in the classroom.

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Why Don't Students Like Social Studies?

by
Charles Gobble, Jr.

with
Dr. John H. Litcher, Ph.D.

Wake Forest University
Department of Education
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Introduction

After teaching high school social studies for five years, I have come to the conclusion that an overwhelming majority of students are in those courses solely because they are required to be there. Given the choice, many students would choose to drop their US or World History course in favor of some other subject. Some students feel that social studies courses are useless "in real life", while others say that social studies are "push-over" courses. This reality poses serious problems for social studies teachers who are struggling to motivate these students to dive into the course material. It seems that students are entering the classroom with preconceived attitudes that diminish the significance of the social studies. In answering the question: "Why don't students like social studies?", I wanted to find out how and why students perceive social studies courses to be different from other courses of study. I also looked for relationships between student's attitudes and the perceived attitudes of student's parents and guidance counselors. Fernandez, Massey, and Dornbusch (1976) identified several questions that need to be answered in order to answer this larger question. I have chosen five of these questions to guide my study.

1. Do students perceive a link between social studies and their future occupations?
2. Is learning social studies considered important by students?

3. Do students perceive that parents, friends, and counselors consider social studies important?
4. How challenging do students think social studies is compared to math and English?
5. In each subject , which is more important learning the subject or good grades?

Review of Literature

There have been many studies in the last twenty years which have examined the ideas and attitudes toward social studies in the secondary schools. Ironically, the general agreement among many of these studies is that social studies is in danger of becoming a thing of the past. Barth, Spencer, and Shepherd (1993) suggest that social studies is slowly losing its reason to exist. They argue that the world and society have been changing at rapid pace, while social studies has remained the same. In their 1991 study, Spencer and Barth stated that "students reflect some radical changes in ways our culture defines itself which possibly render social studies, as traditionally defined, impossible to practice (p. 213)." What they are saying is that there is a sense of alienation between students and teachers when it comes to the importance of the subject matter and the ways that it is presented. Schug, Todd, & Beery (1984) offer that teachers do not do a very good job of communicating why social studies knowledge and skills are valuable. Barth, Spencer, and Shepherd (1993) see the problem as going much deeper than just a failure on the part of teachers to communicate why social studies is important. They describe our age of "me first" and "in your face" as characterized by indifference to the social and political welfare of the community. "Many of today's students fail to ask political and social questions, see no issues, and (like many of their adult counterparts) refuse to acknowledge common problems" (Barth, Spencer, & Shepherd, 1993, 316). The result is that social studies is seen by most students, at all grade levels, as one of the least interesting, most irrelevant subjects in the school curriculum (Shaughnessy & Haladyna, 1985). Moreover, the attitude of students toward social studies generally deteriorates as grade level increases (Fraser, 1981). Schug, Todd, and Beery (1984) suggest that as students get older, they get more career-oriented in their studies. "Since anticipated career futures appear to have an effect on attitudes toward courses and since few careers are directly related to social studies, this may contribute to an unenthusiastic response to

social studies "(Schug, Todd, & Beery, 1984, p. 384). This was not a new idea when presented in 1984. Fernandez, Massey, and Dornbusch conducted a study in this area in 1976. They measured student attitudes to various school subjects across a series of questions related to future careers. They found that students were less likely to see a direct link between social studies and their adult lives than in either math or English. They also found that the perceived attitudes of teachers and counselors had an impact on students attitudes. It is on this research that my study is based.

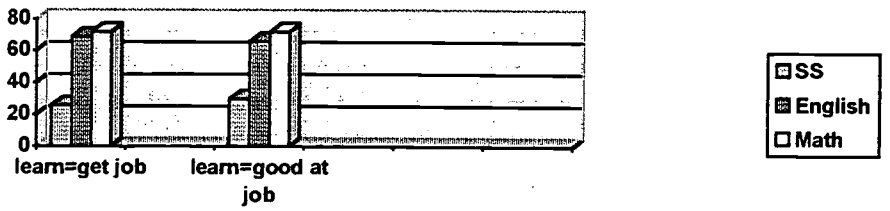
Methodology

The participants for this study were students enrolled in four randomly chosen social studies classes at a suburban North Carolina high school, one class at each grade level (9-12). This sample yielded 90 respondents from a variety of courses. Due to the fact that the participating school system eliminated ability grouping in all secondary-level social studies classes several years ago, the sample chosen should be a fairly random group with regard to student ability and motivation. Each participant in the chosen classes was asked to complete a questionnaire consisting of thirty questions which were answered on a Likert scale. The questionnaires were analyzed to arrive at the answers to the five questions about student's perceptions of social studies in comparison to other courses, namely English and math. The questionnaires were analyzed by grouping the Likert scale answers into three groups: positive, moderate, and negative. This allowed me to calculate the percentage of respondents who answered each question positively. By comparing the percentages. Then I compared different questions to look for relationships between student's attitudes toward social studies and other factors such as student's perceptions of the attitudes of their friends, parents, and counselors toward social studies.

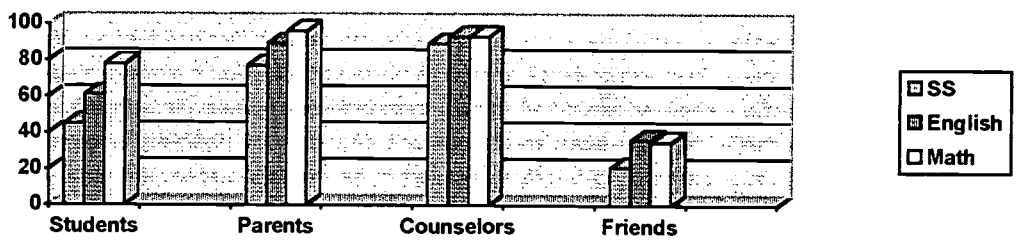
Results

The results of the student questionnaires are summarized by the three graph sets below. The first graph set represents the percentages of students who felt that the subjects listed would be helpful in either acquiring a job in their likely occupation or being good at that occupation. Clearly, students perceive much less articulation between

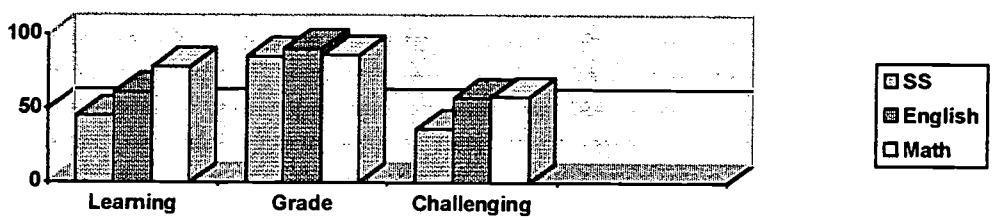
social studies and the type of occupation that they hope to enter, when compared to English and math.



The second graph set represents the percentage of students who felt that it is important to take the different subjects in school. This is followed by the students' perceptions of how their parents, counselors, and friends would answer that question. It is evident that students feel that it is much less important to take social studies than either English or math. The students' attitudes are supported by their perceptions of parents, friends, and, to a lesser degree, counselors attitudes on the importance on these classes.



The third graph set represents the percentage of students who felt that a) learning the subject matter of the course was important, b) making good grades in the course was important, and c) the course is challenging to them. The results show that while grades are universally important, the importance of learning social studies lags well behind English and math. Moreover, students generally feel less challenged in their social studies class.



Conclusions

In reviewing the results of the student questionnaires, I have arrived at disturbing answers to the five questions posed by this study. Students perceive little articulation between social studies and their future occupations. Students perceive learning social studies to be less important than their other courses. Students' attitudes regarding the importance of social studies are supported by their perception of the attitudes of parents, friends, and, to a degree, counselors. Students feel less challenged in their social studies class. Good grades are more important to students than learning the material. I believe that all of these factors work in concert to diminish the effectiveness of social studies as a transmitter of civic education. I fear that the problem is sufficiently large that the public schools alone can not solve it. It is a product of societal dynamics and thus will require societal solutions. However, there are some things teachers can do in the classroom to make their social studies classes more effective.

Teachers must communicate the lasting importance of skills learned in social studies. More active learning experiences and greater variety of teaching methods must be employed. Most importantly, social studies must be taught and learned within the context of community and civic action.

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The Learning Cycle as used to Modify the Current Biology Lesson

by
Sandra D. Haas

with
Robert H. Evans, Ph.D.

Department of Education
Wake Forest University
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1. Introduction: The Learning Cycle model is a teaching alternative to expository methods widely used in the present and the past. Despite its broad applicability, it is rarely used. The current study thus endeavors to determine the extent to which teachers use aspects of the Learning Cycle. The research question is: *How may the current biology lesson be modified to facilitate the Learning Cycle approach?*

2. Review of the Literature:

The Learning Cycle approach is a teaching methodology that promotes the complete development and application of a concept; it uses phenomena to allow students to explore the contexts of science and to build concepts. The phases of the Learning Cycle lesson plan are as follows: 1) exploration phase, 2) term introduction phase, and 3) concept application phase (Lawson, 1995). The exploration phase should lead to the identification of a pattern of regularity in the phenomenon witnessed; it causes students to raise questions, while allowing them to refine their observational skills and to develop skills in creating and testing hypotheses (Lawson, 1995). The term introduction phase applies terms to refer to the patterns discovered during exploration; students should discover as much of the pattern as possible before the entire pattern and its accompanying terminology is revealed (Lawson, 1995). The concept application phase allows students to detach the concept from the initial phenomenon from which it was generated (Kincaid,

1990). A "spiral curriculum" is formed when the concept application phase leads directly into a new exploration (Lawson, 1995).

There are three types of Learning Cycle lessons (Lawson, 1995). They all share the three-phase sequence described (Kincaid, 1990), but are distinguished by whether students describe patterns of the chosen phenomenon only, or explicitly generate and test alternative hypotheses (Lawson, 1995). In descriptive learning cycles, students describe what they observe, without attempting to explain observations (Lawson, 1995). The empirical-abductive learning cycle causes students to describe an empirical pattern and to engage in abduction to determine all possible causes of that pattern. This is followed by introduction of terms relating to the phenomenon and the most likely hypothesis, and finally by concept application (Lawson, 1995). The hypothetical-deductive learning cycle enhances the empirical-abductive learning cycle, through generation of alternative hypotheses, analysis by students deduction of the logical consequences of each, and testing of each (Lawson, 1995).

The theoretical justification for the Learning Cycle approach lies in its ability to allow construction of concepts within a context. A concept can be defined as "a perceived regularity in events or objects designated by an arbitrary label" (Novak, Gowin, and Johansen, 1983, p.625). Because every person has a different conceptual construct, the meaning developed for each concept is unique to each individual (Novak, Gowin, and Johansen, 1983, p.625). Concepts are units of thought integrated into systems of hierarchical knowledge (Lawson, 1995; cf. Novak, Gowin, and Johansen, 1983; Ausubel, 1963). The process of integration of new concepts into an existing conceptual system is called "chunking." The relationships of theoretical concepts near the top of the hierarchy are combined to form postulates and theories (after Lawson, 1995). The type of concept to be constructed can determine the type of Learning Cycle that should be used. The empirical-abductive and hypothetical-deductive learning cycles are best for theoretical concepts. When theoretical concepts are truly constructed, they are less likely to appear as assertive statement of fact by authority (after Lawson and Karplus, 1977).

The teachers in the present study are required to teach concepts in the North Carolina Competency Goals for Biology in the *Teacher Handbook*. These descriptive

and theoretical concepts can be taught along with the required process skills using the Learning Cycle. The *Handbook* promotes the understanding of "unifying concepts" in science, which resemble the postulates and theories constructed by "chunking." Chunking is the most important product of the Learning Cycle. In addition, Yore (1986) found that the "[Learning Cycle paradigm] aided less able students to effectively perceive observations, process information, and develop requisite skills" (p.462). Kincaid (1990) compared his biology classes taught with the Learning Cycle to classes of other professors taught with expository methods. Results of a test of reasoning skills (not on the biological content of the lessons) include the finding that students in the Learning-Cycle-taught classes showed much higher reasoning scores than students of expository lessons (Kincaid, 1990). This can be attributed to generation and manipulation of alternative hypotheses, and shows evidence of chunking.

3. Methods: Study participants were six teachers of two high schools of grades 9-12 in the southeastern U. S. The population of interest was comprised of teachers of first-year biology. Teachers were interviewed and observed, in order to determine how each teacher's lessons were structured, and to what extent aspects of the Learning Cycle were used. A model lesson was developed for each teacher, consisting of the lesson described in the interview that was *most* like the Learning Cycle. The information used for analysis is tabulated in the appendix. Results were used to recommend a modification of the lessons so as to facilitate the Learning Cycle.

4. Results: Of the six teachers interviewed, one used a perfect Learning Cycle of both the empirical-abductive and the theoretical-deductive types. Two teachers described lessons closely resembling the Learning Cycle, but lessons were distinguished in one case by the lack of use of student-generated data and in the other by introduction of terminology before the exploratory phase through a reading assignment. The other three teachers did not have lessons resembling the Learning Cycle, although these various lessons were not identical. The most clear reason for this is the lack of having students generate alternative hypotheses. The lessons mainly sought to teach descriptive rather than theoretical concepts, and a descriptive learning cycle would have been generally appropriate for the goals of these teachers.

5. Conclusions: Teachers have a remarkable ability to vary their lesson plans, and all showed use alternative approaches for at least some lessons during the year. However, the use of aspects of the Learning Cycle is generally hit-or-miss, and rarely results in a complete Learning Cycle in which students are given an opportunity to develop a context for learning new concepts. The presence or lack of divergent questioning had a clear effect on both the goals of teachers and the use of a lesson resembling the Learning Cycle. Chunking, or concept integration within a context, was shown to be present for all but one of the teachers. This is probably a data collection error due to the reporting of teachers that chunking is occurring, despite the lack of assessment measures that could show this to be the case. Chunking cannot occur unless students had developed a context for the new concepts through previous exploration, and this exploration was not in evidence for three of the teachers. This is one of the limitations of the study.

This study predicts increased future use of the Learning Cycle. All of the teachers who use few aspects of the Learning Cycle already use lessons containing excellent material for the latter two phases. In order to implement the Learning Cycle, they should begin immediately to use phenomena to introduce a new concept, and engage in divergent questioning to enable the generation of alternative hypotheses that may be tested. Several of the teachers already use aspects of the Learning Cycle, and for them to implement it, they merely need to avoid exposing new terminology to students before the exploration phase (e.g. through readings). For them, the use of the spiral curriculum would provide a consistent model for the construction of a conceptual hierarchy. Major changes in format or style are not needed for any teacher in order to facilitate the Learning Cycle.

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APPENDIX: Analysis

The Extent to which the Model Lessons of Six Teachers of First-Year Biology Fulfill the Lesson Characteristics of the Learning Cycle Model

Lesson Characteristics	TEACHERS						
	A	B	C	D	E	F	LC[b]
1. Is there a clear phenomenon or set of characteristics to be observed?	yes	yes	yes	yes	yes	yes	yes
2. Is there a causal question?	yes	no	yes	yes	yes	no	yes
3. Are alternative hypotheses being generated?	yes	no	yes	yes	no	no	yes
4. Are the teacher's questions divergent?	yes	no	yes	yes	no	no	yes
5. Are student-generated data being used?	yes	no	yes	yes	no	no	yes
6. Is chunking in evidence?	yes	no	yes	yes	yes	yes	yes
7. Do the related assigned readings come after the exploration & term introduction phases?	no	no	no	yes	no	no	yes
8. Is discovery teaching considered difficult?	no	yes	yes	yes	yes	no	no
9. Does the teacher's model lesson resemble the Learning Cycle?	yes	no	yes	yes	no	no	N/A
a) If yes, which type[a]?	e-a	--	e-a, h-d	e-a, h-d	--	--	N/A
b) If no, which type[a] would be most appropriate for the teacher's goals?	--	d	--	--	d	d	N/A

[a] d = descriptive
e-a = empirical-abductive
h-d = hypothetical-deductive

[b] LC = Learning Cycle

What Instructional Strategies Do Teachers Use and How Do Teachers Respond When Students Use African-American English in the Classroom?

by
Guy Y. Hill

with
Joseph A. Milner, Ph.D.

Wake Forest University
Department of Education
December, 1995

Introduction

This study sought to examine what instructional strategies teachers use and how teachers respond to students who use African-American English. Another goal this study had was to examine how students perceived African-American English. Studies have shown that some black students have been placed in remedial and special education classes largely based on their use of African-American English in the classroom. In order to study what strategies teachers use when students use African-American English, teachers' feelings about and knowledge of this subject also had to be analyzed. Individual teachers' attitudes towards African-American English shape how they respond to it and how they perceive the students in their class who speak it. One's usage of various language systems has no correlation to one's intelligence level and if students who use a Non-Standard dialect of English are viewed as being inferior, this is a problem that must be addressed. The goal of this study is to find out what kinds of perceptions people have and what associations people make when they encounter students who use African-American English or Non-Standard dialectical variations of English.

Review of Literature

African-American English was first considered a dialect of English when linguists did early research on it in the early to mid-sixties (Labov 1967). After further study, however, many linguists have suggested that African-American English is actually a

distinct language, with its own form and complex syntactical structure (Smitherman 1994). Many researchers argue that teachers in general, but especially English teachers should have an understanding of the structure of African-American English and how it differs from Standard English (Bond & Bowie 1994). Linguists also argue that language is cultural, and teachers should be aware that language is a form of cultural expression and should be treated as such (Tate & Edwards 1992).

Geneva Smitherman has done extensive research on African-American English and her book details many aspects of African-American English. This book also contains a short dictionary of African-American words and phrases. Smitherman argues that the speech patterns of many black children are different from other groups because of their unique African heritage. For example, the "th" sound is non-existent in many West African languages (many southern slaves were acquired from Western Africa). As a result, many West African slaves could not pronounce English words that had a "th" sound in them. They pronounced these words with the nearest possible sound, a "t", "d", or an "f." For example, in African-American English the word "teeth" is pronounced "teef", "that" is pronounced "dat", and "with" is pronounced "wit." These and other linguistic differences were passed on from generation to generation by the existence of racial segregation.

William Labov explains other features of African-American English that separate it from Standard English. Labov concentrates on syntactic differences like deletion of the copula (a linguistic form that links the subject with the predicate) so "He is with us" becomes "He with us" and "That looks good" becomes "That look good." Labov also mentions morphological differences such as the word "ask" being pronounced "aks" and the use of the double negative in a sentence such as "He never said nothing" instead of "He never said anything."

Filmore argues that educators should be trained in linguistics and have some knowledge about how language works. McKay argues that teachers should promote language awareness by teaching students that language varies according to region, social class, gender and context and teachers should also teach students to adapt their language to the audience they are addressing. Dumas states that teachers need to be aware of,and teach to their students that all dialects have internal structure and order. She also states that teachers should portray themselves as models of linguistic versatility, not intolerance. Tate and Edwards argue that equity in the schools can only be achieved when language barriers are recognized and teachers are able to understand and accept African-American language patterns and culture. Bowie and Bond argue that pre-service teachers need to be knowledgeable of the language of African-American students and Bowie and Bond are concerned about the potentially harmful effects that negative attitudes can have on students'

opportunities and motivation to learn.

Methodology

Subjects

The participants in this study were four English teachers and eight English classes at a small, southern, high school.

Measures and Procedures

The teachers and two of their English classes were observed for approximately one month. This researcher observed how often students used African-American English, (as defined in the literature review) and how the teachers and students reacted and responded when it was used in class. A questionnaire was given to one class from each teacher (after the observations were made and documented) to gauge how the students in the class viewed African-American English, how much they knew about it, and how they thought teachers responded to it. A questionnaire was also given to the teachers to gauge what strategies teachers use to address African-American English when it is used in their class. These teacher questionnaires were followed up with an interview with each of the four teachers that asked more in depth questions about the strategies they use to address this subject. A total of four teachers were given questionnaires and interviewed and a total of 66 students responded to questionnaires.

Analysis

In response to question number one of my student questionnaire (How often do you use African-American English ?) 45 of 66 students responded that they use it not very often to almost never. Only 20 students responded that they used A.A.E. somewhat often to very often. You use African-American English in class was statement number 2, and 59 of the students responded that they used African-American English not very often to almost never and only seven students said they use African-American English somewhat often to very often in class. It is interesting that 20 students reported they use African American English somewhat often to very often but only seven of these 20 students said they use it to the same degree, in class. Twenty-One students responded to question three (How comfortable do you feel using African-American English in class?) that they were fairly comfortable using African-American English (A.A.E.) in class. A total of 40 students, about 60%, responded that they were fairly comfortable to not comfortable using A.A.E. in class. This number is in contrast to only 25, who responded that they were somewhat comfortable to very comfortable using A.A.E. in the classroom. The response to this statement shows that the majority of the students surveyed feel uncomfortable using A.A.E. in class. To question number four (How do teachers respond when you use A.A.E. in class?), eighteen students responded that the teacher responded indifferently.

Thirty-Six students, however, reported that teachers corrected them for using A.A.E. in class (five students said only English teachers corrected their usage).

In response to question number five (How do fellow students respond when you use African-American English in class?) 30 students replied that they responded indifferently. Eleven students replied that their friends responded negatively to their use of A.A.E. Student A said "my friends laugh at me"; student B said "my friends say it is not proper English and should be corrected" and student C replied "my friends view people who speak A.A.E. as being ignorant and unintelligent." In response to question six (How do fellow students respond when you use A.A.E. out side of class?), 36 students said their friends responded indifferently. Ten students said that their use of A.A.E. elicited responses from their friends such as: "my friends tend to use A.A.E. more freely outside of class", "my friends say I should act 'whiter'", and "my friends say I am trying to imitate a black person."

Results/Conclusions/Discussion

According to the answers given by the teachers in response to the teacher questionnaires and the interview questions, all four teachers respect the students' right to express themselves in African-American English. All four teachers do believe, however, that Standard English should be taught to the students in both writing and speaking, because it is the acceptable mode of communication in the larger society that the teachers are training these students to enter. All four teachers said that public schools should promote the use of dialects for cultural and expressive reasons connected to language, but also said that public schools have a responsibility to teach Standard English to the students. All of the teachers listen carefully to the speech patterns of their students and try to make the students aware of, as well as appreciate language differences. All of the teachers also showed some interest in a unit of basic linguistics being taught to help make the students aware of language differences. In these responses, it is clear that these four teachers' strategies for addressing African-American English are in accordance with the available research, as cited in the literature review.

All of the teachers said they were familiar with the differences between Standard and African-American English, but they all became familiar in different ways. Only one of the teachers replied that they learned about other dialects of English in their teacher training program. This is a problem that Bond & Bowie discuss in their research. Teachers should not be dependent upon their own personal experiences with language to learn about African-American English. Teachers should be taught about African-American English and other dialects in their teacher training programs but apparently this is not happening on a consistent basis. One teacher did report that she learned about African-American English in

some teachers workshops that she attended, so perhaps this is a step in the right direction. All four teachers also reported that they knew of teachers, in the English department of their schools, who had ambivalent feelings towards, or were intolerant of a students usage of African-American English. The teachers reported that usually they would not reprimand the students during class time or discussion because they felt it would prevent the student from expressing himself in class. The teachers responded that they would correct English on a written paper and hold the students to using Standard English in written work. Some teachers would "correct" students in class only if it would not embarrass the student.

The student responses to my questionnaire showed that some of the students had a working knowledge of A.A.E. A considerable number of students, however, reported that they received negative responses and felt ridiculed by students and teachers for their usage of A.A.E. It can be concluded that these negative responses stem from a lack of awareness and knowledge of A.A.E. This lack of knowledge stem from teachers not being taught differences in dialect in their teacher training programs and as a result, these teachers are unable to appreciate dialectic differences among their students and also they cannot teach an appreciation of these differences to their students. This is a problem that must be effectively addressed. Because a student speaks in African-American English, does not mean that this student is not intelligent or cannot use Standard English when placed in a social setting when Standard English is appropriate. The public schools should seek to educate and inform students and teachers of dialectic and linguistic differences, so as to better address the needs of all students.

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How do teachers generate and use questions in the English classroom?

by
Melissa E. King

with
Joseph Milner, Ph.D.

Wake Forest University
Department of Education
December, 1995

Observing and student teaching have helped me realize how important questioning is in the English classroom. Working with different levels of students opened my eyes to the value questioning could have not only in gaining information, but in provoking critical thought as well. As one who has had some experience in the classroom, I know the difficulty of generating effective questions. Therefore, this study will explore how teachers generate and use questions in their classes.

Of the literature available on questioning, the topic of questioning in education represents the largest and the oldest (Dillon, 1982). While questioning is used in other professions, it serves as a most important tool for teachers in the English classroom. In fact, Hyman (1979) asserts 'it is impossible to conceive of teaching without asking questions' (as cited in Dillon, 1982). Studies have shown that "teacher questioning is the basic unit underlying classroom teaching" (Mills, Rice, Berliner, and Rousseau, 1980). Because researchers have found teachers' questioning of students to be the type of classroom interaction that occurs most (Cazden, 1986; Hiebert, 1991), it is no surprise that teachers devote considerable amounts of time and energy into formulating and asking questions. They use these questions extensively to assess their students' learning and to provoke critical thought about the material (Aschner, 1961; Kindsvatter, Wilen, Ishler, 1992). The questions must be effective in order to develop and refine students' thinking skills (Dantonio, 1985). In searching for the most effective kinds of questions, researchers have devised classification systems and examined the effects of teachers' use of the

different types of questions.

Research has tended to focus on classifying questions in order to determine what kinds of questions will best stimulate student thought and learning. During the 1960's alone, at least ten classification systems for categorizing questions emerged (Ryan, 1973; Gall, 1970). Bloom's Taxonomy of Educational Objectives : Cognitive Domain (1956) set the stage for this phenomena. Bloom's taxonomy has been useful in categorizing questions because it provides objectives or goals. The taxonomy classifies the "intended behavior of students-- the ways in which individuals are to act, think, or feel as the result of participating in some unit of instruction" (Bloom, 1956, 2). Thus, teachers can design questions around these objectives of knowledge, comprehension, application, analysis, synthesis, and evaluation in the hopes of evoking a congruent kind of thinking from the students. Despite the fact Bloom's Taxonomy of Educational Objectives (1956) was not designed to do so, it has been most influential in the task of categorizing questions according to cognitive level (Cazden, 1986). Kindsvatter, Wilen, and Ishler (1992) use Bloom's taxonomy as a basis for their question categories of low order convergent, high order convergent, low order divergent, and high order divergent. Low order convergent questions correspond to the knowledge level of Bloom's taxonomy and merely require recall of facts. High order convergent questions correspond to Bloom's comprehension and application levels and call for students to demonstrate understanding and apply information; students describe, compare, contrast, explain, and interpret. Students must think critically in order to answer low order divergent questions as they analyze material to draw conclusions or make generalizations. This category corresponds to Bloom's analysis level. High order divergent questions elicit answers that usually cannot be anticipated because they require students to perform original, creative, and evaluative thinking; make predictions; produce original communications; judge ideas; express opinions; write; hypothesize; and make choices and decisions. These questions correspond to Bloom's synthesis and evaluation levels.

In a study performed by Ryan (1973), it was concluded that low level questioning succeeded in producing low level achievement while high level questions promoted both low and high level student achievement. It appears that both high and low cognitive questions hold some benefit for student achievement. Nash and Shiman (1974) contend that there is no linear progression of questioning. Instead, "the effective questioner moves back and forth" between levels of questions (44). Gall (1984) echoes this idea in the assertion that "teachers' questions that require students to think independently and those that require recall of information are both useful but serve different purposes. The challenge for teachers is to use each type to its best advantage" (41). Low level questions

are just as important and necessary as high level questions (Sanders, 1966). The teacher should still be trying to reach the objectives of stimulating and encouraging student thinking.

Common ideas can be found in the literature regarding tactics for generating questions. One suggestion is for teachers to conscientiously look for the main ideas as they study a topic in preparing their lessons (Sanders, 1966). Also, educators must carefully plan questions so that they are focused and specific. This may require that the teacher write them out during the composing process to ensure they are also explicit, concise, relevant, and comprehensible (Dantonio, 1985; Dillon, 1984; Gall, 1984). Gall (1984) warns that poorly phrased questions create tension because students may feel awkward about misunderstanding the question and about asking for clarification which could be construed as criticism of the teacher. Another helpful tip is for teachers to be aware of the types of questions they ask (Dantonio, 1985; Dantonio & Paradise, 1988; Mills et al., 1980; Nash & Shiman, 1974). Aschner (1961) provides an outline for the design of a good question: "...the teacher needs to begin by analyzing and planning the kind of thinking task to be set. Then he should fit the form and phrasing of the question or problem to this task. Precision and clarity in the wording of the question will focus thinking squarely on its task" (46).

Questioning is important in education and is a skill all teachers should master in order to become effective. Therefore, teachers must learn about the different ways in which questions are classified so they can evaluate the questions they ask. Then, teachers must learn how to generate the questions that best succeed in encouraging growth in students' thinking abilities.

The purpose of this study was to ascertain how teachers generate and use questions in the English classroom. The participants included four English teachers who teach grades nine through eleven at a public high school in the Southeastern United States.

Observations and interviews were used to collect data. Four classes for each of the four teachers were observed to determine how teachers use questions. The teachers were unaware of the purpose of the observations. Each question asked by the teacher was recorded and categorized using the checklist designed by Kindsvatter, Wilen, and Ishler (1992) described in the review of the literature. Totals for all the questions asked and for each level of questions were determined. From this, a percentage of the total number of questions devoted to each level was calculated. It was found that from sixteen hours of observations 870 questions were asked. Seventy percent of the total questions asked were low order convergent. Almost fourteen percent were high order convergent. Eleven percent were low order divergent, while five percent were high order divergent. From these data, it can be concluded that the teachers in this study asked more low order

convergent questions than they did any of the other three levels. An analysis of variance showed that there was a statistical difference in the data. The Scheffe test revealed that the difference was between the mean of the low order convergent questions and each mean of the other three categories. It was concluded that the means of the other levels of questioning-- high order convergent, low order divergent, and high order divergent-- were not statistically different. Therefore, these questions were asked about the same amount of times.

The interviews with each of the four teachers lasted approximately fifteen to twenty minutes, were conducted during each teacher's planning period, and were audiotaped. The purpose of the interviews was to learn the teachers' strategies for formulating questions and their advice in the area of questioning for beginning teachers. All the teachers believe questioning to be important and find it serves many purposes. It stimulates individual thinking, can make students feel successful, keeps students alert, and helps the teacher assess the knowledge of her students. Some of these teachers write down questions as they plan their lessons, but all concede that they also ask questions extemporaneously that tend to stem from the students' responses. They use teaching materials, Bloom's taxonomy, their experience, and even looks on the students' faces to helped them in generating questions. Two teachers noted their ability to phrase questions in interesting ways that show relevance to the students' lives has also made their questions effective. One teacher believes it is because she is always analyzing things herself that makes her a success in asking good questions, while another teacher feels knowing the material has been vital to her success. Finally, these teachers advise beginning teachers to know their students well enough so questions and information can be made relevant to the students' lives. Also, it is imperative that the teacher know the subject matter well and use all the materials available to help in generating questions.

This study found that each of the teachers was consistent with the literature and asked some of each level of questions. The data provided evidence that these teachers tended to place more emphasis on low order convergent questions and almost equal emphasis on high order convergent, low order divergent, and high order divergent. If one views most of the use of low order convergent questions as a means to teach and assess the knowledge of facts and higher level questions as a means to encourage independent thinking, then these data reflect the desire of these teachers to teach all the objectives mandated by the state as well as to teach students to become lifelong learners. Also consistent with the literature, the teachers know about the classification systems, plan their questions, and use teaching materials to aid in generating questions.

While it yielded valuable information about how teachers use questions and

strategies for how they create questions, this study has limitations. A slightly larger sample size and a longer period of observations would be most beneficial in obtaining additional, richer data. Also, this study could be expanded to include student responses which many researchers believe to be equally as important as the teachers' questions. Despite these limitations, I feel I have benefitted from this study in more ways than one. The participating teachers made me feel more welcome as visitor in a classroom than I have ever felt before. What I truly gained the most from were the talks between each teacher and myself after classes and during and after the interviews. The teachers enthusiastically exchanged ideas and opinions with me on a variety of topics. It was a very valuable experience overall.

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What are High School Geometry Teachers' Views Toward Teaching Proofs?

by
Karen A. Marshall

with
Leah P. McCoy, Ed.D.

Wake Forest University
Department of Education
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I. Introduction

In recent years the curricula of high school math courses have been under much controversy. In particular, the Geometry course has been debated and analyzed, for many reasons. Some researchers feel that not enough time is devoted to certain topics in geometry. Others feel that educators should continue to increase computer use in the geometry classroom. Teachers often feel that there's not enough time to teach all the needed aspects of the Geometry course in just one year, especially to adequately prepare students for college entrance examinations. One topic that is common to all these concerns is the teaching of proofs. Opinions vary on how, when and why we should teach proofs, with some believing that students lack the cognitive abilities to do proofs, others feeling that the traditional two-column proofs are not the best way to teach (or learn) proof, and still some who think that technology could be the answer to developing problem-solving skills. Despite the varied opinions, one idea is clear: most educators would agree that the teaching of proofs is an important issue which needs to be addressed.

The purpose of this research is to answer the following questions: How do teachers in high school geometry classes teach proofs, what is the emphasis teachers place on proofs, how do students respond to proof-writing, and what are teachers' views on the importance of proofs in developing students' logical thinking skills?

II. Review of Literature

The *Curriculum and Evaluation Standards for School Mathematics* published by the National Council of Teachers of Mathematics (NCTM) in 1989 contains suggested goals for the mathematics curricula in terms of content and priority. With respect to the Geometry course, the *Standards* recommends that more emphasis be placed on "deductive arguments expressed orally and in sentence or paragraph form" and that the traditional two-column proofs should receive less attention (NCTM, 1989, p. 126-127). From this it is

clear that the national guidelines are suggesting changes in how proofs are being taught. The North Carolina objectives, as well, include suggestions on the teaching of proofs. In the *North Carolina Teacher Handbook: Standard Course of Study*, the goals listed include learning to write a "valid proof using a variety of reasoning strategies" and learning to use four proof methods (flow diagram, two-column, paragraph, and indirect) throughout the curriculum (*Handbook*, 1992, p. 233). Thus both the NCTM's *Standards* as well as the North Carolina Geometry curriculum aspire to teach deductive reasoning as well as to expose students to alternate methods of proof from the traditional two-column type.

Most of the research on proofs has analyzed students' overall achievement with proofs. For example, Senk (1985) reports that on a proof-writing test in high school Geometry classes, only "about 30 percent of students in courses that teach proof writing master this objective" (p. 454). She also found that many students were unable to begin some of the proofs or to "*start* a chain of deductive reasoning" (p. 455). Thus a large majority of students have difficulty with proofs.

Some who study proof-writing examine the developmental level of the students to see if it has a relationship with proof writing ability. For example, Senk (1989) studied students' van Hiele levels and proof writing achievement and found that van Hiele levels accounted for 25% of the variance in proof-writing achievement, a statistically significant contribution. Furthermore, she found that the critical van Hiele entry level at which students need to be in order to have "at least a 50-50 chance of mastering proof writing by the end of the year" was level 2 (p. 318). She also noted that while cognitive factors like van Hiele levels make a significant difference on proof writing ability, still much of the influence lies in the teachers and curriculum (and thus possibly in the type of proof being taught, as this study seeks to analyze). Another similar study done by Battista and Clements (1995) compared both van Hiele levels as well as Piagetian stages to students in geometry classes. They found that students who lack the ability to use deductive reasoning (a van Hiele level of 3 or 4 and a Piagetian stage 3) are unable to make generalizations, establish relationships, or understand the meaning of conclusions or proofs. They suggest that teachers take a less formal approach to proofs.

Summa (1982) did study proof formats on proof writing ability,and he examined two of the four types: two-column and flow-diagram. He found that the group using the flow-diagram method had higher mean scores on the proof writing test than those taught by the two-column method.

In 1975, Gearhart surveyed high school geometry teachers to find out their views toward the Geometry course, including their attitudes about Geometry, their perceptions of students' attitudes, and any changes they favored for the curriculum. Gearhart found that

the vast majority of teachers felt that their students were capable of writing proofs, and that 76% felt that writing proofs is important for their students (p. 487). Gearhart concluded that while "most teachers did not feel that the material is too difficult for average geometry students, they also indicated that many students do in fact have trouble with the material and do not like it" (p. 490).

Many researchers and teachers have provided educators with suggestions and ways to change the teaching of proofs. Brandell (1994) suggests that teachers should focus more on helping students think deductively than worrying about formal, two-column proofs. To do this, Brandell suggests that teachers use paragraph proofs based on outlines of the overall approach to the proof. McGivney and DeFranco (1995) propose that teachers use Pólya's method of guided questioning to help students learn how to develop problem-solving strategies. In this method, the teacher "skillfully guides the students into a process that teaches them not only how to chose the correct approach but how to eliminate incorrect ones" (p. 554). Roberti (1987) suggested that high school teachers include the indirect method of proof since it is so widely used in higher mathematics as well as in everyday logical reasoning. He also favors proof by induction.

III. Methodology

The subjects in the study were six high school geometry teachers, four from one school and two from another. Both schools were in the same school system and thus share the same curricular goals and requirements. The schools will be referred to as School X and School Y. The two teachers from School X will be referred to as Teachers A and B. The four from School Y will be referred to as Teachers C, D, E, and F. All six teachers were interviewed one-on-one, with each interview lasting about fifteen minutes. Teachers were asked questions about which proof methods they teach, how much of the school year is spent on proofs, how well students perform on tests involving proofs, whether they feel that proofs aid in students' development of logical thinking skills, and how students typically respond to proofs. The data acquired from the interviews were analyzed qualitatively, by question and by topic.

IV. Results and Conclusions

When asked how they introduce the concept of a proof, three teachers said that they begin by stressing to their students that proofs are a logical sequence of steps and that in order to do well they must first understand the basic definitions, postulates, and theorems. The other three, in addition to explaining the basic idea of a proof, also incorporated analogies to help the students understand. For example, Teacher E related the idea of writing a proof to building a house using basic materials as building blocks. Another compared it to computer programming, since the computer can only follow a logical

sequence of clearly stated steps. Once teachers introduce and have students practice writing proofs, only one teacher reported that she then expects the students to complete a proof of their own on the first proof-writing test. The other five teachers start by leaving out reasons or steps for the students to fill in until they get a stronger grasp of how a proof should be written. When asked about student performance on the first proof test, the responses were mixed. Teachers C and F felt that students did okay, but not wonderful, but that after more practice, student performances typically improve. Teachers A and B were quite pleased with student performances from the beginning. Teacher D felt that the majority of students don't do as well on proofs as with other topics, but reported that some improve and some don't. Teacher E said that all students can write proofs, but that with average and below-average students, "it just takes a different way of explanation and not as much depth."

With respect to teaching various proof methods, none of the teachers teaches all four proof types included in the curriculum guidelines. The two teachers at School X teach almost exclusively using the flow-diagram type, while none of the teachers at school Y report preferring that type. All four from School Y teach primarily the two-column proof. Teacher F is the only teacher interviewed who permits either the flow-diagram or the two-column proof, depending on student preference. None of the teachers reported spending much time on either paragraph or indirect proofs, although four teachers do expose their students by showing them examples of those types.

Four teachers focus on proofs during the first semester, with little proving required during the spring. Teachers C and F, however, reported that they incorporate proof writing throughout the school year. While all but one teacher noted that students' initial responses to proofs may be negative, they also reported that almost all students do catch on and perform at least satisfactorily on proof-writing by the end of the year.

One idea that all teachers agreed on was that proofs help students think logically, and that the reasoning skills developed from proving can be useful throughout life. For example, Teacher C said that proving "expands their thinking ability. . . It prepares them to really think through the problem." Similarly, Teacher E said that "proving is where the thinking takes place. . .they have to be able to think on a higher level and not just [use] repetition or...what the teacher has already shown them. That does not create thinking. It may create some learning, but it does not create thinking." That teacher also noted, "I don't think we teach Geometry just to learn how to find the area of a floor in a room," meaning that proving is what really strengthens students' thinking skills. While teacher D would agree with the other teachers, she also said, "as far as just meeting requirements for being able to function in the technical world or being able to apply geometry, I don't think that

proofs are *that* essential to *all* students." Similarly, Teacher F reported that while proof writing does help with developing logical thinking skills, its usefulness later in life will depend on what the student plans to do after high school.

What is evident from these interviews is that teachers have various ways of teaching proofs as well as personal preferences on which proof methods to teach. It is encouraging, however, to see that although proofs are not currently on the North Carolina End-of-Course Test for Geometry, teachers are still spending a substantial part of the curriculum teaching proofs. It was interesting that the teachers felt so strongly about proof as a means of teaching higher thinking, and to see that they all stress this importance. Also, according to the teachers, even if students do not respond positively to proof-writing at first, they will, for the most part, perform adequately on proof writing tests. In fact, many of them write proofs even better than they think they can. Perhaps the most encouraging result to note is that all six teachers reported that virtually all of their students *can* understand proofs if they try hard enough.

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Occupational Gender Stereotypes of High School Students

by
Felicia McCrary

with
John Litcher, Ph.D.

Wake Forest University
Department of Education
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Introduction

The purpose of this study was to look at gender role stereotypes as they related to students perceptions of occupations. Stereotypes related to gender are evident at early ages, as shown in studies conducted in groups of young adults (Williams, Bennet, & Best, 1975). The question remains as to whether these stereotypes play a significant part in the development of career perceptions of high school students.

Since gender-role stereotypes are developed in the early years of childhood (Fauls & Smith, 1956), it is expected that the assessment of adolescent groups will show the presence and awareness of gender roles and that these gender roles will be evident in their evaluation of occupational roles. Since the majority of career advising and influencing takes place in the academic setting, it is important to examine the impact of the school environment on the perceptions of gender occupational roles.

Review of Literature

What are gender-role stereotypes? Based on the general definition of stereotypes, researchers agree that gender-role stereotypes are generalizations about men and women that stem from stereotyped reference bases (McCauley, Stitt, & Segal, 1980). In relation to gender, researchers have further hypothesized that the stereotypes associated with assignment of gender role continue to develop throughout adolescent years.

Researchers have assumed that stereotypes are learned through the direct influences

of the surrounding environments. A basic educational goal is providing "equal opportunity to pursue interests, develop talents and grow to full potential" (Barnhart, 1983). Education at the secondary level plays an important part not only in adolescent development but in the formation of career aspirations. During the course of education, students are learning about, evaluating and reviewing possible occupations for their futures (Barnhart, 1983). Within this environment, careful note must be given to factors that continually foster gender specific roles in the classroom and the school.

Studies conducted by Williams and Best (1982) indicate the prevalence of highly sex-typed occupations. "At the professional level in the United States, elementary school teachers and nurses are usually women and engineers and accountants are usually men; at a less skilled level, domestic workers are usually women and truck drivers are usually men; in the business area, most clerical workers are women and managers are men (293). Within the schools this same type of sex typing barriers occur in counseling and course selections affecting a student's career aspirations. Even with the change towards a more gender equitable society and attitudes about gender specific roles, little has been done by educators to combat the traditional roles defined for male and female careers. Occupational stereotyping is still found in a student's assessment of careers. "It remains a fact that many occupations are still widely considered as appropriate only for men, and others, only for women" (Thomas, et al., 1979).

Methodology

Subjects

Participants were selected from a small town high school in the southeastern United States. Twenty-two students were randomly selected from 10th grade history classes. Twelve males and ten females between 15 and 16 years of age were the participants.

Measures/ Procedures

In order to assess a student's perceptions of gender role stereotypes the Shepherd and Hess (1975) questionnaire assessing sex-role attitudes towards occupations was administered. The instrument consisted of a list of 27 occupations. The participant had three options when evaluating each occupation. They were asked to indicate whether each occupation should be performed by a male, female or either. The instrument was scored by giving 1 point for each "male" or "female" circled. The higher the score, the greater the occupational sex-role stereotyping. The possible score was 0 to 27.

Analysis

The results were tallied in percentages. Each occupation was examined for the level of stereotyping present. Male and female scores were also evaluated in order to compare variation of stereotyping among each sex.

Results

Percentage scores for each occupation were calculated and are listed below.

	OCCUPATION	MALE	FEMALE	EITHER
1.	Put out fires	32%	0%	68%
2.	Telephone Operator	0%	27%	73%
3.	Musician	0%	0%	100%
4.	President of U.S.	41%	4%	55%
5.	Automechanic	45%	0%	55%
6.	Author	0%	0%	100%
7.	Lawyer	9%	0%	91%
8.	Deliver Mail	32%	0%	68%
9.	Soldier	50%	0%	50%
10.	Wash Dishes	0%	36%	64%
11.	Librarian	0%	41%	59%
12.	Journalist	0%	4%	96%
13.	Chef	4%	0%	96%
14.	Pilot	32%	0%	68%
15.	Truck Driver	54%	0%	46%
16.	Painter	14%	0%	86%
17.	Teacher	0%	9%	91%
18.	Child Caretaker	0%	41%	59%
19.	Sports Broadcaster	41%	0%	59%
20.	Doctor	9%	0%	91%
21.	Banker	32%	0%	68%
22.	Plumber	59%	0%	41%
23.	Nurse	0%	45%	56%
24.	Dancer	0%	36%	64%
25.	Secretary	0%	36%	64%
26.	Beautician	0%	54%	46%
27.	Interior Decorator	0%	41%	59%

23% of students scored "0" indicating no occupational stereotypes present. 37% of students scored between "1" and "9" indicating that they assigned a specific gender to 4% - 33% of occupations listed. 27% of students scored between "15" and "18" indicating that they assigned a specific gender to 55% - 69% of occupations listed. 13% of students scored between "19" and "23" indicating that they assigned a specific gender to 70% - 85% of occupations listed.

Males scored significantly higher on the occupational sex-role measure than females indicating a higher stereotype presence. 33% of the males surveyed scored between "18" and "23" on the measure, indicating that they associated certain occupations with a specific gender. Females indicated less stereotyping in their scores. 60% of the females scored between "0" and "3", with 30% scoring a "0" on the measure. results from the females surveyed indicate a general lack of stereotyped gender assignments for the occupations listed.

The results indicated that occupations still tended to be divided among gender lines. The occupations with the highest percentage of students assigning a male role were plumber, 59%, truck driver, 54%, and soldier, 50%. The occupations with the highest percentage of students assigning a female role were beautician, 54%, and nurse, 45%. Child caretaker, interior decorator and librarian were tied at 41%. Only one occupation, musician, was indicated non gender specific with 100% of participants answering that either gender was able to perform that job.

Conclusions

The results indicated that occupational stereotypes were, in fact, present at the high school level. Females reported less occupational sex-role stereotyping than males. All of the occupations listed, except for musician, indicated an emphasis on a specific gender being more appropriate to perform the job. For example, a teacher has been traditionally categorized as a job appropriate for females. The results indicated that, even though 91% of the students felt that the job could be performed by either sex, 9% of students still categorized it as a female specific job. It is evident that attitudes about gender roles are changing, but some stereotyped notions still exist.

Discussion

Results indicated the presence of gender-role stereotypes with relation to occupations in both males and females surveyed. The implications as far as the educational setting are numerous. Since occupational choices are often formulated during high school years as a direct result of academic influence or advisement, educators must be aware of the

images and gender roles that are presented in course material, discussions and lectures, and be prepared to foster and promote a gender equal environment.

Further research is needed to examine the presence of gender-role stereotypes in larger groups. Interesting variables to examine in the future would be the difference in stereotyping levels among students of different academic ability. Is it possible that students in lower academic levels are not exposed to a curriculum that fosters less stereotypical attitudes about future occupations? In depth study of advising practices for males and females and future plans would also be relevant to the topic at hand. Are females being programmed to follow the traditional female career paths and shy away from the male dominated math and science realm?

It is important to realize the influence of the academic setting on stereotyping amongst high school students. A longitudinal study may be interesting to assess the change in student attitudes throughout their high school experience.

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Classroom Environment: Perceptions of How Classroom Activities Influence Student Learning

by
Edward McNeal Jr.
with
Scott Baker, Ph.D

Wake Forest University
Department of Education
December, 1995

Introduction

A close examination of the American high school system reveals the importance of student engagement to student success. If one studies texts of the American high school, it becomes quite apparent that the failure to immerse students in active learning experiences has had its consequences - the most important being the lack of learning schools have produced.

The core of this issue of educating students lies within the classroom. The classroom is the designated learning where students are supposed to be challenged to higher modes of thinking and achievement. Most classroom settings lack this kind of intellectual stimulation. But why is this so? Is this the fault of teachers? Or perhaps, it is students' own doing? To answer any of these questions, one must examine the kinds of things that exist or take place in various classroom environments. This was the focus of my study.

As I studied the American high school, I realized the importance of he classroom and the atmosphere that is created within each one. The classroom is the place where learning and achievement must be emphasized and fostered. It is for these, I conducted an ethnographic study on classroom environment.

"Classroom environment" consists of the kinds of things that a teacher and student bring to a classroom as well as the physical attributes of a classroom. The emphasis is placed on the interactions that transpire between the teacher and his/her students.

Classroom activities are the elements that yield these interactions and are therefore deemed as highly significant to the learning experience. Classroom activity is the primary focus of this study on classroom environment. Other elements of classroom environment are discussed briefly.

Review of Literature

At the forefront of producing successful learning environments is not the issue of low achievement, but rather disengagement (Newmann, 1992). Many students seem to lack interest in the content or in learning, while most teachers fail to provide students with substantial learning experiences in the classroom (Powell, Farrar, and Cohen, 1985; Goodlad, 1984).

John Goodlad, in A Place Called Schools, revealed through extensive observations of high school classrooms that sixty percent of class time is consumed by activity that leads to student passivity. Twenty-five percent of class time was spent on lecturing (Goodlad, 1984). Lecturing does not allow students to be active participants in the learning process just as much of what transpires in the classroom so often falls short of challenging students towards higher level thinking. However, the authors of The Shopping Mall High School advocate that no particular teaching technique can be dismissed as ineffective or praised as successful at engaging students, although those teachers that strive to produce critical thinkers utilize techniques that press for student activity the most (Powell, Farrar, and Cohen, 1985). Sizer sides with these findings as he recognizes the importance of immersing students in activity that pushes them to think critically in his text, Horace's Compromise (1984).

Rudolf Moos, one of the primary researchers of classroom environment, exposes valuable information about how various educational environments affect students (1979). What he finds is that at classes that are control oriented are the most detrimental environments to students as they "lead to dissatisfaction and alienation and do not facilitate personal, social, or academic growth" (Moos, 1979). Furthermore, Moos's findings recognize classes that focus on relationships and present specific objectives that are well structured are most likely to see improvement on traditional measures of achievement and creativity. However, to go beyond traditional measures of achievement and creativity (such as standardized tests), objectives must remain task oriented and also emphasize competition. But to spark high student interest or morale, innovative classes that also focus on relationships are the best means. Evidence does not suggest that this kind of classroom setting will improve achievement (Moos, 1979).

A recurring theme that continues to ring true throughout the literature is the notion that many teachers look for the easiest ways to keep students happy, by accommodating

student passivity. It's much easier to convene over a class by acting as an information dispenser and by denying students the right to be active participants (Powell, Farrar, and Cohen, 1985; Goodlad, 1984).

Methodology and Results

My personal assessment of classroom environment involved surveys, interviews, and observations of four English classes (two sophomore and two junior classes). All of the were surveyed and four were interviewed.

The primary focus of my study was to gain some perspective of students' perceptions of how various classroom activities influenced their learning experiences.

The bulk of my findings are extracted from the information provided on the surveys, interviews. Because time was limited for observations, I do no rely much on them as a means to draw conclusions.

The survey began by listing the following ten classroom activities placed in the same, random order:

A. working in small groups (trying to find a solution or demonstrate an understanding of the material)

B. watching a program/film

C. developing an answer to a question or problem with an explanation

D. taking notes from teacher's lecture

E. copying notes from overhead projector

F. student explaining a term, idea, concept, or opinion to class discussion)

G. interpreting notes or an explanation of something into one's own words

H. class discussion (question and answer) based on teacher's lectures and notes

I. reading a book, story etc. (no written assignment)

J. reading a book, essay, story etc. (then answer questions about the reading - must be able to analyze and evaluate what was read)

Five of the activities are what I refer to as participatory activities, while the other five are considered to be non-participatory activities. Participatory activities are those that *require* or *tend* to engage students in higher level thinking. Non-participatory activities are distinguished from participatory activities because they *do not necessarily require* or *tend* to lead students into higher modes of thinking. When I speak of higher modes of thinking, I am referring to such critical thinking skills as synthesis, analysis, and evaluation (Bloom's taxonomy).

Activities *A, C, F, G,* and *J* are considered to be participatory, whereas activities *B,*

D, E, H, And *I* are non-participatory. It is extremely important to understand that I am not advocating that those activities I categorize as non-participatory are not capable of leading students to critical thinking. The point I am trying to express is that those activities generally do not press students to levels of higher order thinking.

using the ten activities, I asked students to rank each activity with respect to the following two questions: 1) Which activities provide the best learning experience? and 2) Which activities are most interesting and provide the best challenge? I also asked each student to write a description of the best learning environment and/or of a good teacher. Results revealed interesting data.

The most favored activities for both questions were the participatory activity of "working in small groups (trying to find a solution or demonstrate an understanding of the material" and the non-participatory activity of "class discussion (question and answer) based on teacher's notes and lectures".

In the question that asked about "the best learning experience", participatory activities were favored fifty-four percent to forty-six percent. The difference was not great. Partcipatory activities were favored slightly as they focused more attention on students' ideas. Look back at activities A, C, F, G, and J. Notice how each activity requires students to use their minds whereas the non-participatory tend to rely more on the teacher's thoughts and ideas. Non-participatory activities probably fared so well because many students are used to such traditional activities as taking notes from a lecture and/or an overhead projector. Students begin to think such activities must be valuable since they are used so often by teachers.

I proposed the question about which activities were most interesting and provided the best challenge because I viewed it as asking essentially the same thing as the first question (which one provides the best learning experience). Think about it, if an activity interests a student and challenges him/her as well, then this is apt to provide a successful learning experience for that student. However, students did not perceive this question as I did.

If students would have seen both questions as asking the same thing, then they would have ranked both questions in the same or similar order. There were only two students out of fifty-seven that ranked them in such a way. This was also evident in the large number of respondents that ranked watching a program/film among their top five choices. Obviously, watching a program is not much of a challenge, so they must have responded to the "interesting" part of the question.

This also suggests that perhaps students saw the question as a contradiction of terms. That is to say, students did not see challenging activities as interesting. This means

students must suffer to some degree when involved in challenging tasks, as they must sacrifice their interest. Therefore many teachers feel the need to be entertainers as well as teachers. This certainly seems to be precisely what the evidence suggest.

Teachers must find ways to incorporate activities that intellectually challenge yet, interest students. This is not to say, teachers are to resort solely to some form of entertainment to accommodate students, but rather to use favored activities in association with activities that require higher order thinking. If educators do not get students' interest, then teachers lose half of the battle, for students do not tend to focus on material that does not interest them. Interest may be sparked by teacher enthusiasm ar in showing the relevance of such material to students development and/or their future endeavors.

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Student/Athlete or Athlete/Student?

by
Ryan R. Michel

with
Dr. Leah McCoy, Ed.D.

Wake Forest University
Department of Education
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Introduction

The purpose of this attitudinal study is to examine the dual role of student and athlete and the effect which this dual role has on today's high school student/athletes. The term student/athlete has different meanings and different connotations for different audiences. Referring to someone as a student/athlete will elicit a unique response from a teacher, parent, coach, or student. The term student/athlete will be used here to refer to a high school student who participates in a sport organized and sponsored by the high school which that student attends. This definition is neutral and void of stereotypes which become more apparent later. Many researchers believe that the term student/athlete is inaccurate due to the over-emphasis placed on high school athletics while other researchers have approached the issue from the other side of the spectrum in order to study and compare student/athletes to non-athletes when it comes to motivation and academic achievement. The review of literature will draw from studies of student/athletes from different perspectives in order to describe advantages or disadvantages that student/athletes face in high school, what factors cause these advantages and disadvantages, and how student/athletes deal with the issues that face them.

Review of Literature

High school athletics have played a significant role and have filled inherent needs of American society since their early emergence during the closing decades of the nineteenth century (Jable, 1992). High school athletics is a mechanism of socialization by nurturing discipline, order, obedience, cooperation, and team work. There are several advantages and disadvantages to being a high school student/athlete.

McNeal (1995) did a study which showed that high school athletics is a significant predictor of high school drop out rates. He found that students who participated in athletics were an estimated 1.7 times less likely to drop out than were those who did not participate. McNeal is illustrating an example of an advantage for student athletes. Goldberg (1991) studied what he called the double-edged sword of high school athletics. Student/athletes are praised for their athletic accomplishments, and paradoxically, in the same breath they

are maligned as a problem group and labeled an "overpriveleged minority" or simply "dumb jocks." He also noted that on the one hand, athletic participation has been linked to the development of leadership skills, feelings of self-reliance and self-confidence and the ability to set goals required for success in athletic competition and academics; however, the time investment necessary for success as a competitive athlete detracts from the time available to develop the skills and behaviors necessary for broadly based identity development and personal competence.

This aspect of time investment to which Goldberg alludes is something that Anderson (1990) studied when he examines the effect of athletic participation of the academic aspirations and achievement of African American males in New York City high schools. Anderson compared student/athletes' and non-athletes' cumulative grade point averages, number of hours spent on homework, and number of hours spent playing sports. The study found that athletes put as much time into academics as the non-athletes yielding about the same results. Do athletics affect academics and/or do academics affect athletics?

Methodology

This study involves ten high school student/athletes from three different public high schools from the Winston-Salem City Forsyth County School District. The students range from grades nine through twelve and each gender is equally represented with five males and five females. The sports in which the ten students participate include swimming, soccer, basketball, track, cross country, and tennis. The students must have participated in at least one season of one sport in a public high school in order to be eligible for this study. Students were also required to sign a consent form and have their parent or guardian sign the consent form if they were under the age of 18.

The study involved interviewing each subject. Each interview was audio taped and was approximately twenty minutes in duration. The ten interview questions are listed here:

1. *Why do you participate in high school athletics?*
2. *Which comes first in your life: athletics or academics, and why?*
3. *Does anything that you learn in your sport(s) help you in the classroom?*
4. *Does anything that you learn in the classroom help you in your sport(s)?*
5. *Do practices interfere with your studies to the point that classroom achievement is not as high as it could be?*
6. *Do you feel that you have to work harder in school than non-athletes, and why?*
7. *Is there pressure from coaches to do well in academics?*
8. *Are you treated differently by teachers because you are an athlete?*
9. *Do your attitudes toward academics change when your sport is not in season, and how?*
10. *Do you want to be recognized and remembered more for your academic or athletic success at school?*

The interview responses to each question were grouped together and analyzed in order to determine trends and themes and compare different responses to the same question.

Results and Discussion

The results of this study have been divided into two major categories: the motivation to participate and the effects of high school athletic participation. The effects

have then been subdivided into social, academic, and developmental effects which were the major themes in the interview responses. In order to study the effects of high school athletics, it is necessary to examine the motivation behind participation through the eyes of the student/athletes. Therefore, the first question which DeVoe & Carroll (1994) and several other studies, including this study, asked was why students participate in high school athletics?

There were ten different responses to the question: Why do you participate in high school athletics? with some responses more frequent than others. Like DeVoe & Carroll's study, the most powerful motivation to participate was to have fun. Other similar responses included to stay in shape, to compete, and to play as part of a team. The rest of the responses from the present study are listed here with the most frequent answers at the top of the list (#1) and the least frequent at the bottom of the list (#10):

Motivation to Participate

1. to have fun
2. to meet people and socialize
3. to stay in good physical shape
4. to gain recognition
5. to help organize and manage time
6. to satisfy parents or peers
7. to compete
8. to be a part of a team
9. to be cool
10. to stay busy

From these responses, it is clear that student/athletes expect athletics to be fun, to help their social lives, to keep them in good physical condition, and to help their academics. These are the expectations and motivations behind participation, and now the question becomes whether or not these are realistic expectations?

The fact that the desire to meet new people, to talk to people on the team, to get to know people better, to be with friends, to meet upperclassmen, to be cool, and to better one's social life are on the minds of student/athletes indicates that student/athletes want athletics to fulfill a great social need. The age of the respondent determined what type of social need was being fulfilled. For the underclassmen (ninth and tenth grade), the need was one for acceptance from peers; Subject 9 answered, "It is a fun way for me as a Freshman to meet upperclassmen and stuff; also, it's like the cool thing to do." This notion of athletics being "cool" goes back to what McNeal (1995) referred to as the high level of status and prominence which high school athletics has in the school and peer culture. This is in contrast to an upperclassman's (eleventh and twelfth grade) response which illustrates a need to socialize, Subject 4 responded, "I enjoy it (high school athletics) because I get to talk to everyone on the team and get to know people better." Both of these examples are social effects of high school athletics, and now the question becomes, what are the academic effects?

Before examining the academic effects of high school athletics, it is interesting to note that 70% of the subjects placed academics before athletics and only 30% placed athletics first in their lives which goes against the myths that student/athletes are at school only to play sports. Popular belief also suggests that high school athletics takes students away from their studies to the point that achievement in academics is not as high as it could

be. This is where stereotypes such as "dumb jocks" (Goldberg, 1991) come from and what labels student/athletes as simply athletes. It is obvious that student/athletes must devote a great amount of time to practice and competition in their sport; however, when the ten subjects were asked if practices interfere with their studies to the point that classroom achievement is not as high as it could be, 100% of the subjects said that the practices **did not** interfere with their studies. Four of the subjects made it clear that because practices are scheduled immediately after school, they have plenty of time to do homework after practice. Subject 9 noted that athletics forced her to cut back on other activities in order to maintain time to study. Subject 6 went as far as to say, "Actually, I feel that participating in practices and sports helps me to manage my time because I know that if I skip a practice, I won't do anything and I get down to time to go to bed and I won't have anything done; I try to use it (athletics) for my benefit." These results match the results from the study of the effect of athletic participation on the academic aspirations and achievement of African American males in New York City high schools (Anderson, 1990). Anderson found, contrary to popular belief, that athletes put slightly more time into homework than non-athletes rather than less homework.

A distinction must be made, and the academic effects become more apparent, when one compares the student/athletes' attitudes toward academics when their sport is in and out of season. Three of the subjects could not be studied because they are in athletics all year round; however, five of the subjects made it very clear that their study habits changed when their sport was out of season. The responses sounded something like this: I slack off when not in season, I am a lot more relaxed with my studies when I'm out of season, my study habits get more serious when my sport starts, or I do my homework slower when out of season.

A final effect on academics deals with the relationship with the student/athletes' relationships with their teachers. After reading articles such as "Student athletes or prima donnas?" (Ricken, 1995), one would worry that teachers are biased due to all of the negative publicity which student/athletes receive. The results show that this is not the case. When asked if treated differently by teachers because they are athletes, seven of the subjects said that they were treated differently in a positive way. Many of the subjects said that their teachers knew that they were athletes and enjoyed talking to them about their competitions. The subjects felt that they became better friends with their teachers because of their athletic participation. Some of the subjects experienced teachers being more lenient with homework and tests if they had a sporting event the previous day. There is also some overlap because many of the teachers are coaches and coaches are teachers. This fact causes coaches to take pride in their student/athletes' academic as well as athletic success and reward achievement in both.

There are several ways in which high school athletics affects the personal development of the student/athlete. When asked, does anything that you learn in sport help you in the classroom?, the responses revealed lessons and traits that will help the

student/athlete both in class and in life. Four of the subjects said that they learned about teamwork and how to relate to other people through athletic participation which is an obvious advantage in a time when cooperative learning and working is so popular in the schools and workplace.

There were many other interesting individual responses. Subject 1 said that dedication was something which she learned in athletics and applied to her life. Subject 4 said that it was through athletics in which he learned patience, physical awareness, and the ability to deal with pressure. Subject 5 said that athletics is an environment which requires and teaches him how to stand up for himself. Subject 7 said that it was through athletics that she learned the importance of finishing a task whether it be an entire workout or individual lap in the pool or on the track. Subject 9 said that athletics has taught her to never give up. Finally, Subject 10 answered that high school athletics has taught him how to focus. These are all examples of skills and traits which are necessary to function well in society and ones which may not have been achieved without athletic participation in high school. These results are similar to Goldberg's findings (1991) which linked athletic participation to the development of leadership skills, feelings of self-confidence, and the ability to set and implement goals required for academic and career success.

In conclusion, the most revealing results are those concerned with the interview question: Do you want to be recognized and remembered more for your academic or athletic success at school? Five of the subjects answered athletics, two of the subjects answered academics, and three of the subjects answered both. The fact that more of the subjects wish to be recognized and remembered more for their athletic success at school is another example of McNeal's (1995) high status level of athletics. This high status is not only present in the school's peer culture, but also in our society. With the amount of advertisement and glorification that professional athletes receive, it is no surprise that our student/athletes want the same type of recognition. Future research should study the pressures which the peer culture and our society place on the student/athlete's athletic success.

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School Reform - Coalition Style

by

Kristan Accles Morrison

with

Dr. John Litcher, Ph.D.

Wake Forest University
Department of Education
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I. ***Introduction*** - "Restructure our schools" is the catchphrase for the 1990s. Everyone seems to recognize that something is wrong with public education and all have their own ideas about what will "fix" it. One of the major organizations working for school change today is the Coalition of Essential Schools (CES). The CES has developed a set of broad principles which guide the work of redesigning schools; these translate differently from school to school.

Studies that examine these different "translations," detailing how each school comes to experience change and actively exemplify the Coalition principles, are absolutely vital for helping others schools realize that a redesigned school is a very real alternative to the troubled schools we have today. This study, which asks the question, "How is a Southeastern suburban high school doing in its attempts at restructuring according to CES principles?" will help to facilitate this realization.

II. ***Literature Review*** - The body of literature on CES-based school change is quite limited at this point in time. There are a small number of articles discussing the change process, these detail both helps and hindrances to redesigning schools according to the Nine Common Principles. Briefly, the things that help schools successfully redesign include an agreement between teachers, parents, and administrators that change is needed; the presence of systemic and administrative support; and having membership in a larger network (Wasley, 1991; McQuillan and Muncey, 1994; CES, 1989 and 1995a; Cushman, 1993; Prestine, 1993a and 1993b; Sizer, 1992; Toch and Cooper, 1990). Conversely, the things that

hinder a school's redesigning efforts include the lack of consensus that change is needed; resistance to change based on this lack of agreement; slow and incremental change stemming from this resistance; internal divisiveness caused by the changes that are able to get through; and the difficulties in dealing with new structures (Muncey and McQuillan, 1993a, 1993b, and 1994; Wasley, 1991; Sizer, 1992; Prestine, 1993b; CES, 1989; Muncey, 1994).

The remainder of the literature on the CES is composed of books and articles by the teachers and administrators of schools that are already members of the CES or have CES-based programs in their schools. In this body of work, the authors discuss how the principles are in action in their schools, and how the changes have improved life for all involved (Nickle et al, 1990; Chion-Kenney, 1987; Aronoff and Toloudis, 1987; Meier, 1995).

III. ***Methodology*** - Subject and Methods - I studied a three year old school within a school (SWAS) program located in a Southeastern U.S. high school. My methods of data collection were threefold - examination of the written historical documents of this program, 8-10 hours of observations in the SWAS, and 5 interviews with major players in the SWAS program.

Analysis - Program History - A small group of faculty, interested in school redesign, got together in 1992 to discuss the ideas found in Theodore Sizer's book *Horace's School*. The group sought to redesign this school based on the CES' Nine Common Principles. Because only a small number of faculty members expressed initial interest in such restructuring, the group consciously chose to focus their efforts on designing a SWAS program - a program that was *specifically* designed to have no impact on the rest of the school.

The 1993-1994 school year began with this SWAS program in place, and it has been in place ever since. Now that we know how the program developed, let's look to answering the research question itself. A discussion of the problems encountered by the introduction of this program into the school is one major way to illustrate how this school is doing in its restructuring efforts. And, although impossible here because of space constraints, a detailed examination of how the Nine Common Principles are being exemplified in this program is

impossible here, but it is another illustrator of how this school is doing in its restructuring efforts.

Problems encountered - The primary restructuring problem, from which all others stemmed, is that the planning group took on both too much and too little too soon!

The SWAS planning group saw the rest of the faculty's initial resistance to their efforts as immovable. So instead of taking extra time to try and win support for whole school change, the planning group chose to move quickly to a *small-scale* concrete application of the Nine Common Principles - the SWAS. Perhaps if the group had extended their philosophical "conversation" about the Nine Common Principles for a longer period of time, they might have been able to gain more widespread support for concrete changes. Perhaps, also, if the group had undertaken some networking with CES member schools or CES "critical friends," they could have learned how to bring about whole school change. In the sense that they worked *first* for developing a small, concrete program instead of whole school change based on the Nine Common Principles, the group took on too little too soon. The group consciously chose to limit the scope of their restructuring right from the start.

The limiting nature of the SWAS structure, paradoxically, led the group to take on too much too soon as well! The SWAS planning group, it seems, did not have a thorough understanding of what the lack of whole school involvement could mean for their program. The very structure of a SWAS sets limits on how effective the principles can be. The SWAS group took on too much too soon in the sense that they tried to implement, right from the start, almost all of the Nine Common Principles *within* the limiting SWAS structures.

This dichotomy led to a number of different problems that the SWAS had to deal with in its embryonic phase. And unfortunately, this "too little and too much too soon" dichotomy is a self-perpetuating one. Until the whole school is involved, the Common Principles will not meet their true effective potential. And until the implementation of all the Common Principles is seen by all the faculty, staff, and community as an effective alternative to the status quo, then the whole school will not change! How can this ever be resolved?

Perhaps the continued and concerted efforts on the part of such SWAS programs as this to actively exemplify the Nine Common Principles will chink away at the traditionalist

armor that surrounds so many schools today. I believe that this SWAS is trying very hard to do just that. And they have made some progress! On a very small scale, the SWAS program has effectively implemented some of the Nine Common Principles. Life for the SWAS students *is* somewhat different than for their "regular school" counterparts, and laudably so.

IV. ***Results and Conclusions*** - So, what is the answer to the research question? How *is* this school doing in its restructuring efforts? Presumably, schools redesigning according to CES precepts have the end goal in mind of becoming a CES member school. Therefore, how close this school is to becoming a member of the CES can also answer how this school is doing in its restructuring attempts. Would this school, then, become a member school if it were to apply to the CES today? My answer is a qualified no.

The school ***has*** been very successful in the sense that they have a Coalition-based program in place and that this program is truly working at actively exemplifying the Nine Common Principles. But other things need to be present for a school to become a CES member school. The Coalition has established certain criteria necessary for acceptance into membership. These include an *action plan* for at least the next school year, a *consensus* from the faculty that the CES is the way to go, *community support* for the Essential Schools philosophy, and the assignment of a *school coordinator* (CES, 1995b).

I believe that this school would not attain membership if they were to apply today because they would only be able to meet the last of these criteria - assigning a school coordinator. The school does not have a consensus from the faculty *or* the community that they will (or even should) work to develop and implement an Essential school philosophy. No consensus exists because there is a strong sense in the area that this school is already a success, and so, "if it ain't broke, then why try to fix it?"

And last, but most importantly, this school does *not* have an action plan for the development of this Essential school program into the next year. A new high school is opening within the system to handle the overcrowding in this school. All of the SWAS faculty have requested that they be transferred into this new school, so what will happen to the SWAS program next year?

One of the SWAS faculty members, a member of the planning committee for the new

school, indicated that, although the principal at the new high school is a strong proponent of Coalition-style reforms, getting a Coalition school started at the new school is not currently on the front burner, and probably will not be in the near future. And the principal of the current high school has indicated that the SWAS program, as it stands today, will probably not survive at the school into the next year. Should all the current SWAS faculty leave for the new high school next year, then he will not recommend that the program continue in his school.

So, it looks like this is the end for this SWAS program. But was it all for nothing? I think not. I believe that the program, although troublesome and frustrating at times, was - in an overall sense - for the best for this school system. Teachers experienced new and more positive ways to teach and interact, students experienced more hands-on and personalized learning, and the community and faculty learned that all is not well in their supposedly "successful" school. Such noble experiments as these are absolutely vital for helping other schools realize that redesigning, although very difficult at times, is a very real alternative to the troubled schools we have today. As a future teacher concerned about the state of public education, I was heartened to see that there are a number of people interested in working towards a better future for students. This is what the CES is all about - a grass roots effort to bring about more effective schools. This SWAS program has planted a strong seed, and I believe that it has tremendous growth potential.

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A Hypermedia Guide to the Life and Poetic Work of John Keats

by
Bethany Paige Nowviskie

with
Dr. Leah McCoy, Ed.D.
and
Dr. Joseph Milner, Ph.D.

Wake Forest University
Department of Education
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Recent developments in computer technology have created fascinating possibilities for students of language and literature. The invention of hypertext, an electronic writing system which allows computer users to read a series of passages in a non-linear format, promises to revolutionize the act of reading, the nature of textuality, and the practice of education. This abstract constitutes a summary of articles and books central to a basic understanding of hypertext and its potential as an educational tool. Following the brief review of literature is a description of my own work in designing a computer-based guide to the life and poetry of the 19th century Romantic period poet, John Keats. The *Hypermedia Guide to John Keats*, an educational site on the World Wide Web, is an ongoing project which combines text, illustrations, and audio clips in a multimedia approach to teaching literature. The Guide is, however, intended to educate its users about more than poetry. As part of the first wave of hypertext teaching tools widely available on the Internet, this project is meant to increase public awareness of the tremendous potential of an exciting new technology.

Hypertext has been defined by George Landow (1992) as "an information technology consisting of blocks of text, or lexias, and the electronic links that join them" (1). As its inventor,

Vannevar Bush, suggested in his groundbreaking 1945 article *As We May Think*, hypertext has the capacity to adjust itself to the workings of the human mind, and therefore, to better approximate the ways in which we learn and remember information (Bush, 109). The fundamental nature of this technology has to do with the relationship between reader and text. While some hypertext systems can be structured along lines analogous with conventional, linear books, most systems encourage a more interactive relationship. The infinite paths that electronic links offer ensures that each reader's encounter with a document will be unique. Therefore, the central feature of any hypertext document is its nonlinear structure. Readers are not limited to a single approach to a work, as they are with conventional printed media. Espen Aarseth, in his 1994 article, *Nonlinearity and Literary Theory*, defines the new style of reading, or "practice, structure, and ritual of use," dictated by this technology (67). In contrast to that of printed media, the "ritual of use" of a hypertext document is wholly determined not by its author, but by its readers.

The fact that hypertext demands a great degree of reader engagement suggests its applicability as an educational tool. It has been suggested that "certain forms of educational and literary hypertext make exploration, discovery, and even disorientation a crucial part of the reader's encounter with them" (Landow 1994, 31). By requiring that students have a personalized encounter with the material they read, hypertext embodies a pedagogical approach consistent with modern ideas of teaching. Students are empowered during an experience with a hypertext document in ways impossible with conventional textbooks. They themselves direct their learning. Hypertext may, therefore, have an incredible impact on students' affective responses to educational material.

Mireille Rosello's 1994 article, *The Screener's Maps*, emphasizes benefits to students which extend far beyond issues of interest and motivation. She brings to attention the extent to which hypertext can improve students' achievement, providing them with context and the sort of "encyclopedic knowledge which one does not expect inexperienced researchers to dig up on their own" (133). The electronic links which join individual lexia of a hypertext document provide students with a simple and intuitive means of exploring context and background information. By selecting those links which interest them or pertain to their particular research, readers are certain to encounter new paths of inquiry and to learn far beyond their original scope.

The value of hypertext as an educational tool seems clear, and more and more classrooms are being equipped with the technology necessary to bring hypertext into the hands of students. New hypertext and hypermedia documents are appearing daily on the World Wide Web, and the literary works of almost all of the major British and American writers are available to readers via electronic media. There is, however, a great need for more. The success of hypertext as a literary learning system depends upon the availability of a variety of in-depth information on individual

writers and works. The endurance of these individual writers and works, too, depends upon their relation to the growing world of hypertext.

There is an increasing push in the academic community for the development of course-related hypertext documents. The possibilities which these new texts offer both students and instructors seem endless, and their effects seem to be both revolutionary and beneficial. As Jerome J. McGann, author of a hypermedia archive of the work of the poet/painter Dante Gabriel Rossetti, has written, "it is clear to anyone who has looked carefully at our postmodern condition that no real resistance to such developments is possible, even if it were desirable" (McGann, 1). Hypertext promises to become the dominant medium of 21st century scholarly writing, and, thereby, to change academic dynamics around the world.

One author whose life and works seem especially well-suited to the hypertext environment is the British Romantic period poet, John Keats. English professor Grant Scott, in a paper given at the *Keats Bicentennial Conference of 1995*, suggested that if Keats scholarship is to survive into the 21st century, it must be transplanted from the bookshelf to the computer screen. Keats's poetry and the literary criticism which surrounds it must not be isolated from the mainstream of education by remaining in print rather than moving forward into hypertext. Scott states that "Keats scholarship must enter the public domain in imaginative ways," for example, through the multimedia capabilities of the World Wide Web (Scott, "Keats in the 1990s"). The visual imagery inherent in Keats's poetry can be enhanced by pictures in hypertext, and the background information needed for a more complete understanding and greater appreciation of the work can be easily linked to the poems themselves. Keats's life and work itself may be viewed as a myriad of interwoven words and images, so what better vehicle for Keats scholarship than that of hypertext and hypermedia? As Scott maintains, "hyperspace and the Keatsian aesthetic are connected" (Scott, "Keats in the 1990s").

It is with this connection in mind that I have undertaken a hypertext/hypermedia project to place elements of Keats's life and work on the World Wide Web. It is my hope that an educational document which allows students to explore poetry, letters, criticism, and biographical information in a non-linear manner will help teachers ignite in them an interest in Keats and in the study of literature. The *Hypermedia Guide to the Life and Poetic Work of John Keats* is a compilation of text, images, and sound clips designed to give students access to a database of contextual information in which to place individual poems. As a work-in-progress -- a state to which hypertext, with its myriad links and lexia, particularly lends itself -- the *Guide* regularly gains more and more material. It currently contains the texts of more than twenty of Keats's finest poems, along with images of many of his original manuscripts. This feature enables students to study Keats's process of composition and revision, and to compare primary versions of poems

with their final printed forms. Electronic links also lead users to pages devoted to places, material items, and individuals important in Keats's life. Each of these pages contains paintings or photographs, along with bits of text which explain the relevance of the topic to Keats studies, and hypertext links which make related pages readily accessible. The *Guide* also contains digitized images of most of the available portraits of the poet, with, in many cases, information about their genesis. Many of Keats's brilliant letters are also represented, some in their entirety and others through excerpts. These documents, like the poems and other items, are accessible both through an index and from a nearly infinite number of linked paths.

One of the most exciting aspects of this *Hypermedia Guide* is its potential for creating new avenues of inquiry for users. Many of the poems it contains are annotated through hypertext links, an intriguing alternative to conventional footnotes, which permits readers to explore only those words and phrases which they wish to have better clarified, and to receive that clarification, in some cases, with visual or auditory information, or with automatic links to other documents. For example, the annotation links of a single sonnet may take those who follow them to simple explanatory notes, to other Keats poems and letters, to sound files which offer examples of pronunciation, to images of related visual art, to biographical information, or even to the text of another work of literature by which the poet was influenced. From each of these locations, readers may explore still other links in what can amount to an endless educational chain.

A substantially complete version of the *Hypermedia Guide* is now available to teachers and students everywhere through the World Wide Web. While it is especially intended for high school and undergraduate students of literature, the reader-determined "ritual of use" inherent in hypertext documents ensures its value to users of many different ability levels and interests. The expanding trend toward a hypertext-based curriculum suggests that future generations of students will be using this medium more and more as a basic resource in their studies. Multimedia and hypertextual approaches to literature will be making as great an impact on the language arts classroom as they are on the field of information technology. Teachers and students alike should embrace this revolution. Hypertext offers us a new and exciting approach to the study of literature, the organization of information, the notion of textuality, the practice of education, and the communication of ideas. Its transformative power may profoundly affect our culture, and I am pleased to have the opportunity to make a modest contribution in the form of my *Hypermedia Guide to the Life and Poetic Work of John Keats.*

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Current World Wide Web Address:
A Hypermedia Guide to the Life and Poetic Work of John Keats:
http://www.wfu.edu/~nowvibp4/index.html

Block Scheduling

by
Sharon I. Oxford

with
Professor John H. Litcher, Ph. D.

Wake Forest University
Department of Education
December, 1995

INTRODUCTION

The traditional six period day has been the high school class schedule for many years. It is believed that this class structure does not maximize quality work by students. Schools are beginning to change to a block schedule to allow more time for each instructional period. Today, forty percent of the secondary schools have switched to block scheduling (Bryant, 1995). One popular type of block scheduling is for students to take eight classes per year, or four classes per semester, each ninety minutes long. By following this schedule, students have more concentrated time for a subject.

The goal of organizing time has been seen as a unique challenge for teachers and students alike, with many educators believing that increased learning time will improve the quality and experience of education (Anderson & Walberg, 1993). Aggressive educational systems are promoting new scheduling ideas as one answer to low student achievement.

PROBLEM

The purpose of this study was to investigate the positives and negatives of the different types of class scheduling in today's schools with an emphasis on block scheduling. Educators have been faced with deciding how to improve classroom instruction for maximum learning and achievement of students within the time allotted. Many educators believe that reorganizing time will improve the quality and experience of education. By investigating this topic, it was learned why the trend of block scheduling is becoming widely accepted in the United States and why today's complex educational needs are no longer being met by a century old program.

The objective of this study was to research and show the attitudes of senior high school students when first experiencing block scheduling.

REVIEW OF LITERATURE

The traditional schedule was based on the "Industrial Age" model that is no longer a relative part of our educational system. The Carnegie Standard scheduling used for most of the modern schools in the 20th century began with the idea that the time a student sits in a seat is equal to that student's mastery of a subject. This theory evolved when studies of United States factory workers proved work increased at fixed positions. To make education uniform, this concept was used in the schools to determine scheduling, and make education a production. The teachers taught by lectures, questions, students responses and assigned homework. This has remained unchanged in the majority of high schools in this country for this century (Carroll, 1994). The traditional schedule focuses on recall and recognition instead of learning and thinking (Gardner, 1993).

Students need more time in class to use their minds, experience hands-on projects, various teaching styles and in-depth study (Bryant, 1995). Having to report to fewer authority figures per school day makes it easier for students to adjust to different sets of rules and regulations. Teachers find block scheduling lends to more time for planning and implementing creative teaching methods (Buckman & King & Ryan, 1995). Educators have found the typical fifty-five minute class no longer serves the need of the student of today (Willis, 1993). With this modern philosophy, schools throughout the United States are making a change from the traditional to block scheduling.

Providing varied instruction for students means a greater chance that more students will learn the lesson. As teachers use this schedule, they learn that the textbook is just one of many devices needed to teach a class. Imagination is needed to develop an exciting curriculum. Block scheduling creates more opportunities for students to master the subject, allowing more ways for the student to achieve success. Students have the opportunity to grasp difficult subject matter with more time to ask questions and have clarifying discussions (Huff, 1995). The goal of the nineties has been for educators to seek ways to organize instruction time more effectively and improve the quality of learning (Kruse & Kruse).

Today, the age of computerization affects the need of change for technological innovation so that students will have more time to explore and prepare for the world of work. Technology has created masses of available information for the modern students, however, it takes time to learn to gather and utilize this knowledge effectively. Accessing, but not using new facts, does not prepare these student for the future (Shortt & Thayer, 1995). Creative scheduling and the four period day have proven to

be resources that lend to productive laboratory work and interactive student-directed activities. This scheduling is in response to the need to educate students to compete in the global community of tomorrow. Students are allowed to take more subjects and not rush through any of their high school studies (Edwards, 1995). This opens the door for students to show improvement in academic success and achievement (Bryant,1995). The struggling student is less likely to get behind or leave the classroom confused. The longer period gives the teacher time to observe more closely the student's learning habits, and ensure he has mastered the subject. Accelerated students have the opportunity to better explore difficult subject matter with more time to ask questions and have clarifying discussions (Huff, 1995).

METHODOLOGY

For this research, sixty-six seniors at a four year high school in Wilkes County, North Carolina responded to a survey with attitudinal questions about their first semester of block scheduling. All of the students had previously been enrolled in traditional scheduling for three consecutive years of high school. The surveys were completed the fifth week of their first semester of this school year, 1995-1996.

As a follow-up to the surveys, six weeks after the written questionnaires were completed, interviews were held with five students, one parent and one career teacher.

CONCLUSION

The written study was inconclusive in determining the attitudes of the students toward block scheduling at this high school. Most of the students responded with a no opinion answer. If they had been forced to select only a positive or negative answer, the study may have been more conclusive. However, the option of no opinion most likely illustrates that the school year was too new for the students to be totally convinced or unconvinced of the the new program and they may be showing a natural tendency to resist change (Willis, 1993).

There were many negative and no opinion answers which may show a possibility the students were not initially prepared for the schedule change. Indicating that the teachers did not vary their teaching methods (question #1) hints that although preparatory workshops were held to assist the teachers, some of them were resisting the transition or resisting new methods of presenting their lessons.

The literature review stresses the whole school community needs to

be involved in making this schedule change. The change at this Wilkes County high school came about from a mandate by the school board so all county high schools would have a common daily schedule. This decision was approved by the school administration (principal) but may have not been a preference of the school community and for that reason the schedule may have been received with some resentment.

To reexamine the attitudes of these students, after one year of implementation, the survey should be repeated asking questions about the achievement, attitude, instructional modification, student-teacher relationships and school behavior. Once teachers and students become comfortable and totally immersed in the change, the fears and apprehensions should disappear and the attitudes should be more positive with this school following the same optimistic patterns as other schools that have changed from traditional to block scheduling.

Three of the five students interviewed were definitely convinced that block scheduling was the best way for classes to be taught. Only one of the students strongly disliked the new schedule with one other slowly becoming adjusted. All of the students agreed it would be wonderful for their futures to be exposed to more courses, however, because they are all seniors, they realized the change is not as beneficial to them as to underclassmen.

The most frequent complaint was about the Advanced Placement (AP) courses. Each of these students is enrolled in at least one AP course. These courses are taught all year, however, the students are allowed by state standards to have a weighted grade for only one semester; yet, they are expected to continue the course the second semester with no additional credit. All of the students agreed they had more quizzes (almost daily) and the teachers seem anxious that students are learning the curriculum.

The parent interviewed felt the schedule was changed with no communication and input from the school community. This (she feels), has caused resentment and lack of immediate acceptance of the schedule change.

The teacher interviewed is a successful career science teacher. She enjoys the schedule and said it was a boost to science labs. Her frustrations are making sure the students are ready for the end of course testing. She stated that some teachers that had previously lectured were facing the biggest challenge and are slow to adapt to the change.

Overall, the interview proved to show a more positive outlook than the written surveys. Six weeks of additional schooling had given the students more time to make the adjustment and become more adapted to

their schedules. However, for a thorough study, surveys and interviews should be conducted at the end of the school year.

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What Are The Future Plans Of Today's High School Athletes?

by
Chris Pfohl

with
Dr. Leah McCoy, Ed.D.

Wake Forest University
Department of Education
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Introduction

As professional and college athletics continue to play a vital role in our society, it is important to examine the future plans of high school athletes. Do athletes' career plans differ from those of the average student? If so, are these goals realistic?

First of all, every high school athlete who intends to play a sport at the college level should be made aware early in his/her high school career of the standards set by the NCAA - more specifically, Proposition 48. This proposition requires the recruit to get a minimum score of 700 on the SAT, or a minimum 15 out of a possible 36 on the ACT. In addition, each recruit must have a 2.0 or better high school GPA in a set of eleven specified courses.

Hill, in a 1989 article for the National Educational Service, sees three major problems with Proposition 48. Primarily, a large number of black students may suffer from a lack of exposure to some of the specified courses in high school. Also, the possibility exists that some students do not take a serious approach to the SAT and ACT. Finally, high school athletes may feel that their athletic ability alone will get them into college.

Purpose

The purpose of this research is to examine the future plans of today's high school athletes. What factors do they consider when making career choices? Are their goals unrealistic?

Review of Literature

Before examining the goals of student athletes, it will be helpful to see how the average high school student decides on a career. In 1991, McKenna and Ferrero examined the attitudes of ninth-graders toward participation in nontraditional occupations. The authors agree that "the limited information available to them [students] is often interwoven with fantasy and unrealistic expectations" (McKenna and Ferrero, 1991, p.168). Similarly, Fottler and Bain (1984) studied career choices of 1,725 Alabama high school students. They, like McKenna and Ferrero, also found that the career plans of many high school seniors are unrealistic.

Many factors affect the career choices of high school students, such as parents, peers, counselors, and the media. Lungstrom (1974) discovered that regarding 10th, 11th, and 12th graders, salary and type of activity were the most dominant factors in their career choices. One can easily see that the escalating salaries of professional athletes could therefore lure student athletes into planning for careers in the professional ranks. McKenna and Ferrero suggest that more education is needed to expose high school students to the vast number of careers available to them.

Miller and McDougle (1986) also studied the factors that high school students consider when deciding on a career. Ignoring gender, their research showed that family, counselors, and work experience were the most important factors. Females, however, stated work experiences and grades were most beneficial in determining careers. Males, on the other hand, felt extracurricular activities were most helpful.

With a better understanding of how average students make career decisions, it is now important to examine the effects of athletic participation on high school students. Most of the studies done to this point on high school athletics involve looking at race and gender. Although this study will be less specific, these studies are relevant.

Trent (1982) examined the long-term effects of athletic involvement on self-esteem for black and white high school students. The author cited research by Hanks and Eckland (1976) which found that "...extracurricular participation in general [has] been found to be beneficial for aspirations and achievement among young adults" (Trent, 1982, p.104). Also, Hanks (1979) found that both black and white students who participated in high

school athletics showed significant increases in self-esteem. Trent's research found that the effects of athletic participation on self-esteem are at their highest at the high school level. Next, increases in self-esteem are not equally distributed among races. Black students in general do not experience as great an increase in self-esteem as do white students. More specifically, white students who do not plan to attend college actually experience the greatest increases. The study did find that students from low-income families and students with low ability benefit the most from athletic participation at the high school level.

Spreitzer and Pugh (1973) researched the relationship between athletic participation and goals in education. Spady (1970) argued that athletes are by nature more popular, and thus their educational plans may often include college only to further their popularity. Spreitzer and Pugh's findings agreed with those of Spady, in that there was a high correlation between athletic participation and perceived popularity. They also found, however, that this situation was only true in schools where athletics were thought to be extremely important. Overall, the study showed that athletic participation was in no way detrimental to academic goals. More specifically, the authors found that the relationship between athletics and academic aspirations was greater "for boys who were not otherwise predisposed to attend college" (Spreitzer and Pugh, 1973, p.181). These findings echoed those of Trent in the aforementioned study.

Sailes (1986) studied the exploitation of the black athlete. The author stated that the black athlete is often cheated when he/she is unable to graduate at the end of athletic eligibility. This situation could be due to several factors, such as easy courses for athletes, a lack of tutoring, an altering of grades, or having other students take tests in the place of certain athletes. According to Sailes, "Many athletes feel that academics are simply an avenue to big-time college and professional sports and should not be taken seriously" (Sailes, 1986, p.440).

Methodology

The subjects for this study were 39 high school athletes, selected from a southeastern high school with a rich athletic tradition. The subjects were chosen from all levels of math classes at the school. The sample included 6 freshmen, 9 sophomores, 14 juniors, and 10 seniors. Athletes were chosen from a wide variety of sports offered by the

school. The athletes were given a questionnaire. The survey elicited information such as the sport(s) played for the school, college plans if any, and post-college plans if any.

Results

The student athletes were asked for their plans immediately following high school. 95% of those surveyed had plans to attend college. The remaining 5% were unsure at the time of the survey. Those who planned to attend college were asked if they intended to play their sport for the college they would attend. 57% said yes; 13% said maybe; and 30% claimed they would not.

Students were then asked if they thought they could earn an athletic scholarship and/or an academic scholarship. 38% felt they could earn an athletic scholarship, while 44% believed they could earn an academic scholarship.

Another question on the survey asked students if they planned to play sports professionally. Expectedly, the three "major sports" - football, baseball, and basketball - led the way. These three sports dominate the sports media, and the tremendous salaries of their participants are difficult to ignore. Overall, 28% of the respondents had pro sports aspirations, but in the aforementioned trio, 56% of the participants planned to play professionally. The students who did plan to play professionally were asked to rate their own chances to make to that level. 27% said their chances were 0-20%; 36% said 41-60%; 27% answered 61-80%; and only 9% felt their chances were 81-100%.

The next question was for all of the respondents, and it asked if the students saw sports as a way to continue their education. The following item asked if the students saw college as a stepping stone to the professional ranks. 69% answered "yes" to the first question, while only 56% said "yes" to the second.

The last two items on the survey asked the student athletes what colleges they were interested in attending, and what attracted them to the particular schools. In all, 40 different schools were mentioned, and as expected, the ACC was well represented. When asked what attracted them to the schools, students were given a choice of social life, location, academic reputation, athletic program, or other, and they could choose any answer(s) that applied. Unexpectedly, "athletic program" was fourth on the list.

"Academic reputation" and "location" were both selected by 75% of the athletes, followed by "social life."

Discussion

Much of the research concerning high school athletes, and high school students in general, seems to indicate that their goals may be unrealistic. In this study, however, that does not seem to be the case across the board. Except for the big three sports, student athletes are realistic about the possibility of a pro sports career; and even in the big three, those students realize that a pro career is not a lock. The extremely high percentage of athletes who plan to go to college indicates that participation in athletics may in fact be beneficial to academic aspirations, as the previous research supports. It was heartening to see that more of the athletes looked to receive academic as opposed to athletic scholarships. This shows that overall, student athletes are taking their school work seriously. Finally, student athletes are picking colleges based on academic reputation more often than athletic reputation. Whether it's due to increased education on career choices, the media, or other factors, today's high school athletes have gotten the message about the importance of education, and that a career in pro sports is not a sure thing.

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Critical Thinking Challenges

by
Blake Radcliffe

with
Dr. Joseph Millner, Ph.D.

Wake Forest University
Department of Education
December, 1995

Introduction:

Almost all institutions of higher learning, liberal arts colleges in particular, pride themselves on their teaching of critical thinking. Likewise, secondary educators have recently desired to challenge their students to reason and write more at this level in order to enhance their learning, experience more success in college and be better citizens (Marzano, 1991). For the most part, the definitions of critical thinking that have risen in the last decade have been broad, describing it in a "robust manner as 'reasonable reflective thinking that is focused on deciding what to do or believe'" (Ennis 1985). The research into the teaching of critical thinking has shown that the effectiveness of this method is very strong, and that with some work it may be utilized by all teachers at all levels of secondary and college education.

Nearly all of the studies of the effectiveness of teaching methods that challenge students to think critically, as well as the meta-analyses of those studies, have proved that critical thinking improves understanding and retention of material across curricula. What is new to this field is that critical thinking is now recommended for students in all disciplines and at all ability levels (Marzano, 1991). Thus, the bulk of the research on this topic shows it to be reasonable to infer that the greater the frequency with which all students are challenged to think and write critically, the more they will learn and the more the environment of the classroom will improve.

Purpose:

The objective of my study was to determine the frequency with which students are challenged to think critically in secondary education language arts classrooms. Since Marzano noted that these methods are recommended for all ability levels and classrooms, I wanted to see how equal the distribution of this frequency was.

Review of Literature:

As a mediator of thought, Sokolov showed that language interacts between and controls different systems of thought "until they have been developed to the level of automaticity" (Sokolov, 1972). Laboratory-based experiments documented that children employ inner or covert speech to understand and employ the concepts of social situations involving peers. Thus, the language arts classroom, where speech is developed, seems to be one of the most appropriate media for the teaching of thinking.

Doris L. Redfield and Elaine Waldman Rousseau performed a meta-analysis on the questioning behavior of teachers and concluded that "predominant use of higher cognitive questions in the classroom... [Causes] the average student in a no-treatment group... To achieve at the 77th percentile following treatment"-- a +.7292 overall effect (Redfield & Rousseau, 1981). In particular, they found that higher order questioning, or divergent questioning which is used in the teaching of critical thinking, causes students to manage large amounts of information in order to support their arguments.

Techniques which challenge students to employ creative thinking, thinking which produces rather than repeats information in their learning, are usually limited to use on gifted students, and these efforts have provided a 77% success rate when used by students (Torrance, 1986). Many of the tasks in language arts classrooms and many of the methods of teaching critical thinking require the production of information. Critical thinking in language classrooms can involve essay writing, which combines the elements of production with topic mastery through language. Thus, this and similar methods challenge students to reason in writing in a manner that enhances their personal learning *and* achievement simultaneously.

Andre found that higher level questions even increase the level of reproductive and productive knowledge when students' intentions and perceptions of a reading assignment are of *least effort*, "getting through the instructional materials without doing any more than is necessary to answer the adjunct questions" (Andre, 1979). This implies that higher-order questioning enhances students thinking and writing while students are least inspired to learn, showing the strength of this teaching method in itself. Andre's research also can be understood as indicating that higher level questions can enhance the educational opportunities of students outside elite or college preparatory classes who are generally characterized as more motivated than other students.

With regard to the effects of critical thinking teaching methods on student attitudes toward learning, Joseph J. Onosko found that "teachers who reflect about their own practices, value thinking, and emphasize depth over breadth of coverage tend to have classrooms with a measurable climate of thoughtfulness" (Onosko, 1993). As such, even

though students of all levels may not read works with great interest, but may still be stimulated to think on a higher-order level as Andre found, they are often inspired to think critically by thoughtful teachers.

Marzano summarized the findings of the educational researchers he studied in his meta-analysis as providing five principles for the teaching of thinking in the language arts (Marzano 1991). First, teachers must address the mental context of the learner. Second, teachers should integrate attention to procedural and declarative information. Third, teachers should employ multi-modal presentation and investigation of material. Fourth, teachers must vary cognitively complex tasks. Fifth, this type of instruction must emphasize the dispositional nature of higher-order thinking.

Methodology:

a. Subjects: My subjects were four English teachers in a high school in the Southeastern United States.

b. Measures/Procedures: My measure was a chart of 18 characteristics of critical thinking teaching methods. I recorded the frequency with which students were challenged to think critically according to these methods. I scored the sheets for both verbal and non-verbal challenges from the teacher (so a question and an essay assignment would each be a single mark according to a criterion). With regard to the eighteen characteristics, I will give examples to illustrate what counted in my measure of the frequency of critical thinking challenge usage: challenging questions and tasks could involve essay writing or higher order problem solving on worksheets that related to the subject of study; teacher thoughtfulness was measured by the number of times a teacher visibly paused to reflect on the subject of study or a student's question; appropriate material was judged by the richness or difficulty of a subject of study-- Moby Dick would have counted, but not "Free Willie"; and finally, the establishment of affectual, attitudinal and focal contexts of critical thinking was marked by the number of times a teacher specifically instructed students to reflect on what to do or believe.

c. Analysis: I used an Independent T-Test to measure the distribution of the frequency with which students were challenged to think critically in college preparatory and non-college preparatory classes.

Results/Conclusion/Discussion:

The eighteen characteristics of critical thinking challenges I measured were: 1) sustained examination of a few topics rather than a broad survey; 2) lesson plan shows coherence and unity; 3) teacher asks challenging questions and/or structures challenging tasks; 4) students allowed reasonable response time to think about questions; 5) teacher shows thoughtfulness; 6) students are challenged to give explanations and reasons for their

conclusions; 7) students are challenged to analyze, evaluate and construct informal arguments; 8) teacher uses appropriate material for teaching thinking; 9) teacher explains format for critical thinking activities; 10) teacher gives examples to illustrate critical thinking tasks; 11) teacher gives constructive evaluation of student arguments; 12) teacher requires students to revise their arguments; 13) students select, plan, develop and evaluate their work; 14) teacher establishes affectual, attitudinal and focal contexts of critical thinking; 15) teacher questions move from declarative (facts) to procedural (how); 16) teacher uses multi-modal presentation; 17) teachers varies use of cognitively complex tasks; 18) teacher shows importance of mental habits to specific tasks. In the respective order of this list, the teachers scored: Teacher #1-- 5, 5, 8, 29, 41, 2, 3, 5, 1, 0, 4, 0, 4, 8, 11, 8, 11, 9; Teacher #2-- 5, 10, 39, 4, 60, 27, 23, 9, 8, 7, 29, 4, 16, 26, 41, 9, 19, 17; Teacher #3-- 5, 8, 13, 23, 45, 2, 2, 1, 3, 3, 3, 2, 6, 3, 27, 7, 12, 29; Teacher #4-- 5, 11, 15, 2, 62, 10, 11, 6, 9, 6, 34, 7, 29, 13, 12, 9, 8, 5.

With regard to the frequency of critical thinking challenges in the classrooms of these teachers, I found that in almost any class on any given day, students were challenged to think critically in at least some small degree according to one of the eighteen characteristics of critical thinking challenges. However, Teacher #2 and Teacher #4 were the only two teachers to conduct an entire observed class according to the criteria of critical thinking challenges. Both required that students produce large volumes of information on self-selected, developed, planned and evaluated tasks, challenged the students to reflect on and argue for their opinions on what to do or believe, gave the students constructive evaluation of their arguments, and most importantly, required them to revise their arguments either in classroom conversation or in graded writing assignments. These two class hours of observation measured high and above any other individual class hours of observation due to the nature of the lessons. For the most part, I attribute the strength of the results for all four teachers to their rare professionalism and expertise.

Since I wanted to compare the means of two samples, college preparatory and non-college preparatory language arts classes, and the classes were unrelated-- the teachers and students were different in each group-- I used the Independent T-Test on MYSTAT, a computer statistics program, to calculate the results. I set alpha at .05, and since probability was determined to be .235, greater than .05, I retained my null hypothesis that there was no significant difference in the frequency with which students were challenged to think critically in college preparatory and non-college preparatory classes. Thus, the results gathered from my measures during twenty total hours of observation of four high school language teachers suggest that whether or not a high school student enrolls in college preparatory or non-college preparatory language classes will not affect the amount with

which he or she is challenged to think critically. In conjunction with my measure of the frequency of these critical thinking challenges, my results imply that all students are challenged to think critically on a regular basis to a measurable degree. However, these results are limited to the time frame of my study and were affected by the unusually high level of professionalism of these teachers.

Critical thinking relates directly to how we see the world and how we see ourselves. In critical thinking activities, teachers challenge students to reflect reasonably on what to do or believe, push students to articulate their vision to the best of their ability, and finally require students to revise the information they produce. In this way, teachers of critical thinking empower their students to grapple the higher questions of their environment and themselves with sophistication and elegance.

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To What Extent are Primary Sources Used to Teach History to High School Students?

by
Kara Beth Smith

with
John Litcher, Ph.D.

Wake Forest University
Department of Education
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Introduction

Using primary sources, such as literature, posters, advertising, newspapers, artifacts, photographs, and architecture from a specific time period in the history classroom is not a new idea. What is sometimes called "source study" became popular in the late 19th century (Hertzberg, 1985). However, using primary sources as a teaching tool has received much attention in the past few years, as teachers have become more interested in making history a less passive experience for students, and in developing students' critical thinking skills.

This study examines the extent to which primary sources are being used in the history classroom, as well as what types of primary sources teachers are using. In addition, an investigation is made into what types of primary source materials are available for teachers' use, including those contained within textbooks.

Review of Literature

Very little research has been conducted in this area. A study of history classrooms conducted by the National Science Foundation in 1977 found that 4 percent of the high school classrooms surveyed used copies of original documents more than 50 days of the year, while 19 percent of the classrooms used them between 10 and 50 days of the year (Weiss, 1977). This indicates that primary sources continue to be used with some regularity in about a quarter of all high school history classrooms.

Some authors claim that use of primary sources is extremely rare, and that the history classroom is a dreary, mindless experience for students who believe that history is merely a set of facts and dates to be memorized: "Sometimes [students] memorize information or read stories about events and people. They seldom work with other students, use original documents, write term papers, or discuss the significance of what they are studying" (Ravitch and Finn, 1987, p. 194).

In response to this type of criticism of history teaching, the Bradley Commission on History in Schools, created in 1987, recommended that ". . . historical study should provide context for facts and training in critical judgment based upon evidence, including

original sources. . . ."(Bradley Commission on History in the Schools, 1989, p. 12).

Hazel Hertzberg argues that "[t]he historical imagination . . . develops not just through reading or hearing about statements about the past but through acquiring for oneself a sense of the concrete circumstances of life--its sights, sounds, smells, tastes, textures. Students need to use all their senses in gaining an understanding and feeling for the past" (1985, p. 26-7). One way to accomplish this multisensory learning experience is through the introduction of primary sources.

One advantage to using primary sources as a teaching tool is that they help students to connect with the period, and remove the distance from history that students traditionally feel. Gary Nash explains that introducing primary sources into the history classroom ". . . can draw students into active learning and excite them about the character of the past and its relevance to their own society. . . . Primary source materials enable students to see history through the eyes of the very people who were part of important decisions . . . and they help students develop historical empathy so that they realize that history is not an impersonal process divorced from real people like themselves" (Nash and Symcox, 1991, p. 25).

Primary sources can also help students " . . . understand how the historian works and how a historical narrative is created, and to develop skills needed in dealing with evidence" (Hertzberg, 1985, p. 29). One author suggests that when students deal with primary sources, they begin to understand that " . . . all written history reflects an author's interpretation of past events. Therefore, as students read a historical account, they recognize its subjective nature" (Alexander, Byers, and Freeman, 1989, p. 9). In this way, primary sources teach students about the historical process and also encourage students to develop valuable analytical skills.

Methodology

The study began by conducting 20 hours of observations in high school history classes in the southeastern United States in order to get an idea of how often and in what ways teachers are using primary sources in their classrooms. Observations took place in three different eleventh-grade American history classes (one in each of two public schools, and one in a private school), and two tenth-grade world history classes (one in each of two public schools). Classes were at both the honors and the "regular" tracks.

The second stage of the study involved interviewing four high school history teachers. The interviewees were the same teachers whose classes were observed during the observation stage of the study. The interview protocol included questions concerning the frequency of primary source use, the variety of sources used, the manner in which teachers introduced primary sources into the classroom, and what types of barriers to using primary sources the teachers encountered. Responses were evaluated ethnographically.

The study concluded by conducting a content analysis of a high school level American history text: *The United States*, by James Davidson and Mark Lytle (Englewood Cliffs: Prentice Hall, 1988). The researcher devised a list of types of primary sources,

including photos, paintings/drawings, artifacts, letters, prose, poetry, journal entries, posters, advertisements, newspapers, magazines, political cartoons, contemporary historical accounts, and speeches. The researcher then randomly selected fifteen out of forty-one chapters to analyze for primary source material. Primary sources were then tallied according to type.

Results and Conclusions

The researcher's observations revealed that primary sources were used in the classroom on fifteen occasions throughout the 20 hours of observations. The frequency with which the different teachers used primary sources in their classroom varied quite a bit: one teacher used primary sources in nearly every class period, while another teacher only used primary sources twice during six hours of observations. However, all four teachers observed used primary sources at least twice during the observations. This seems to contradict the study conducted by the Center for Research and Education (*Report of the 1977 National Survey. . .*) that concluded that less than a quarter of teachers used primary sources more than ten times in a school year.

The researcher observed many different types of primary sources being used. Historical documents, including religious texts, speeches, and contemporary accounts, were the type of primary sources introduced into teachers' lecture most often. Primary sources such as paintings, photographs, letters, and other documents were used on several occasions by students (at the teacher's suggestion) in class presentations. One teacher assigned a paper in which students were required to use at least two primary sources in their research. In three cases, the introduction of primary source material precipitated a critical discussion or debate concerning a historical period, concept, or event.

The interview stage of the study revealed that the selected teachers were very interested in using primary sources. Concerning frequency of usage, the variation between teachers was considerable: while one teacher claimed to use primary sources nearly every day, another teacher approximated usage at once every other week. Each teacher, however, expressed a desire to use primary sources more often than they did, and agreed that primary sources are a valuable teaching tool.

One interesting point that an interviewee brought up was the importance of using primary sources in Advanced Placement courses. The teacher mentioned that since students are required to use primary sources to write the free response portion of their AP exam, it is necessary to familiarize them with working with and analyzing primary sources.

Concerning the manner in which teachers introduce primary sources into the history experience, responses were varied. Although every teacher mentioned including primary sources in lecture, only two teachers mentioned having students use primary sources on their own to prepare for class presentations, and only one teacher talked about having students use primary sources to write a research paper. Three of the teachers included primary sources found in the class text as assigned reading. However, two teachers mentioned that students often skipped over sections of primary materials in their texts and

would not take time to analyze them on their own without incentives.

When asked for what purpose they introduced primary sources into their classes, all of the teachers mentioned making the class more interesting for the students and helping them to engage with the period or event being studied. In addition, all of the teachers talked about using primary sources as a basis for promoting critical thinking and discussion among their students.

Teachers mentioned a variety of types of primary sources they use: speeches, the Constitution, the Declaration of Independence, letters, journals, novels, first hand historical accounts, religious texts, pictures, and photographs were the most commonly mentioned sources. One teacher mentioned using paintings and literature from to learn about a specific period. Another teacher talked about assigning students to conduct interviews with elderly citizens in the community to construct an oral history of a contemporary historical event. For American history teachers in particular, film clips such as newsreels were a popular primary source to use in the classroom.

When asked about barriers to using primary sources more often in the classroom, the overwhelming answer was limited class time and preparation time. Each of the teachers talked about the difficulty in balancing coverage of important course content with the time it takes to introduce things such as primary sources in a meaningful manner. For example, one teacher talked about the need to cover all of the information included on the end of course examination, and how this conflicted with the desire to do creative things such as examining original documents in class. Three of the teachers mentioned limited preparation time as a barrier to finding and using primary sources. They explained that in order to use primary sources, they first had to locate them and then work them into their class time. Often times, this involves a good deal of research and planning ahead. Two teachers mentioned that the primary source materials they use most often are ones which are included in the students' texts or in the accompanying teachers' manual. Two teachers said that they have been able to implement increasing amounts of primary sources into their curriculum as they have gained more experience with teaching their subject.

All of the teachers mentioned cost of primary sources as a potential barrier to obtaining desired material for their classes. However, one teacher claimed that the school district had a good deal of materials available to teachers who take the time to discover them. All but one of the teachers mentioned their class textbooks as a valuable source of primary materials.

When asked what is the greatest advantage to using primary sources, the teachers concurred: they make history more interesting to the students by helping them visualize and get in touch with history. As one teacher said, "They make history real." In the teachers' opinion, students respond well to primary sources, except for when they found them too difficult to read or understand.

The content analysis portion of the study revealed that a number of primary sources are included in the text. A total of 154 primary sources were found in the 15 chapters

analyzed; about 10 per chapter. Nearly one-third of these sources were photographs, and another third were paintings or drawings (such as portraits, period pieces, depiction of events or everyday life). Also common (occurred 14 times) were historical documents such as eye-witness accounts of events, government documents (such as Supreme Court decisions), journals, and letters. Political cartoons were very common with a total of 15; nearly one for every chapter examined. Several examples of popular media were included, such as advertisements, newspaper pages, and covers of magazines. In addition to the material found in the chapters, special "skill lessons" included primary sources and tips on how to evaluate them: for example, "Analyzing Oral Evidence," "Lexington and Concord: Analyzing a Primary Source," and "Using Visual Evidence." Ten special sections, entitled "Voices of Freedom" were included throughout the text. These sections provide a copy of a letter, speech or other recording of a "voice" contemporary to the historical period. Questions for discussion or thought about the selection are included as well. Copies of other original documents such as the Declaration of Independence and the Constitution of the United States were provided in the back of the textbook.

In conclusion, this study reveals that the teachers observed and surveyed use primary sources with varying degrees of regularity in their classrooms. These teachers demonstrate a level of usage of primary sources beyond the figures shown in the 1977 survey conducted by the Center for Research and Education. All of the teachers, seemed (from both the observations and the interviews) to consider using primary sources to be an important part of teaching history, mostly because they increase students' ability to interact with and understand history. The primary barrier to more frequent use of primary materials for these teachers is limited time, both class time and preparation time. The textbook analyzed provides a number of primary sources for convenient use for teachers and students. Since preparation time is a significant barrier to more frequent use of primary sources, it would be helpful to conduct some research into available primary source resources.

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Predictive Factors for High School Physics Enrollment

by
Alice B. Sy

with
Dr. Robert Evans, Ph.D.

Wake Forest University
Department of Education
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Science educators have long been concerned about student recruitment and enrollment. Low enrollment has been a particular concern for educators in the physical sciences. Studies show that only one-third of the students who complete first-year biology continue on to take first-year chemistry. Of those who complete chemistry, only about one-fourth to one-third enroll in first-year physics (Doran, 1991). This dramatic attrition rate is cause for concern. If high school graduates are not prepared to enter into college science courses, the decline in the number of degrees awarded in the sciences and engineering will persist . If we want to maintain our current standard of living in this technological era, this trend must be reversed. Therefore, educators must understand the reasons behind low enrollment in the sciences, particularly in physics, and seek to remedy the problem.

Review of the Literature

Many studies have sought to identify the factors which affect science enrollment. Extensive research (Eccles, 1989; Kelly, 1988) has been conducted in the area of gender and science. These studies conclude that the underrepresentation of girls in science results from a lack of perceived support, lack of interest in science, and negative attitudes towards science and scientists. In addition, girls often cite that advanced science and math courses are not appropriate for their educational or career goals.

Race has also been identified as a factor which affects science enrollment (North Carolina Department of Public Instruction, 1993). African-Americans are consistently underrepresented in advanced science courses. Other variables associated with science enrollment include post high school plans and ability grouping. Typically, students who enroll in physics plan to attend college and are in the honors track.

Understanding the factors which affect participation in high school physics must include more than identification of external variables. If intervention programs are to be effective, predictive factors must be isolated. Then, target groups can be identified and intervention strategies can be designed.

In order to isolate the predictive factors for a given behavior, Ajzen (1985) developed the theory of planned behavior. This theory hypothesizes that predicting any behavior is a matter of understanding a person's intention to perform the behavior. This intention is a function of three factors: the attitude toward the behavior, the subjective norm, and the perceived behavioral control. The attitude toward the behavior is based upon the person's evaluation of performing the behavior. The subjective norm depends on how the person perceives social pressure from various referents about performing the behavior. Perceived behavioral control measures how likely the person is to change their intentions.

According to Ajzen (1985), a person's attitude toward a behavior (A_B) is the result of behavioral beliefs. These beliefs are a product of the possible outcomes of performing the behavior and an evaluation of these outcomes. The subjective norm (SN) is determined by perceptions of other people's opinions about performing the behavior as well as the motivation to comply with other people's beliefs. The perceived behavioral control (PBC) is determined by the perceptions of factors which could inhibit or facilitate the performance of the behavior. The following equations represent the theory of planned behavior:

$$B \sim I = w_1 A_B + w_2 SN + w_3 PBC$$

$$A_B = \sum b_i e_i$$

$$SN = \sum b_j m_j$$

$$PBC = \sum cb$$

The theory of planned behavior assumes that a person's intentions are only a function of the beliefs associated with performing the behavior. Under these assumptions, demographic variables are not related to a behavioral intentions unless they influence the attitude toward the behavior, the subjective norm, or the perceived behavioral control (Ajzen, 1985). Therefore, external variables have no direct effects.

Crawley & Black (1992) explored secondary school students' intentions to enroll in physics by using the theory of planned behavior. They also examined effects by gender, race, grade level, educational goal, and career goal. The seven salient beliefs about the

consequences of enrolling in physics were attaining educational goals, attaining career goals, increased knowledge, doing more homework, learning useful information, helping their grade point average, and studying interesting material. Salient referents included parents, siblings, science teachers, friends, and guidance counselors. Events which could change intentions were course conflict, hearing that physics is hard, disliking the teacher, extra-curricular activities, fear of failure, and a change in career or educational plans.

Results indicate that only grade level and career goals were significantly correlated to the behavioral beliefs. Race was the only external factor related to normative beliefs. Control beliefs were only associated with educational goals. Gender did not have a significant relationship to any of the beliefs. Of the seven salient behavioral beliefs cited earlier, only the belief that enrolling in physics would result in doing more work at home or at school was not a significant belief. The subjective norm was influenced only by parents and siblings. Perceived behavioral control was a function of course conflict, extracurricular conflicts, and fear of failure. Perhaps the most interesting result was that only attitude toward the behavior and perceived behavioral control were significant factors in the overall model. Subjective norm was not a significant determinant (Crawley & Black, 1992).

The study by Crawley & Black (1992) supports the applicability of the theory of planned behavior to enrollment decisions. The theory provides a powerful model for predicting enrollment, and can therefore offer valuable insight for effective intervention. Therefore, the methods used in conjunction with the theory of planned behavior will be employed to assess the nature of students' intentions to enroll in high school physics.

Methodology

Five biology classes, three honors and two average, were chosen for this study. Since biology is a course requirement for graduation, this sample was assumed to be representative of the overall school population. An open-ended questionnaire was administered to a pilot sample of twenty students. This questionnaire asked students to cite advantages and disadvantages of enrolling in physics, people who would approve or disapprove of their enrollment, and other factors which would encourage them to or discourage them from enrolling. Behavioral beliefs cited by the students in this initial sample fell into three categories. First, students felt that enrolling in physics would help them attain educational and career goals. Second, students thought that taking physics would increase their general knowledge of the world and of physics in particular. Last, students cited various outcomes which addressed the difficulty level of physics, including doing more homework and affecting their grade point average.

Five referents were recognized as people who would approve of them enrolling in physics. These referents were parents, science teachers, scientists, friends, and siblings. In response to factors which would discourage them to take physics, students answers fell into the following categories: fear of failure; conflict with another course; not appropriate for educational or career goals; and not knowing what was covered in a physics class.

As a result of this exploratory work, minor changes were made to the final questionnaire design. However, most of the questionnaire was identical to that used by Crawley & Black (1992). This final questionnaire was administered to the remaining students in the five classes (n=72). Students responded to statements on a 7-point scale ranging from extremely likely to extremely unlikely. First, students rated their intention to enroll in physics. Then students were asked to rate the likelihood of an outcome and to evaluate the outcome. Next, students rated how likely it was that certain referents would approve of their enrollment in physics, and how likely they were to comply with the opinions of these referents. Finally, students responded to how likely certain factors were to discourage them from enrolling.

Results

Multiple regression analysis was used to determine the significance of the hypothesized model as well as to determine the individual significance of each factor. Results from this analysis produced the following regression equation:

$$\mathbf{I = (0.238 * A_B) + (0.356 * SN) + (-0.344 * PBC)}$$

These coefficients are standardized β - weights. All three factors were significant predictors at the $p < .05$ level. The regression model was also significant at this level. This model accounts for 33.6 % of the variance in students' intentions to enroll in high school physics.

Means for the products $b_j e_j$ were similar for all six beliefs. This implies that all six beliefs are of equal importance to these students. Means for the products $nb_j mc_j$ reveal that parents and science teachers are the most encouraging and influential referents. Students were most likely to decide not to enroll in physics because of extra-curricular activities which would reduce their study time. Conflict with other courses, not knowing what is studied in a physics course, and fear of failure were also influential prohibitive factors.

Race and post high school plans were the only external variables that did not reveal significant differences. The only significant difference by gender was in the subjective norm. The mean value for the subjective norm was higher for girls. This indicates that girls are more likely to be influenced by others' opinions concerning enrollment in physics than boys. Significant differences also occurred by grade. Ninth graders had higher values for

the subjective norm and greater intentions to enroll in physics. Significant differences by ability group were profound. Honors students were more likely to intend to enroll in physics, had better attitudes towards enrollment, were more influenced by opinions of others, and perceived more control over their behavior than average students did.

The high level of significance of the regression model hypothesized from the theory of planned behavior validates the model's applicability to the sampled population. A student's intention to enroll in high school physics can be partially predicted by examining the student's attitude, subjective norm, and perceived behavioral control. While other factors must exist to explain the remaining variance, the predictive factors considered here can provide valuable insights into effective avenues for recruitment strategies.

Implications

Intervention strategies should attempt to change enrollment intentions by increasing positive attitudes, particularly by emphasizing the importance of physics in future education or career plans. This information should be conveyed by parents and science teachers, since they were the most influential referents. Schools should work to minimize conflict with other activities and courses. Information on the topics studied in high school physics should also be provided to younger students. While certain groups may be targeted for recruitment, such as women and minorities, the avenue towards effective intervention should be through altering these predictive variables.

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How Do Single-Sex vs. Coed Science Classrooms Affect Females' Attitudes, Beliefs and Achievement?

by
Rebecca Thompson

with
Leah McCoy, Ed.D.
Wake Forest University
Department of Education
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Over the past decade the disparities between men and women in the science classroom have been a growing concern in education. Females are trailing behind men in the science classroom. They score lower on science achievement tests and are poorly represented in science and technological fields.

Men continually outperform women in science achievement (Kahle & Oakes, 1990; Meece, 1994; Sadker, Sadker & Klein, 1991). A study conducted by the National Science Foundation in 1990 found discrepancies in achievement scores ranging from twenty-nine points for biology achievement tests to fifty-six points for physics achievement tests.

Not only are women lagging behind men in science and related achievement tests, but they are also continually underrepresented in scientific and technological careers. Only sixteen percent of all the nationwide employed scientists and engineers are women (Kahle & Meece, 1994). Research has shown that thirty percent of the bachelors degrees in science and engineering and twenty-one percent of the doctorates in science fields are obtained by women (Kahle & Meece, 1994). Although women today are more highly represented in these careers and fields than twenty years ago, much more needs to be done to encourage women to pursue occupations in science. Among the many proposed solutions to this problem, a single-sex science classroom has been viewed as a possible solution.

Single-sex Classes

Many believe with so much influence from a male dominating society we must provide an opportunity for a science classroom that does not reinforce the "Masculine Domain" (Estrich, 1993; Sadker et al., 1991). It is believed that females can flourish in a single-sex environment and that they have a better chance of combating the variables contributing to gender differences among males and females in science achievement.(Estrich, 1993; Gross, 1993; Ndunda & Kiluva, 1990).

The single-sex environment has been shown to provide a successful and equal education for women (Campbell & Evans, 1993; Gross, 1993; Ndunda & Kiluva, 1990). This environment has allowed females to accomplish and achieve in what is viewed as a male dominated society. Research shows that eighty percent of the girls in an all-girls school take

four years of science and math, compared with the national average of two years in a coed environment (Estrich, 1993).

The significant results from studies comparing single-sex environments and coed environments may be a direct result of family background and school climate. Most single-sex schools are private institutions that are being compared to coed public education. Researchers claim this to be an inaccurate comparison due to the fact that often there are not equal educational opportunities available in both public and private education (Marsh, 1991; Riordan, 1992; Young & Fraser, 1992; Young & Fraser, 1994).

These differences need to be explored. Whether or not the single sex environment can be a solution for gender differences needs to be analyzed. However, these studies need to take into account the public and private school differences. The most viable method would be to look for how single-sex versus coeducational science classrooms affect female's attitudes, beliefs and achievement using a single sex private school and a coeducational private school. By reducing the socioeconomic differences we can focus on whether or not females achieve and benefit more from a single-sex classroom.

METHODS

This study explores female students' attitude and achievement in high school science courses using qualitative research methods to collect questionnaire and interview data.

Subjects

Students from a private single-sex high school and a private coeducational high school were asked to participate in this study. By reducing the socioeconomic differences the two groups can be more clearly compared on the gender variable.

The participants from each school were selected on the basis of their gender and level of secondary education. Tenth grade students from both schools were chosen as appropriate participants because they have experienced several years of formal science teaching and are able to discuss their experiences of science education in some detail. Fifty-five female participants came from the single-sex school and eighteen came from the coeducational school. These samples included all females in the tenth grade classes.

Procedure

The participants from both schools were asked to complete a Likert scale questionnaire consisting of eleven questions addressing attitudes, achievement and beliefs of science. After the questionnaires had been given, three students from each school were then randomly chosen for an interview. The interviews with participants from both schools were based on their experiences in the classroom with their peers, and on matters related to their present and past science courses, including their career aspirations

Data Analysis

The analysis of the data identified four categories: class experience, attitude, competence and future aspirations. The responses for each questionnaire question were tabulated and a percentage was calculated for how many responded to the question with either disagree or agree.

RESULTS

Classroom Experience

The females from the single-sex environment felt more comfortable, easy and able to speak up in class than the females in the coeducational environment (Table 2). From the single-sex classroom 71% disagreed with "I am uncomfortable asking questions, whereas from the coed classroom 55.5% disagreed. From the single-sex classroom 73% agreed with "I always speak up in class", whereas, from the coed classroom 44% agreed.

All three students that were interviewed from the single-sex environment supported the above data. They all felt very comfortable in class and speaking up in class. In fact, all three students had previously attended a coeducational private school and emphasized what a difference it has been and how much more they speak in their current environment. Prior to this year, participant D only spoke up when she had to, now she reported speaking up about twice every day or as much as she needed. As she stated,

> "I never talked a lot in science class. I was always very quiet, because of guys, definitely because of the boys in the class. Here it's all girls, and we can sort of do whatever and it's O.K. if we're wrong. The guys won't sit there and roll their eyes or anything."

When the single-sex students were asked if they felt uncomfortable in science class they all responded with "no". When they were asked whether they were more likely to ask a question to the teacher during class, after class or to a friend after class, all three responded with, " ask the teacher during class."

In contrast, two out of the three females from the coed private school stated that they only speak up in class when called on or once every couple of days. When asked whether they would be more likely to ask a question to the teacher during class, after class or to a friend, two out of three responded with, "a friend". As participant A stated, " A friend. A girl. Because I feel more comfortable talking to girls about stuff I don't understand. You don't know if a guy is going to make fun of you, like you're so stupid because you don't know."

Attitude

The questionnaire results indicated only slight differences in attitudes toward science between the students from the single-sex and coed environments (Table 1). The results from the interview showed that two out of the three students from the single-sex environment and one out of the three from the coed environment enjoyed learning about science. However, none of the interviewed students from either school looked forward to science class or stated they were taking the courses voluntarily

Competence

The questionnaire results indicated that students from the coed classroom felt slightly more confident in their understanding and viewing of science (Table 1). From the coeducational classroom 50% agreed with "Science is easy for me", whereas 42% from the single-sex classroom agreed with it. However, a greater percent (28%) from the coed classroom also disagreed with this statement than from the single-sex classroom in which 25% disagreed. In response to "I feel competent doing science", 55.5% from the coed classroom agreed, whereas 44% from the single-sex classroom agreed.

Although the questionnaire indicates that the students from the coed classroom view themselves as more competent in science, they reported having lower grades in science courses than the students from the single-sex classroom. When asked what their average science grade was, 74.5% of the students from the single-sex classroom reported having above a B, whereas 66.6% from the coed classroom reported having above a B. Thirty-five percent of the students from the single-sex classroom reported having A's and twenty-eight percent from the coed classroom reported having A's.

There was also a lower percentage of students from the coed classroom that reported science as one of their top two favorite courses. From the single-sex classroom 43.6% reported science as being either their first or second favorite class, whereas from the coed classroom 38.8% reported this.

Future

The results indicated that the students from both schools highly disagreed with, "Science is not useful outside of school." The results from the interview showed that two out of the three students interviewed from the single-sex environment felt they are going to pursue a science related career and all three felt it was important to learn science. One out of three of the students from the coed classroom felt they would pursue a science related career.

Table 1	Single-sex class		Coeducational Class	
	% Agree	% Disagree	% Agree	% Disagree
#1 Science does not interest me.	29	75	0	72
#2 Science is easy for me.	42	25	50	28
#3 Science is not very useful.	13	75	0	89
#4 I enjoy learning about science.	64	13	83	0
#5 I don't understand much.	18	67	22	72
#6 I am uncomfortable asking questions	24	71	22	55.5
#7 I look forward to science class.	36	27	44	44
#8 I feel competent doing science.	44	24	55.5	16.6
#9 Science is important for success.	65	11	61	11
#10 I feel uneasy in science class.	4	76	0	72
#11 I always speak up in class.	73	7	44	17

*scores do not total 100% due to the neither agree nor disagree choice possibility

DISCUSSION

The results from both the questionnaire and interviews showed that females from the single-sex classroom had a very different classroom experience than females from the coeducational classroom. In fact, the largest differences among the two environments were shown in this category. The females from the single-sex class were more comfortable, less intimidated and more likely to speak up in class than those from the coed classroom. Almost 30% more students from the single-sex classroom spoke up more in class and almost 20% more students felt more comfortable asking questions in class. One hundred percent of the students interviewed from the single-sex classroom would prefer asking a question during class to the teacher than to a friend after class, whereas 33.3% of the students interviewed from the coed classroom would prefer asking a question to the teacher during class. As all of the students from the single-sex classroom indicated the classroom environment allows them to ask questions whenever they are confused, to not feel stupid by asking questions and to enjoy science class more. When the students from the single-sex classroom compared their

recent experiences in a single-sex classroom to their previous experiences in a coed classroom they were completely different as participant D stated, "Here it is all girls we can sort of do whatever and it's O.K. if we're wrong."

The attitudes from the students were both very high, sixty to seventy percent of the students from both schools enjoyed learning about science and expressed an interest in science. This may be due to the fact that both schools place a heavy emphasis on the importance of all their subjects and especially science. Both schools have excellent science programs that encompass various learning styles and activities.

The reported levels of competence from the students from both schools were not very high, fifty to sixty percent of the students felt science was not easy for them and they did not feel very competent doing science work. Although results for this category were similar, the students from the single-sex environment had a slightly lower expectation of their competence level in science courses, but reported having higher grades in these courses than those from the coed environment. These results support what psychological research has shown that students of this age feel less competent with their work and are not very accurate in predicting their understanding or knowledge of material (Matlin, 1994).

A large percentage of students from both the single-sex environment and the coeducational environment recognized the importance of science for their future success and as being useful outside of school.

The results indicate that the most significant difference in the coed vs. single-sex classroom is that the single-sex environment allows the students to feel comfortable participating in class without the insecurities and feelings of competition, often placed on them by males. Ultimately, the single-sex classroom enables the females to achieve more.

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Teachers' Perceptions About Student Learning In Sex Education

By
Utasha Watkins

With
Dr. Robert Evans, Ed.D.

Wake Forest University
Department of Education
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Purpose

My research focus is on what the curriculum lacks in order for young people to be able to make competent decisions regarding sexual activity and the responsibilities that go along with it. At the present time, students receive sex education three times during their K-12 academic years. These three occurrences are during the fifth, seventh, and ninth grades. I am concerned about what students are retaining from these sex education opportunities. The question I seek to answer is: "What are sex education teachers' perceptions about student learning and in what ways can their courses be improved?"

Literature Review

Seventy percent of society tends to be in favor of having sex education course because of the high rates of pregnancies and sexually transmitted diseases among teenagers. Twelve million people are infected each year with sexually transmitted diseases; 63 percent of them are under the age of 25. One out of every ten teenage girls becomes pregnant each year, and more than 400,000 teenagers have abortions (Lickona, 1993). These statistics (which have been increasing over the past two decades) have scared society into finding ways to halt this escalation. Surprisingly, only ten percent of America's parents teach sex education to their children (Masters, Johnson, and Kolodny, 1995). Since only ten percent of parents are teaching sex education and seventy percent of society agrees that it should be taught, sex education has been handed to the next group of people who affect children's lives - their teachers.

A study was done on family life/sex education curriculum that was established in 1967 in the New York City school system for grades K-12 (Finkel and Finkel, 1985). The course was revised to not only include factual aspects of human reproduction, but also sociopsychological aspects of human sexuality. The teachers felt that the course was successful at making the transition. They thought its major strength was factual content, and its weakness was that more time was needed. One survey conducted with principals and teachers found that they agree on teaching strategies and amount of time given to sex

education (Oost, Csincsak, and Bourdeaudhuij, 1994). This study suggested that teachers would be better off changing their methods of teaching than to increase the time they devoted to sex education. Another study was done that focused on teacher usage and student preference (Hammonds and Schultz, 1984). Findings from this study show that teachers and students disagree on teaching methods. This study shows that teachers need to involve students in decision-making process about instructional techniques. Klein, Belcastro, and Gold (1984) focused on the points of view from students and alumni. Overall, students and alumni felt that they gained knowledge, attitude, and interpersonal skills as outcomes of their school's sex education program.

Since teachers can only teach from the material within the course, consideration needs to be given to the curriculum. The purpose of another investigation was to clarify the concept of family life education using methods of analytical inquiry (Thomas and Arcus, 1992). This study found that the general purpose of family life was to strengthen and enrich individual and family well-being. This study also found that the content area had eight components: 1) human development and sexuality; 2) interpersonal relationships; 3) family interaction; 4) family resource management; 5) education about parenthood; 6) ethics; 7) family and society; and 8) communicating, decision making, and problem solving. Lickona (1993) considered three sex education curricula. Two of them were nondirective and one was directive. The directive curriculum was determined to be the best. The Sex Information and Education Council of the US (SIECUS) developed guidelines of analysis for sex education materials. Klein, Goodson, Serrins, Edmundson, and Evans (1994) used these guidelines to determine the accredibility of five commonly used curricula. The curricula entitled Sex Respect and Teen Aid covered the least amount of information. The curricula that encompassed the guidelines the most were Sexuality Education Within Comprehensive School Health Education, Sexuality Education, and Values and Choices. The next study also focusing on SIECUS guidelines reviewed the Sex Respect curriculum (Goodson and Edmundson, 1994). Sex Respect tended to omit critical information, contained medical misinformation, and included sexist and anti-choice bias and it often had grounding in fundamentalist religious beliefs that lead to problems in the public school system. Another study on curriculum was done by Reis, Hertz, and Slager (1986). This research showed that teachers often call on nonschool agencies when they felt that they were not well enough prepared to present this information to their classes.

The last two studies concentrate on reasons why prevention and behavior are not affected. Males (1993) did research on California's youth and found that young girls are having sex with men not boys their same age. The curriculum omits adult-teen

intercourse. Kirby (1985) presented two reasons in his paper: a limited increase in knowledge and a limited impact of knowledge on behavior.

Methods

The sample for this study consisted of four ninth grade health education teachers in North Carolina. The teachers were chosen from two high schools. There were two from each site. The two schools were selected because one was located in the city, and one was located in a rural area. Therefore assuming some diversity.

The instrument used to gather the data was a ten question interview developed by the principal investigator. The interview questions consisted of four topics: 1) time allotment; 2) family life curriculum; 3) performance on test and most missed facts; and 4) teachers' thoughts on improvements and goals for the course.

The interviews were analyzed by ethnographic methods. The answers from this research have been grouped and analyzed by themes and similarities.

Results

Description of time allotments given to the sex education unit

Sex education was generally taught during the middle of each semester of health education. The teachers wanted to introduce some of the basic health fact first so that their students could understand the information presented in the sex education unit. Fifty percent of the teachers spent two weeks teaching sex education. Twenty-five percent of the teachers spent three weeks on this unit. Twenty-five percent of the teachers spent one week and a half on this unit. The two teachers who taught the course for two weeks felt that the course needed to be longer. One of these two teachers said that health and physical education should be two separate courses lending more time to areas such as sex education. The remaining two teachers liked their time allotments.

Sex Education Curriculum

One hundred percent of the teachers taught sexually transmitted diseases and abstinence. Seventy-five percent of the teachers taught contraception. Fifty percent of the teachers focused on anatomy & physiology, decision-making skills, myths & facts about sex, and sexual abuse. Only twenty-five percent educated his/her students about pregnancies and the consequences of having premarital sex.

All of these teachers used an abstinence based curriculum because their school system required it. Some of the differences in curriculums reflect what the boards of education and county curriculum heads emphasized.

Test Performance and Most Missed Facts

The students from fifty percent of the teachers performed the best on the sex education test than on any other test in the health unit. The teachers felt that their

students performed well even though they did not have a book because they were interested in all of the material presented. The other fifty percent of the teachers had half of their students to do well on test and half that did poorly on the test. These students tended to be more interested in prevention, STDs, sexual harassment, and date rape. There were thirty books per class which the students had to share. The most missed facts were on anatomy & physiology, when a female can conceive, and the differences between syphilis and gonorrhea. Gonorrhea, being one of the most missed facts, could explain why North Carolina has the highest cases of this disease out of all the fifty states. Syphilis is also on the rise again. Seeing that some young people do not know when a female can conceive, could explain the high rates of pregnancies.

Improvements to Sex Education Curriculum and Goals for Sex Education

One hundred percent of the teachers agreed that a knowledgeable speaker from the community who had experienced a pregnancy or STD would be helpful. The teachers believed that peers tend to listen to other peers more than anyone else. Twenty-five percent of the teachers wanted to bring in real life drama movies dealing with sex . This teacher thought it would grab her students' attention because it would be like watching TV (something they enjoyed). Twenty-five percent of the teachers thought that it was nothing else he/she could do. The remaining two teachers agreed that more knowledge needed to be given. The only way that this could occur was by lengthening the course. One of these teachers would like to bring in an estimate of the cost of raising a child. The majority of the teachers saw that the curriculum needed to be improved.

One of the teachers just wanted to teach one student one fact that they once thought was a myth. Another teacher wanted to help one student postpone sexual activity until he or she was ready by teaching one fact. The remaining two teachers hoped their students would receive the message that sex has certain dangers that come along with it for students their ages. All of these teachers wanted to protect their students from pregnancies and STDs by giving them the weapon of education.

Conclusion

Overall, the curriculum is satisfactory at the present time, but there is room for improvement as stated by the majority of the teachers. There needs to be some set guidelines that are not vague and ambiguous when it comes to family life/sex education and the time to allot to the course. These guidelines should be formed from a consensus of the teachers across the state and placed in the North Carolina Handbook for Healthful Living for not only grades 9-12 but also all grade levels.

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Position: Associate Professor

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