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ABSTRACT

This monograph provides the following 11 papers presented at a 1995 symposium on curriculum and instruction: (1) "Early Children Education in Belarus: Kindergarten No. 490" (Linda A. Good) a case study of one school for 260 children, ages 2-7; (2) "How Parents Spend Their Time" (Timothy Lillie) an investigation of how parents of children with disabilities spend their time; (3) "Opinions of Principals toward Violence in Schools" (Robert W. Wood, Gareth G. Zalud, and Constance L. Hoag) a survey of middle and secondary level administrators in South Dakota; (4) "Conceptual Knowledge in Physical Science of University Students in an Elementary Education Preservice Program" (Paul B. Otto) an investigation into students' ability to explain scientifically an observed phenomenon; (5) "The Professional Reading Habits of Elementary School Principals and Teachers" (Garreth G. Zalud, Robert W. Wood, and Constance L. Hoag) a survey which identified the most frequently read professional journals; (6) "Picture Books: They're Not Just for Kids Anymore" (Maurine V. Richardson and Margaret B. Miller) suggestions for choosing and using picture books in the classroom; (7) "Exploring Modes of Thinking: A Study of How Student Teachers Reflect on Their Practice" (Lana M. Danielson) analysis of interviews and student journals; (8) "Principals' Perceptions Concerning Peer Harrassment" (Constance L. Hoag, Gareth G. Zalud, and Bobere W. Wood) a survey of type and incidence of peer harassment in South Dakota schools; (9) "Mathematics Achievements: Hispanic-Anglo" (Roger Ray Parsons and Lena Khisty) comparison of patterns of student performance on mathematics achievement tests across groups and grade levels; (10) "Time for a Change: Studying Time and Space from an Historical Perspective" (Sharon C. Lee and Lisa A. Spiegel) discussion and suggested readings for a thematic unit on time; and (11) "University of South Dakota Law School Students' Perceptions of Law-Related and Civic Education" Sheryl Feinstein, Lynne Roach, and Robert Wood) a survey of law students' opinions about law-related education in elementary and secondary schools. (Most papers contain references.) (JB)

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SYMPOSIUM PREFACE

The Curriculum and Instruction Research Symposium was conducted on April 28, 1995 to promote the professional sharing of current educational issues. Other goals of this symposium included providing a forum for dialogue concerning relevant educational topics, and the sharing of faculty research interests.

This symposium report document contains a myriad of educational issues, topics and research, and is the written report reflecting the oral presentations. We believe the publication of this document will continue to serve as a forum to encourage professional dialogue and as an acknowledgment of current, relevant research in the field of education.

We gratefully acknowledge the financial support received from the School of Education to help defray the cost of the publication of the symposium events.

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September, 1995

EARLY CHILDREN EDUCATION IN BELARUS: KINDERGARTEN NO. 490

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Until recently, there were barriers to learning about early childhood education in the Eastern European nations. Barriers such as language and politics, including the cold war, were not conducive to sharing information between the United States and the nations of the Soviet Union. However, when Soviet policies softened and particularly when the Soviet Union disbanded in 1991, doors to information sharing were opened. Although the peoples of the newly independent states and the people of the United States are eager to learn from each other, we still don't know very much about one another's systems of early childhood education.

What we know about how young children are cared for and educated in the Eastern nations is limited. However, we do know a few things. Early childhood care and education are well established in countries of the former Soviet Union. Services for both typical and atypical children have a long history in these Eastern European nations. Kreusler (1970) reports that preschools were established in czarist Russia, and "Russia established a kindergarten for preschoolers with disabilities at the turn of the century" (Graves and Gargiulo, 1994, p. 208).

Tudge (1991) reports the existence of nurseries for infants to three-year-olds and kindergartens for children from three to seven years of age. Elementary school typically begins with grade 1 for seven-year-olds. However, in the 1980's, grade zero, a transitional program for children between kindergarten and grade 1, was established. This program allows children who turn six by April 30 to attend public school (Amonashvili, 1989).

Until 1959, nurseries were administered by the Ministry of Health and kindergartens were administered by the Ministry of Education. But after 1959, a curriculum with strictly defined objectives for children from age one to age seven was outlined for each year by the Academies of Pedagogic and Medical Science. A daily schedule of activities was also provided such that education in the kindergartens was to be concerned with physical, mental, moral, and aesthetic development (Kruesler, 1970). Graves and Gargiulo (1994, p. 206) state that "kindergarten classes operate six days a week during hours that accommodate working parents".

While theorists like Russian developmental psychologist Vygotsky

40 copies of this document were printed by the University of South Dakota at a cost of $ 7.77 document.

advocate that play should be the basis of the curriculum for preschoolers, recent reports indicate that learning activities are structured, regimented, and teacher-led (Graves and Garguilo, 1994). It has been reported by Tudge (1991) that preparation for schooling begins when six-year-olds are taught reading and arithmetic.

Now that our nations have allowed more access to one another's institutions, there is a need to find out more about how young children are cared for and educated in the newly independent states. Has the educational system changed to reflect a more national, regional, or local influence? Does the government continue to support early education? Have events such as the Chernobyl nuclear disaster impacted the curriculum or special education services in the republic of Belarus?

The purpose of this study was to conduct a case-study of one kindergarten in Belarus.

RESEARCH PROCEDURES

Arrangements were made to visit a kindergarten (preschool) in Minsk, Belarus in June, 1994. Because of the language differences, a Russian/English interpreter was used to facilitate communication. Following a tour of the facilities, personnel (the kindergarten director and the regional curriculum specialist) were interviewed. Both the tour and the interview were videotaped. The videotape was edited upon return to the United States.

OBSERVATIONAL COMPONENT: DESCRIPTION OF KINDERGARTEN No. 490

The Facilities

Kindergarten No. 490 is located in the city of Minsk in the state of Belarus. It is a large building that is not differentiated from the many cement structures of Minsk. The exterior appeared rather stark, which is typical of post World War II architecture in Belarus. The building is not identified by a sign or a building marker.

The grounds consist of some grassy areas and some cement-paved

areas. The outdoor area was fenced. Trees and shrubs were present. Playground equipment was sparce.

The interior of the building is divided into 4-room complexes for groups of twenty children each, rooms for the specialists, a teachers' resource room, and the director's office.

The children's complexes are attractive, bright, and inviting. There is an entry room, a classroom/playroom, a bedroom, and a bathroom. Rooms are clean, well-lit, and spacious. Hardwood floors are enhanced by area rugs. Plants, fishtanks, and statues at the child's height bring a homines to the classroom environment. Professional art adorns the walls. The entry room is furnished with lockers for the children. It is a small room that acts as a buffer zone between the classroom and the hallway.

The children's playroom/classroom is divided into different areas: the table area where five small tables and accompanying chairs are arranged together, learning centers which are placed along the walls, a gross motor area with slide and climbing equipment, and a carpeted area for play. Toys are organized together according to curricular area. The classroom/playroom is equipped with a variety of toys which are displayed on low, open shelves. Stacking toys, blocks, books, and musical toys can be seen. Child-sized furniture consists mostly of tables, chairs, and toy shelves. Tricycles, wooden rocking horses, and a child-sized slide are present in the large classroom/playroom. Supplies such as paper and crayons are available. Unlike the typical classrooms in the United States, there were no signs of paints or easels, sand or water play areas, mathematical manipulatives, or science materials. Playdoh or other sensory materials were not observed. No children's work was displayed.

The sleeproom invites each child to rest in his/her own bed complete with feather comforter, bedspread, and feather pillow. The younger children sleep in small, child-sized beds. The older preschoolers have wooden bunkbeds. Beds are placed side-by-side in groups of two ar d are also placed end-to-end so that there are two group of four beds, a walking space, another two groups of four beds and a walking space, etc... Lace curtains in this bedroom environment contribute to a homelike atmosphere.

The children's bathroom has three child-sized sinks and toilets. The doors to the toilet stalls are painted with flowers. Each child has his/her own personal cloth towel which is hung on a peg in a narrow wooden locker in the bathroom. Hairbrushes for each child are stored in the bathroom. One open shower with a hand held shower hose is available in the bathroom.

Besides the four-room suites for each age group, there are additional areas that the children visit in the school. These include the physical education room, the swimming pool area, the music room, and a computer room.

There is a physical education room that has climbing equipment, mats, balance beams, ropes to climb, and special texture boards for children to walk on. There is also a variety of balls, hula hoops, juggling pins, and plastic bowling pins and balls.

In another area of the school, there is a swimming pool that is about 15 inches deep---a depth appropriate for children to feel safe but allow for swimming. There were no diving boards present. The tiled pool room contains water toys, tubes, kickboards, hula hoops, and balls for water play. Adjacent to the pool are locker rooms for the children to use and an office for the swimming instructor. Although the swimming instructor wore a bathing suit, the children swam in the nude because that is considered natural for young children. Children were not separated by sex for the swimming lessons. The swimming instruction was playful in nature and encouraged children to splash, jump through a hula hoop, and kick against the side of the pool.

The music room had a piano. Chairs were placed against the walls with a large open space in the middle of the music rooms. Some stuffed animals were present. Professional artwork adorned the walls.

It was reported that there was a computer room, but this room was not observed.

In addition to the interior spaces designed for children, there was an office for the Director which was furnished in typical office furnishings.

There was also a teachers' resource room that had some bookshelves with resource books and a table and chairs.

The Children

Two hundred and sixty children attend this kindergarten. They range in age from 2-7 years of age. Not all children attend kindergarten, but there is a large waiting list for this facility. Unlike the public schools of Belarus, the children do not wear uniforms in the preschool. Since it was summer, many children were attired in shorts and shirts.

The Staff

The kindergarten is staffed by twenty-five teachers/caregivers plus specialists who instruct in music, physical education, swimming, and computers. A director coordinates the staff. A medical doctor is also on staff.

INTERVIEW COMPONENT

The curriculum specialist for the region, Tatyana Bratskaya, and the director of Kindergarten No. 490, Nina Bystritskaya, described the activities and curriculum of Kindergarten No. 490. Anya Poplawskaya served as the Russian/English interpreter.

The Daily Schedule and Curriculum

When asked about the activities at the kindergarten, Director Nina Bystritskaya said: "They just live here and have the funnest time of life here."

The Director described the state program as being very strict. The state requires a morning program, a walk outside, then the day program, and the evening program. The curriculum addresses all areas of a child's development. School begins early---at 6:45 A.M.---to correspond with the workers' schedules in the enterprises and businesses. The school day begins with quiet games and conversations. However, active games are available for active children. Some children engage at work at this time.

Then comes the morning exercises. At about 8:15 A.M., they have breakfast. After this, the learning program starts.

The state program dictates a timetable for different kinds of work--which to a child seems like play. Children have lessons in mathematics, then some literature, then some language arts, then some physical training, and art. There are music lessons too. Readiness for school begins in the kindergartens, so the curriculum prepares children to learn to read and write. A walk outside follows the morning academic program. After lunch, the children nap, have a snack, and then begin the afternoon program which includes an afternoon walk. Supper is served just before dismissal. The school day lasts until 7:30 P.M. Two sets of caregivers (a set consists of a teacher plus an "upbringer"), in two six-hour workshifts, care for each group of 20 children each day.

Teaching Methods

The curriculum is based on the interests of the children. Motivating a child to want to learn is the focus of the program. A child's interests are honored as children choose whether to participate in activities or not.

The practices of the kindergartens of Belarus are based on the theories o Vygotsky and Piaget. However, the methods used to implement these theories within the classrooms are influenced by some of their own pedogologists.

There are several methods used in Belarus when teaching young children. One method used is based on the work of Shuleshko. Shuleshko says that teachers should enter the world of the child, to take on a child's perspective. Teachers must respect the child's choice regarding participation; no child should be forced into an activity. Shuleshko also recommends working with small groups of children. The teacher divides each class into small groups of 6 children; each group has a designated child leader. The teacher then assigns problem solving tasks to the groups and the children work together to seek solutions.

Another method is based on the work of Dr. Ivanova Krylova. She encourages individual interaction between the teacher and each child in

the classroom. This technique promotes self-esteem and builds confidence in each child so that each child can feel successful when they enter a group situation.

This particular kindergarten uses an unique approach to its health curriculum. It employs the use of cold water to help students remain healthy. Each day of the year, regardless of the season, a teacher and her young students go outside in their underwear and bathing suits and pour cold water over their bodies. This process is completed in a ritualistic manner, with teacher and students stretching arms out to their sides and looking skyward. Then each takes a bucket of icy cold water and pours it over each of their own heads until all water has been emptied from each bucket. This practice is based on a theory by Porfiriy Ivanov.

The people of Belarus are afflicted with the aftermath of the Chernobyl nuclear disaster. Radiation presents a major health problem in Belarus. When people believe in Ivanov's water treatment, it is considered to be the best medicine. Cures for cancer, tuberculosis, and other illnesses are attributed to the water treatment. Children participate in this method at school and it is extended as a parent participation activity in the homes.

Serving Children with Special Needs

The curriculum specialist for the region, Tatyana Bratskaya, related that in Belarus when a child has been identified as having a disability, that child is given a document that admits the child to a special education kindergarten. In the region of Gomel, there is a higher population of children who suffered from the radiation of Chernobyl, so more special education kindergartens have been established there. However, the kindergarten director, Nina Bystritskaya, said that she believes that young children with disabilities should be integrated with their typically developing peers and that they should be treated in the same way. For example, a child who has a profound vision problem is currently enrolled at Kindergarten No. 490. Children with speech and language delays are also enrolled there. Nina believes that the teachers must recognize that children who are experiencing delayed development can function and succeed in this normalized setting.

Teacher Training

In order to become a kindergarten teacher, preparation requires four or five years of higher education in a teacher education institute or university. Teachers must complete an additional course of study for continuing education every five years to remain in the teaching field. Most of the personnel who work in kindergarten are female; men in early childhood education are the exception, similar to what we see in the United States.

Teacher Compensation

Teachers in the kindergartens of Belarus are paid approximately $15 per month for working 6 days per week for 6 hours per day. Salaries are fluctuating monthly due to the current inflation and instability since the dissolution of the Soviet Union. At this time, workers in factories make more money than teachers.

Changes Since the Dissolution of the Soviet Union

Some changes have occurred since the dissolution of the Soviet Union. For one thing, there is no longer a Soviet program. Instead, there is a Belarussian state kindergarten program called pereska. Another change is that teachers' salaries fluctuate from month to month due to the current inflation in Belarus. A third, and very positive change, is that kindergartens are protected by law. These businesses cannot be abandoned or closed because the Belarussian people value their children.

DISCUSSION

There are similarities and differences between programs for young children in Belarus and in the United States. Similarities include: play-based environments that address the developmental needs of young children, indoor and outdoor activities, and programming that meets the physical needs of nourishment, exercise, and rest. Teachers in both nations are underpaid for the valuable services they provide. Programming in both countries is influenced by the work of Piaget and Vygotsky.

Differences are reflected in the stricter requirements for training of professional staff for the Belarussian kindergartens because the childcare program is also an educational program. Specialists are employed in the Belarussian kindergartens to teach art, music, swimming, and computers. While most childcare centers in the United States do not employ specialists, this is a common practice of North American elementary schools. The presence of a medical doctor on staff at the Belarussian kindergartens is another difference.

The curriculum is dictated in Belarus; teachers in the United States have much more freedom regarding curricular decisions. The Belarussian curriculum stresses school readiness skills and offers a structured art curriculum. The health curriculum of this particular kindergarten might be viewed as controversial in the United States.

While the inclusion of children with handicapping conditions is an enforced practice in the United States, this is just beginning in Belarussian kindergartens. Most children with special needs are provided services in special education kindergartens in Belarus.

The physical environments differ. The classroom environments in the United States often show more child ownership through displays of children's artwork. The walls of childcare centers in the United States are cluttered with bulletin boards, commercial posters, and print. The walls in the Belarussian kindergarten were reserved for professional artwork. Also there is a greater diversity and abundance of toys, equipment, and open access to supplies like paper, pencils, markers, paints, etc... in the United States.

The sleeprooms of the Belarussian kindergartens are much more inviting, homey, and relaxing than the typical portable cots offered in play areas to young children in the United States.

The gender identified bathrooms of the United States differ from the unisex toileting areas of the Belarussian kindergartens. The attitudes toward child nudity differ between the two nations.

While the majority of childcare facilities in the United States are

private enterprises, the governmental support for Belarussian kindergartens contributes to the quality of the programs there.

FUTURE STUDY

Since only one kindergarten was observed, it is recommended that future studies sample more than one facility to ascertain if indeed there is a uniformity among kindergartens in Belarus or if diversity is emerging in this newly independent state. Since there are special education kindergartens, it would be interesting to observe a sample of these facilities to note similarities and differences between services to typical and atypical populations.

The pedologists who were discussed are not cited in North American literature. There is a need to learn more about these educational leaders to better understand the teaching methods employed in kindergartens in Belarus.

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The personnel at Kindergarten No. 490 were gracious to allow us to visit their facility. Special thanks are extended to Tatyana Bratskaya and Nina Bystritskaya.

Gratitude is expressed to Anya Poplawskaya for providing her services. Without her help, communication would not have been possible.

Appreciation is also extended to Giorgi Poplawski who provided transportation to Kindergarten No. 490.

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HOW PARENTS SPEND THEIR TIME

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A great deal of work has been done over the past few years in researching how families of children and adults with disabilities cope with stress. Much of this work has been done using one derivation or another of the ABCX model of family stress and coping (see: McCubbin & Figley, 1983; Lillie, 1991). The essence (though not the details) of this model holds that stress is a normative part of the function of every family, whether or not that family has a child with a disability. What is important for teachers and other intervenors to understand is not the presence of a particular stressor, but the context in which families experience stressors. Outcomes are variable, depending on what resources families have when presented with stress.

In working with families of children and adults with disabling conditions, viewing the family's coping in the context of its resources is critical. For example, families with relatively high levels of stress, but correspondingly high levels of resources (money, access to needed professionals, respect of teachers and school administrators, extended family support, and so on) are likely to be able to manage their stress adequately while families with the same stressors, but fewer resources, may become overburdened.

In an earlier study (Lillie, 1991), information was presented on how North Carolina parents of children with disabilities spent their time and on how such parents viewed their levels of stress and support. I wanted to discover whether stress and support (and other demographic variables) were predictive of how mothers and fathers spent their time and how parents in the same family differed in prediction of time use and actual time use. One finding (similar to one finding of the present study) was that both mothers and fathers report that they spend about the same amount of time on similar tasks (with a few exceptions) and that their pattern of spending time with or on behalf of their children was similar. That is, there was a positive correlation between parents reports on most time use variables, indicating that they both did the same things. Exceptions were in areas such as cooking for the family, spending money, and work hours outside the home. In these areas clear gender differences were found. It was not possible, using the results of this study, to propose reasons for the gender differences.

FOCUS OF THE PRESENT STUDY

Results presented here are part of a larger study of time use among parents of children with disabilities. Questions which were addressed included:

1. How do mothers and fathers of children with disabilities compare in spending their time on a number of tasks and activities?

2. What stress, support, and demographic factors inside the home account for how parents spend their time?

Specific hypotheses are mentioned in the larger study (Lillie, Brown, & Kurth, 1994), but are not reproduced here because of the preliminary nature of this study. However, because there are some similarities between the present study and Lillie's (1991) study, some comparisons will be made between the two.

METHOD

Subjects

One hundred and fifteen (115) packets containing copies of the survey instrument were mailed to parents on their mailing list by the Arc of South Dakota. The Arc is a resource and advocacy organization for people with disabilities and their families, primarily known for working with people with mental retardation and their families. The investigators did not have access to the Arc mailing list (in order to maintain confidentiality), but did receive information about the number of addresses used. All subjects were believed to be parents of children with mental retardation or a related disabling condition, in addition to being members of or closely associated with the Arc of South Dakota. In addition, most packets were believed to be directed to married couples with children, in order to be able to compare mothers and fathers in the same family situation.

Instruments

Two instruments were administered: A short form of the Questionnaire on Resources and Stress (QRS-F) (Friedrich, Greenberg, & Crnic, 1983) and Daily, weekly, and monthly measures of time use (DWM) (Lillie, Brown, & Kurth, 1994). In addition, parents were asked to provide demographic information about themselves and their children. The QRS-F is a well-known instrument often used to measure stress and support in families of children with disabilities. The DWM was developed for this study using time use categories available from previous national studies of time use (Shelton, 1992).

Procedure

Survey packets, consisting of two copies of the survey (one for each parent), a return envelope addressed to the researcher, a postcard to be returned if the respondent(s) wished a copy of the results, a letter from the researcher explaining the study and providing directions and a letter of support from the Arc were sent. According to Dillman (1978), when asking for more than one response per household, the expected return rate falls dramatically. In this case a response of 50% would be considered excellent. In the event, responses were received from 55 addresses. Two responses were notes from potential respondents explaining that they no longer fit the criteria for subjects and consequently were not returning the surveys. Twenty-six mother-father pairs from South Dakota returned surveys, while of the balance of addresses, two came from fathers alone and the balance (twenty-four) came from mothers alone, for a total n of seventy-nine. The return rate (based on addresses) was 55 of 115, or 44.8 percent. This is a very good return considering that no reminders were sent. Many of the returns from mothers only were from widows.

Parents completed the surveys and mailed them during the later part of 1994 (primarily November and December).

Analysis

As of this writing, only preliminary analysis has been accomplished. However, we were able to summarize comparative data on time use

between mothers and fathers from intact families on the individual items (see Table 1 for the specific items) and on time use summary variables. Individual items were analyzed and grouped by Daily, Weekly or Monthly classifications. For example, Cooking was classified as a Daily task while tasks performed less frequently (such as car care and maintenance) were classified as Monthly tasks. The purpose of this was to enable respondents to quickly tally their time use and to record it quickly, using categories which might aid them in this task. Two judges independently analyzed each task for classification; differences were reconciled by face-to-face discussions between the judges. Final decisions were made by the principal investigator, but in each case the decisions of the judges were carried forward.

Time use (and selected demographic) variables were summarized and paired t-tests were performed on Daily, Weekly, and Monthly time use variables by comparing mothers and fathers (see Table 2). Individual time use variables (and summary variables) were charted and appear in Figure 1.

RESULTS

The mean age of the subjects was fairly high. While there are disadvantages to this sample (younger children are typically receiving special education services), it does give us a look at time use for older adults (most of whom have their child at home with them). This sample also shows that there are clear differentiations between mothers and fathers in terms of work hours outside and inside the home. Again, older (hence possibly more traditional) parents may be expected to show this pattern of time use.

The graphic representation (line chart) of mean hours per day, week, or month of time spent by mothers and fathers shows that, with a few exceptions, men and women spend their time similarly (other than in work hours outside the home). A number of tasks related to housework and childcare, while generally the province of mothers in this group, are also reported to be performed by fathers. Conversely, mothers in this group report that they also spend time on activities which are traditionally associated with male roles, such as outdoor repairs and car maintenance.

This finding was also evident in the earlier study mentioned (Lillie, 1991). In both studies, mothers reported spending more time on work or other activities within the home (overall) than did fathers, while fathers, as a group, reported spending almost twice as much time as mothers in paid work outside the home.

DISCUSSION AND IMPLICATIONS

It is too early to draw substantial conclusions from this data. However, it is interesting to note that both parents of children with disabilities (mothers and fathers) report some involvement with their children or with other aspects of their lives. Though certain tasks seemed to be gender-related, both genders reported that they spent at least some time performing every task.

Second, fathers and mothers report in this sample that there is a clear gender difference in terms of time spent working outside the home. This data pattern also appeared in earlier studies of time use. For example, Robinson (1985) reports on two national time use studies in 1965 and again in 1975 in which married fathers report working for pay more than 47 hours per week, while married employed mothers report working for pay between 30 and 35 hours per week (including married "housewives" would substantially lower the latter figures). Shelton (1992) also reports (apparently different) 1975 data in which married men reported working an average of 45.8 hours per week compared to 30.2 hours per week for married women. She also reports 1981 data which is very similar (men: 45 5 hour/week; women: 29.0 hours per week). The existence of this pattern (at least among married couples) is remarkably persistent, given recent changes in the roles of men and women, and needs to be carefully considered by teachers of children with disabilities and by teacher educators. Mothers cannot be assumed to have all the responsibility for child care and school-related decisions: fathers also need to be involved, and in meaningful ways, if only because their influence on their children is more pervasive than might have been earlier thought. Fathers and mothers who are content with leaving school-related decisions to mothers will need to be educated as to the importance of joint decision making in this area.

One important caution: this data is preliminary. Conclusions drawn in this paper are intended to open the way to a more thorough exploration of these issues and are to be taken with a very large grain of salt.

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Table 1

Time use tasks from survey

Daily Tasks

How many hours per day do you spend cooking meals, serving meals, & cleaning up after meals?
How many hours per day do you spend completing routine indoor cleaning activities & housework?
How many hours per day do you spend completing routine outdoor cleaning (i.e. yard work, snow removal, cutting lawn)?
How many hours per day do you spend taking care of your pet (i.e., walking, feeding)?
How many hours per day do you spend listening to music or watching television?
How many hours per day do you spend reading books, magazines, newspapers, or other reading materials?

Weekly Tasks

How many hours per week do you spend washing, ironing, & mending clothes?
How many hours per week do you spend caring for indoor & outdoor plants? Include flower & vegetable gardens.
How many hours per week do you spend completing household paperwork (i.e. bills, mail, budgeting, checkbook)?
How many hours per week do you spend shopping for food & household goods?
How many hours per week do you spend acquiring professional services?
How many hours per week do you spend participating in fine arts activities (i.e. playing a musical instrument, non-social dancing, acting, creative writing, singing, photography)?
How many hours per week do you spend participating in arts & crafts activities (i.e. knitting, sewing, painting, pottery)?
How many hours per week do you spend playing games or completing

puzzles (i.e. board games, card games)?
How many hours per week do you spend participating in sports activities?
How many hours per week do you spend participating in indoor recreation activities (i.e. pinball, pool, bowling)?
How many hours per week do you spend participating in outdoor recreation activities (i.e. hunting, fishing, boating, camping)?
How many hours per week do you spend exercising? Include jogging, walking, & biking.
How many hours per week do you spend attending church services?
How many hours per week do you spend in individual religious practice?
How many hours per week do you spend in phone conversations?
How many hours per week do you spend in conversations with household members & other people?

Monthly Tasks

How many hours per month do you spend making indoor repairs and on maintenance & home improvements?
How many hours per month do you spend on car care & maintenance?
How many hours per month do you spend on activities related to financial services?
How many hours per month do you spend on activities related to government services?
How many hours per month do you spend participating in volunteer, fraternal, political/civic, or family organizations?
How many hours per month do you spend on pleasure rides or picnics?
How many hours per month do you spend on scrapbooks & collections?
How many hours per month do you spend on sports lessons (i.e. gymnastics, karate)?
How many hours per month do you spend at religious meetings in order to organize helping others?
How many hours per month do you spend participating in religious helping?
How many hours per month do you spend in church group activities?
How many hours per month do you spend in church group meetings?
How many hours per month do you spend attending spectator sports events?
How many hours per month do you spend going to parties or social dancing?

Table 2

Demographic data, comparing mothers and fathers from intact families

	PARENTAL AGE	PAID WORKHOURS	CHILD'S AGE	NUMBER OF OTHER CHILDREN
Paired moms and dads (n=26 pairs)	55.8	33.5	25.1	2.8
All mothers (n=51)	60.5	21.1	30.3	3.0
All fathers (n=28)	57.9	45.4	25.4	2.8

Table 3

Comparison of paired mothers and fathers on time-use summary variables. In hours per day, week, or month.

	Mean (Mothers)	Mean (Fathers)	t	p
Daily tasks	10.77	7.58	4.65	< .0001
Weekly tasks	32.73	22.42	4.71	< .0001
Monthly tasks	24.00	19.73	1.15	ns

Paired t-tests
N=26 pairs df=25

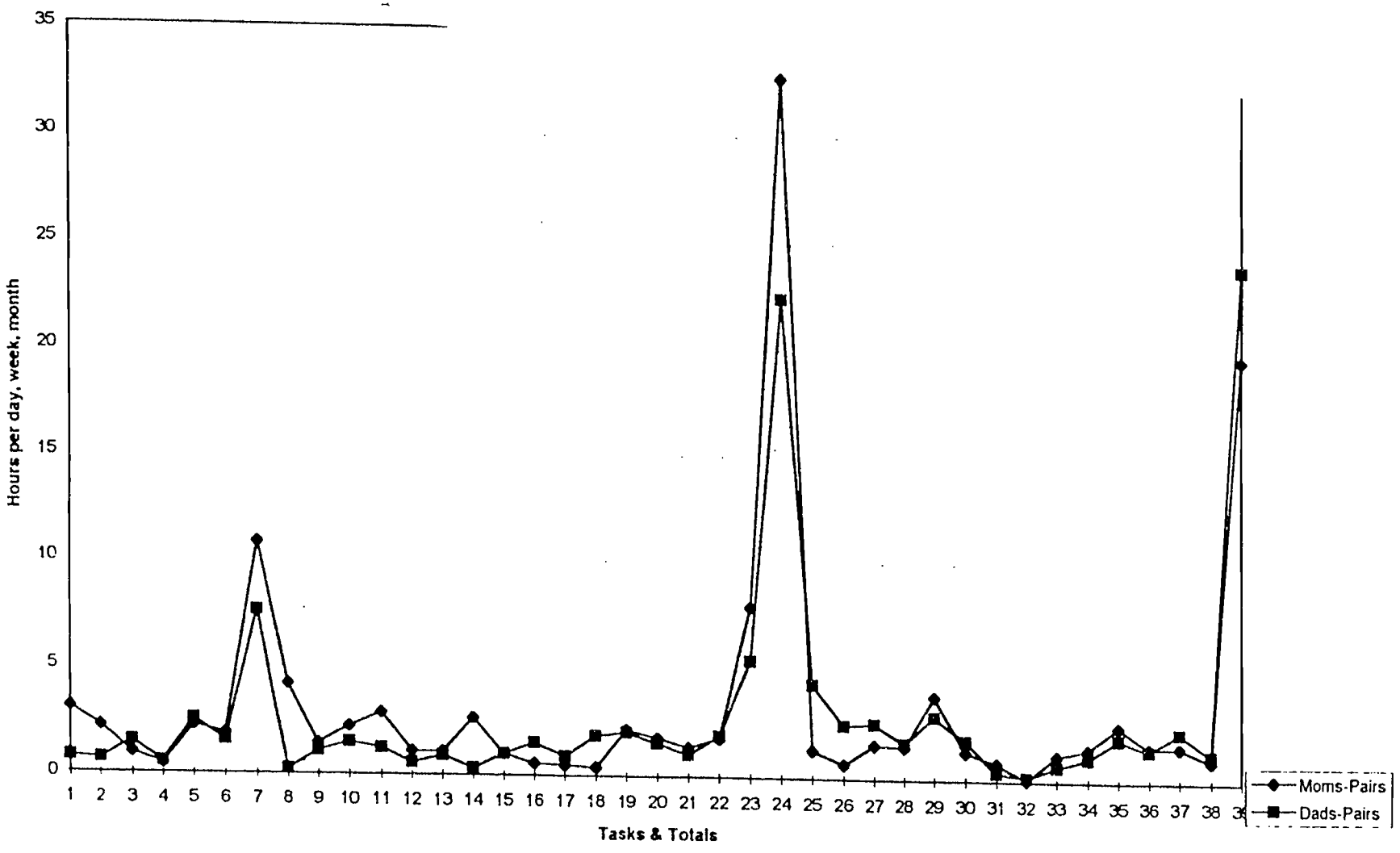

Figure 1: Line chart of time use variables and summary variables, Parent pairs, n= 52. Note: items 7, 24, and 39 represent summary variables.

OPINIONS OF PRINCIPALS TOWARD VIOLENCE IN SCHOOLS

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INTRODUCTION

The statistics are frightening. Guns kill about 25 youngsters every two days. Adolescents between the ages of 10 and 19 are killed by guns at a rate of one every three hours. A U.S. Department of Justice report (1993) stated that violent crimes perpetrated against juveniles between the ages of 12 and 17 had risen nearly 24% between 1988 and 1992. Today's youth are living in a time when violent acts are more lethal than in the past.

It is also important to note that "Statistics vary from source to source--but, according to FBI arrest figures, the public perception that more young people are in trouble with the law than ever before is statistically incorrect"(Sautter, 1995). Youth crime has fallen since the high point in the mid-1970s but the types of crimes committed are more serious and lethal.

From various national reports it can be stated that youth violence is widespread in our society (Sautter, 1995). It is not just a problem with minorities, or the poor, or those in urban areas. It crosses all gender, class, race, and residence areas. It is a problem for all Americans.

Schools across the United States have felt the impact of violence for some time. Various programs to curb violent acts in schools have been implemented. Metal detectors have been installed in schools. Police officers have been assigned to schools and to patrol them. Crisis hotlines have been established. Anti-violence curricula, conflict resolution programs, and peer mediation techniques are being introduced in schools. School personnel are searching for solutions to this national problem.

The 26th (1994) Annual Phi Delta Gallup Poll of the Public's Attitudes Toward the Public Schools presented data showing that fighting/violence/gangs was reported as the biggest problem with which the public schools must deal. "If one combines 'lack of discipline' with 'fighting/violence/gangs, 'the figure for total 'net' mentions reaches 35% in 1994, whereas it was 27% in 1993. Something appears to have happened, and it was most likely a media creation. There is no gain saying, however, that Americans live in a violent culture--four times

more violent, some experts say, than that of Western Europe" (Elam, 1994, p. 43).

Two questions were asked in the Gallup Poll that dealt with violence. One question addressed the causes for increased violence. The second one looked at how affective various measures would be in reducing violence in the public schools.

Statistics on violence appearing in newspapers daily, the Gallup Poll results, and a Kappan Special Report on violence having been published lead to the design of our search study to investigate the opinions middle and secondary level administrators have about violence in South Dakota schools. The investigators believed that those who directly work with youth would provide valuable insight into the violence issue as it relates to South Dakota.

RESEARCH PROCEDURES

A postcard questionnaire consisting of five questions and space for personal comments about youth violence was constructed by the investigators. The purpose of this study was to ascertain the opinions of middle and secondary level administrators toward youth violence in schools.

The population was the total number of middle and secondary level administrators in South Dakota public school districts. One hundred questionnaires were mailed to randomly selected middle level administrators and one hundred to randomly selected secondary level administrators in October, 1994. Eighty percent of the secondary level administrators and 79% of the middle level administrators returned the questionnaires for analysis.

The administrators responded to five basic questions: (1) On a scale of 1 to 5, indicate your opinion about the problem of violence among your students, (2) What types of violence have you had in your school during the past five years?, (3) Has your faculty received training in preventing youth violence within and outside of school?, (4) In your opinion, what are the causes for the increased violence in our public schools?, and (5) Does

your school offer a violence prevention program for students? A sixth question asked the administrators to make comments about youth violence in their schools. Each questionnaire was coded so the investigators could classify it by the level of administration.

FINDINGS

The first survey question asked the administrators to indicate their opinion about the problem of violence among their students. Twenty-eight percent of the total responses indicated that violence was not a problem among their students while 45 percent thought it was an insignificant problem. Seventeen percent responded there was a slight problem of violence among their students. Responses from all categories are shown in Table 1.

The second survey question asked what types of violence had occurred in the various schools during the past five years. The most frequent type of violence actively reported by middle level and secondary school principals was fighting. Knives in school was the second most frequent type of violence. The use of guns in schools was the least frequent type of violence reported in South Dakota middle and secondary schools. Table 2 reflects responses of types of violence reported by administrative category.

The third survey question asked if the faculty of the schools have received training in preventing youth violence. Eighty-nine percent of the total principals stated "no" to the question. Ten percent of the administrators reported that their faculties have received training in preventing youth violence. Table 3 reflects responses to the question.

The fourth survey question asked the administrators to identify the causes for the increased violence in the public schools. The breakdown of the family was identified as the major cause of increased violence. Other causes in rank order are media violence, desensitization toward violence, drugs/alcohol, and schools lack of authority to discipline. Causes that generally dealt with schools, curriculum and staff/personnel were ranked at the bottom of being causes of violence. Table 4 indicates responses on this question by level of administration.

The fifth survey question asked the administrators to identify if their schools offered a violence prevention program for students. Eighty-five percent of the administrators indicated that they do not offer a violence prevention program for students. Eight percent of the schools do offer a program. Table 5 presents responses on this question according to administration level.

The sixth question asked the school administrators to make comments about violence in schools. Ninety-five percent of the returned questionnaires had comments about school violence.

COMMENTS BY ADMINISTRATORS

1. We are lucky and have not yet had a problem with large scale violence in our schools. However, more fights or scuffles are now occurring.

2. Violence is still very minimal but we are starting to see an increase in drug and alcohol use among our high school students.

3. I see the increase use of alcohol as the greatest concern for small schools.

4. Students don't have the guidance they need from home. Many of them are raising themselves without parent guidance.

5. Most of our students are born and raised in our rural community and do not have outside influences of larger schools or schools closer to larger communities.

6. Students need to know how to practice conflict resolution techniques.

7. Jack knives are common to agricultural area. This is not a real threat in our area.

8. Schools are given the authority to discipline but receive very little support from home. By and large, parents tend to believe and support

their children over the word and action of teachers and administrators.

9. A lot of teen violence is outside of our schools on weekends and evenings. Parties such as wedding and street dances where alcohol is readily available are causing problems.

10. Family breakdown and lax court system are contributing to the violence problem.

11. We are a small school in a rural area. We have little violence. Our major problem is drinking of alcohol on weekends.

12. Local law enforcement appears to avoid youth activities and situations where youth gather. There appears to be no attempt at law officers in building a positive rapport with youth.

13. Although we have not had serious problems with violence, I do feel that fighting within our schools and within other schools is increasing.

14. I do believe there is a lot of teen violence outside of schools. Weekends and evenings are being used for alcohol parties, with many resulting in fights between students from different schools.

In synthesizing the multitude of comments, it appears that there is not a serious problem of violence in South Dakota schools. However, a large number of respondents were concerned about the use of alcohol and an apparent increase of fighting among students outside of the school environment. Administrators were also concerned about the additional responsibility being placed upon our schools with the breakdown of the family unit in the child rearing role.

CONCLUSIONS

The comments authored by the responding administrators and the data collected lead us to conclude that violence among students in South Dakota middle level and secondary schools is not a problem to a slight

problem at most. Many administrators echoed their concerns over the use of alcohol among students and in the increase of fighting outside of the school environment. The most serious type of violence reported by administrators was fighting among students while it appears to be minimal at this time but on the increase.

The administrators reported that 89 percent of the faculty have not received training in preventing youth violence and 85 1/2 percent of the schools do not offer a violence prevention program for students.

The causes for violence in public schools are basically factors that are outside of the school environment. The data reported and comments made show that administrators believe the breakdown in the family unit is a major cause of violence. Other causes such as media violence, desensitization toward violence, and use of drugs/alcohol are also important causes of student violence. The data and comments also show that schools do not have the authority to discipline and parents are not supporting the schools in away that administrators wish they would. Administrators believe that issues like curriculum, support programs, and staff/personnel are not causes of violence among youth.

Many concerns were iterated by the administrators concerning the youth violence issue. The increased use of alcohol among youth was mentioned by a large number of administrators. The youth appear to be going to numerous weekend parties, and wedding and/or street dances where alcohol is common place. Law enforcement officers need to be monitoring youth more.

It appears that South Dakota has youth violence problems but on a lesser scale than more populated states. Comment after comment stated that in small rural communities, schools were violent free and that the most serious problem was an infrequent fight. However, there were comments indicating that with the changing times, it will only be a matter of time when violence is a greater problem than today.

RECOMMENDATIONS

Based on the data collected and comments made, the following

recommendations are made.

1. Faculty and administrators should receiving training in preventing youth violence.

2. Schools should consider implementing a violence prevention program for students.

3. Greater emphasis must be placed on educating students about the use of alcohol, its affects on individuals, and the legal consequences of under age consumption.

4. Schools, law enforcement officials, the court system, parents, and local communities must team together to provide an environment free from violence in which youth can be raised.

Even though violence has not become the serious problem in South Dakota as in states with larger cities and populations, it makes sense to the investigators to initiate programs and campaigns for the prevention of youth violence. It is the responsibility of every citizen in society to practice nonviolent actions and to learn how to solve disputes through acceptable nonviolent procedures.

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Table 1

Problem of Violence Among Students

Category	Middle Level	Secondary Level	Total
Not a Problem	23%	33%	28%
Insignificant Problem	46%	44%	45%
Slight Problem	22%	12%	17%
Serious Problem	8%	6%	7%
Very Serious Problem	1%	1%	1%
No Response	0%	4%	2%

Table 2

Types of Violence in Schools During Past Five Years

Category	Middle Level	Secondary Level	Total
Fighting	87%	83%	85%
Guns in School	3%	8%	5.5%
Knives in School	27%	20%	23.5%
Gang Activity	14%	4%	9%
Racially Motivated	11%	5%	8%
None	8%	3%	5.5%
No Response	1%	6%	3.5%

Figures add to more than 100% because of multiple answers.

Table 3

Faculty Received Training in Preventing Youth Violence

Category	Middle	Secondary Level	Total Level
Yes	9%	11%	10%
No	90%	88%	89%
No Response	1%	1%	1%

Table 4

Causes for Violence in Public Schools

Category	Middle Level	Secondary Level	Total
Drugs/Alcohol	43%	51%	47%
Gangs	25%	35%	30%
Schools Don't Discipline	43%	49%	46%
Curriculum Out of Touch	6%	8%	7%
Cutbacks in Support Programs	5%	14%	9.5%
Media Violence	58%	65%	61.5%
Breakdown of Family	89%	96%	92.5%
Availability of Weapons	13%	22%	17.5%
Inability of Staff to Resolve Conflicts	5%	15%	10%
Shortage of Personnel	11%	9%	10%
Desensitization Toward	50%	58%	54%
No Response	3%	0%	1.5%

Figures add to more than 100% because of multiple answers.

Table 5
School Offers a Violence Prevention Program for Students

Category	Middle Level	Secondary Level	Total
Yes	6%	10%	8%
No	89%	82%	85.5%
No Response	5%	8%	6.5%

CONCEPTUAL KNOWLEDGE IN PHYSICAL SCIENCE OF UNIVERSITY STUDENTS IN AN ELEMENTARY EDUCATION PRESERVICE PROGRAM

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The author has been assigned to teach a university class, Physical Science for Elementary School Teachers, for the past fifteen years. A point of frustration is that the students, who are preparing to become elementary teachers, typically express a dislike, and yes, a phobia for science, especially the physical sciences. While there have been noticeable numbers of cases where there has been a turn around in the negative attitude and fears toward physical science due to the hands-on/inquiry nature of the course, the author would like to see the numbers higher. It would seem that in this era of technology and science, persons going into the teaching profession at the elementary school level would be keenly interested in developing a high entry level of proficiency in the physical sciences.

The students in the Physical Science for Elementary School Teachers course almost unanimously report to the author that their K-12 teachers turned them off from science by their teaching methodology. Students typically report that science was presented to them as a dull bunch of facts to memorized to be reproduced on a test. Seldom have they had time to be engaged in thinking in science.

One of the reasons that the students are apprehensive about physical science could be that they have not mastered the basic concepts of physical science. In the day to day teaching of the physical science course, it becomes quite evident that such is the case. Although the students complain about the mathematics involved in physical science, it appears to the author that the problem is more in lacking basic constructs such as volume, density, mass, and the like. The author never ceases to be amazed at the number of students who do not equate volume with the displacement of a body.

It is with the preceding backdrop that the author became interested in the assessment of the student conceptual level of various basic concepts. In order to establish an incipient knowledge base, an assessment of the concept of pressure difference at the beginning of a semester was initiated to establish existing conceptual knowledge coming into the class. Such would reflect prior teaching in the K-12 schools. The second assessment took place in respect to water rising in a test tube due to the dissolving of ammonia gas into cold water. This assessment would

reflect conceptual assimilation as a result of in class learning in respect to an inquiry process followed by instructor review. The third assessment took place as an overview of conceptual attainment in respect to a lecture/discussion session followed by review.

During the first day of class of the spring semester, 1995, 42 Students from a university Physical Science for Elementary School Teachers class, Arranged in Groups of Three, were presented with three "authentic tasks." The students were informed that they were to, collectively in their groups, observe a demonstration by the professor of record, discuss their observations, and to explain in written detail the casual steps involved in the phenomena they observed.

EGG-IN-THE-BOTTLE DEMONSTRATION

The first demonstration was the classic egg-in the bottle activity in which the professor dropped a piece of burning paper into a milk bottle and quickly placed a pealed hard-boiled egg over the opening which in turn vibrated and then, as the flame extinguished, was forcefully driven to the bottom of the bottle.

As the burning paper generated a considerable amount of heat, the air inside the bottle, which consists of a mixture of gases, expanded considerably, forcing some of the gas out of the bottle as manifest by the vibrating egg. The burning paper quickly utilized the oxygen inside the bottle as well as generated carbon dioxide and perhaps some carbon monoxide, extinguishing the flame. The remaining air inside the bottle quickly cooled and contracted with the resultant partial vacuum, with much less pressure than the atmospheric pressure outside of the bottle. The pliant hard-boiled egg formed a seal over the mouth of the bottle and was violently squeezed into the bottle with an accompanying loud thump.

The author and a graduate assistant evaluated and categorized the responses. Of the 42 students, only seven percent gave appropriate responses and 93 percent registered inappropriate responses. Based on these results, it would appear that an alarming number of the students enrolling in the class have a very low conceptual level in physical science in respect to the phenomena assessed. It is of special concern when one

considers that the constituency of the class was 69 percent juniors, 23 percent seniors, and 8 percent sophomores. Most of these students will have the potential to be teaching young children within the next year!

APPROPRIATE RESPONSES

The burning paper expands and pushes out the air, which causes the egg to bounce. When air that is left inside the bottle cools, the inside pressure drops. The outside pressure pushes the egg into the bottle

The flaming paper towel used up most of the oxygen in the jar thus lowering pressure and the greater outside pressure forced the egg into the jar. (Doesn't account for vibrating egg)

I learned that the burning paper pushed the oxygen out of the jar. This caused the vibration of the egg. The air inside the bottle cooled and the pressure dropped, which in return pushed the egg into the bottle. (Student implies something pushed the egg)

The inappropriate responses appeared to present themselves into the following seven categories:

Egg Sucked Into The Bottle: Extraneous
Egg Sucked Into The Bottle: Egg Pulled by the Air Pressure
Egg Sucked Into The Bottle: Heat Trying to Acquire Oxygen
Egg Sucked Into The Bottle: Greater Pressure Inside the Bottle
Egg Sucked Into The Bottle: Bottle Gasping for Oxygen
Egg Sucked Into The Bottle: Flame Needed Oxygen
Egg Sucked Into The Bottle: Enigmatic

The first category was classified as "extraneous" as there did not appear to be any explanation as to what caused the pressure outside of the bottle when than pressure inside the bottle was reduced and in the second instance what was "sucking" the egg into the bottle. The "enigmatic" category was so labeled as the explanation "due to a vacuum" is presented as a self-evident explanation, clear to all.

The verbatim comments of the various groups are as follows:

EGG SUCKED INTO THE BOTTLE: EXTRANEOUS

The egg began to "bounce" and was "sucked" into bottle. The fire inside the bottle used up the air inside the bottle resulting in less pressure inside the bottle than outside the bottle. The egg wasn't strong enough to be a barrier between high and low pressure so it was drawn into the area of low pressure (the bottle).

The egg changed shape, becoming thinner and longer, then was sucked into the bottle.

EGG SUCKED INTO THE BOTTLE: EGG PULLED BY THE AIR PRESSURE

The egg was sucked into the bottle because the air pressure inside the bottle was high so it pulled on the egg

EGG SUCKED INTO THE BOTTLE: HEAT TRYING TO ACQUIRE OXYGEN

The fire burned out because of the lack of oxygen since the egg was blocking outside oxygen from entering the jar. The heat from the fire sucked the egg inside the jar because it was trying to get outside oxygen.

EGG SUCKED INTO THE BOTTLE: GREATER PRESSURE INSIDE THE BOTTLE

The pressure greater inside so the egg was sucked into jug.

EGG SUCKED INTO THE BOTTLE: BOTTLE GASPING FOR OXYGEN

We have concluded that when the fire went out the oxygen was depleted. Therefore the bottle was in a sense gasping for oxygen, thus sucking the egg into the bottle.

EGG SUCKED INTO THE BOTTLE: FLAME NEEDED OXYGEN

We did have the same hypotheses. The flame needed oxygen so bad that after it had used all the oxygen in the bottle it sucked the egg into the milk bottle to get more oxygen.

EGG SUCKED INTO THE BOTTLE: ENIGMATIC

It was like a vacuum effect.

We feel the egg was sucked into the bottle because the warm air molecules contracted reducing the air pressure inside the bottle causing a vacuum and sucking in the egg to equalize the pressure.

The difference in pressure caused a vacuum effect, sucking the egg into the jar. The egg was sucked into an area with less pressure (the jar)

The egg bounced a second as the fire in the jar burns the oxygen inside - pressurizing the jar. The vacuum pulls on the egg bouncing it to let in oxygen - then sucks it in to relieve the pressure.

Ammonia Gas and Water Demonstration

A second demonstration was presented to the students in the form of a question on a written assessment. The problem was presented as inverting a test tube filled with ammonia gas into a beaker, three-fourths filled with cold water. After observing the test tube for a period of time, the water rose inside the test tube almost to the top. The student groups them were asked to explain why the water rose in the test tube. This question was presented to the students after they had actually collecting their own test tube of ammonia gas by heating aqueous ammonia and observing the inverted test tube of ammonia gas in a beaker of water. The observed phenomena was discussed and explained by the professor of record and reviewed by a graduate student. Of the group of 35 students, 66% gave an inappropriate answer and only 34% Appropriate answer gave an appropriate answer.

A sample of verbatim responses were as follows:

The gas contained in the ammonia, forced the water up into the test tube, causing it to take up space

Because the gas had pressure, the ammonia causes the water to rise, the tube fills with water causes it to rise, also, it like when I jump into a

pool, the water rises, because how much you weigh.

The water wants to dissolve the Ammonia so when you put the test tube in the water the water and ammonia react and as the water climbs up the test tube the remaining ammonia pulls the water so that it is dissolved.

Air Bubble Demonstration

A third demonstration was, as in the second case, given as a problem on a written assessment. In this case the question was given after studying a unit on solubility and time in class was devoted to experimentation with the solubility of solids and a lecture discussion on the solubility of gases. Again, a review session was conducted by a graduate assistant just prior to administration of the written assessment.

The question was posed in the form that "You are given a pyrex container of cold water just drawn from the water tap. After the water has set at room temperature for a period of time, one notices bubbles forming in the water in the inside of the container. Please explain from where the bubbles came and what caused them to form.

Of the class total of 35 students, only 29% gave an appropriate answer and 71% gave an inappropriate answer. A sampling of representative responses are as follows:

The bubbles consist of water + air they come from the water being so cold & then being in a pyrex bottle at room temperature because this causes some heat which makes they water bubble.

Bubbles that have formed on the sides of the kettle are reactions that have taken place. Minerals are in our water supply & when they hit oxygen they begin to evaporate, forming the little bubbles.

The bubbles are particles of hydrogen adams stuck together with spaces of air in between them which is oxygen. These bubbles are formed because the air gets trapped in these spaces when it is poured into the

kettle.

The bubble consist of O2 and come from the water starting to distil from the air.

A SYNOPSIS

From the data examined, it appears that students entering the Physical Science for Elementary School Teachers have a very low conceptual level in the areas examined. The highest conceptual level exhibited was through the process of teaching by inquiry followed by review. Even the results using this approach were disappointing, with slightly over one third of the students giving inappropriate responses. For the two phenomena examined, the inquiry approach appeared more effective than the lecture discussion approach when measuring conceptual understanding. However, one is advised that the two phenomena examined may have been variables, and further, more intensive testing would necessarily need consideration.

Indications on the basis of the phenomena tested are that the enrollees in the Physical Science for Elementary School Teachers are not developing a healthy conceptual level in the physical sciences during their K-12 instruction, as written assessment of their physical science exposure indicates physical science classes at the university level a rarity. Based upon the assessment of the egg-in-the-bottle demonstration, serious misconceptions exist. Of concern is the number of responses which hint at an animism overview and which ascribe anthropomorphic interpretations to inanimate objects. The responses in general do not imply a causal relationship in observed phenomena.

The observed responses reflect quite heavily on the prior schooling of the students. It does not appear that they are accustomed to thought provoking, reflective types of instruction involving problem solving and inference based on the observed data. The emphasis appears to be on assimilation of a large volume of knowledge-based information, rather that the "less is more" of interrelated data as recommended in Science For All Americans (Rutherford & Ahlgren, 1990).

A considerable amount of data augurs for the inquiry/ problem-solving approach to teaching science. James A. Shymansky, et al. (1983) conducted a meta-analysis of inquiry science teaching through the synthesis of the results of 105 experimental studies invoiving over 45,000 students and 27 science curricula based upon the inquiry/problem-solving approach to teaching science. Not only did the inquiry/problem-solving taught students outperform their conventionally taught counterparts in the science areas, but they outperformed them in general achievement, analytical skills, process skills, reading, mathematics, social studies, and communication.

The question is often broached by K-12 personnel as to the nature of knowledge expected in science by university educators. The answer from the author's perspective is a basic conceptually knowledge of physical science as well as individuals with a positive attitude toward physical science. The author would love to see the students enrolling in the physical science course with a passion for learning and an insatiable desire for physical science concepts to inspire their students with an interest in science from which they themselves were somehow deprived.

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THE PROFESSIONAL READING HABITS OF ELEMENTARY SCHOOL PRINCIPALS AND TEACHERS

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Principals and teachers and teachers are faced with the difficult task of keeping up with several academic areas of study. Professional journals can provide principals and teachers with up to date coverage of expanding knowledge bases in various content areas. Current trends, teaching methodologies, and the latest research findings are regular features of many of the leading journals in education. Discussion of these issues can range from practical applications to the latest theoretical discourse on learning. Regular reading of professional journals can provide principals and teachers with the framework necessary to assist them in making decisions as to how to assess and direct the on going changes within their programs. Questions about the professional reading habits of principals and teachers, however, remain largely unanswered.

PURPOSE

The purpose of this study was to determine the reading habits of elementary school principals and teachers regarding selected professional journals. In order to do this we developed a survey instrument (appendix 1) which listed twenty - one professional journals designed to represent several different academic areas.

PARTICIPANTS

A stratified random sample of 100 principals and 100 elementary level teachers were surveyed to gather data about their professional reading habits. The population used for this study was all the elementary school principals and teachers in the state of South Dakota. Seventy percent of the principals surveyed returned the instrument for analysis. Forty-two of the principals were male and twenty-eight were female. Nine had spent from 10 to 14 years; seventeen had spent from 20 to 24 years; fifteen had spent from 25 to 29; and fifteen had spent 30 years or more in the profession. Fifty-two of the principals had earned the Master's Degree. Eighteen principals had earned the Specialist's Degree. School sizes for which the principals were responsible were reported in the survey to range from 51 students to 600 students.

Fifty-four percent of the elementary school teachers returned the survey for analysis. Forty-eight of the teachers responding were females

and six were males. Seventeen of the teachers had spent nine or fewer years; nine had spent from 10 to 14 years; thirteen had spent from 15 to 19 years; eight had spent from 20 to 24 years; five had spent from 25 to 29 years; and two had spent more than 30 years teaching. Forty-three of the elementary teachers had earned a Bachelor's Degree and eleven had earned the Master's Degree. School sizes in which the teachers taught ranged form 50 students to 600 students.

FINDINGS

When responding to the first question of the survey, of the possible choices, principals indicated that the top five most frequently read journals were: (1) Principal, (2) Educational Leadership, (3) Phi Delta Kappan, (4) The Reading Teacher, and (5) Mailbox. The top five occasionally read journals were: (1) Instructor, (2) Teaching Pre K-8, (3) The Reading Teacher, (4) Learning, and (5) Education (tied) with Phi Delta Kappan.

The elementary school teachers reported a slightly different top five regularly read list and a similar list for journals occasionally read and for journals not read. Their choices for the frequently read journals were: (1) Mailbox, (2) The Reading Teacher, (3) Instructor, (4) Learning, and (5) Teaching Pre K-8. Occasionally read journals were: (1) Teaching Pre K-8, (2) Instructor, (3) Mailbox, (4) Learning, and (5) The Reading Teacher. Both the frequently read list and the occasionally read lists are identical for elementary school teachers.

The top five journals which were not read by the principals were: (1) Social Education, (2) The Social Studies Teacher, (3) Social Studies and the Young Learner, (4) School Science and Mathematics, and (5) Reading Improvement (tied) with Young Children and with Science and Children. The top five journals not read by teachers was similar to the list for the principals. The teachers top five choices for least read journals were: (1) Social Education, (2) Principal, (3) The Social Studies Teacher, (4) Social Studies and the Young Learner, and (5) Reading Improvement. These results were determined by examining the percentage of responses which were coded as do not read, occasionally read, or regularly read (See table 1 and table 2 below).

In responding to the second question on the survey, the principals indicated that the journals they deemed most useful in elementary teaching were: (1) Principal, (2) Educational Leadership, and (3) Instructor (tied with) Phi Delta Kappan. The Teachers identified the following journals as most useful for elementary teaching: (1) Mailbox, (2) Instructor, (3) Teaching Pre K-8 (tied with) The Reading Teacher.

With regard to professional libraries, the elementary principals indicated that in 83 percent of the cases their schools had a library which received materials that were intended to help them grow professionally. The average number of journals received for professional development was six. The elementary teachers reported that in 66 percent of the cases their schools had a library which contained materials to help them develop professionally. They further stated that an average number of professional journals received was four.

CONCLUSIONS

The data seem to support the notion that subject specific journals are not being read as much by principals and teachers as are general coverage journals and administrative journals. The Reading Teacher was the only subject area journal widely read by principals and teachers. The majority of schools in the survey supported professional growth through maintaining some sort of professional library in which 4 to 6 professional journals could be accessed. Based on this information, the following statements are valid.

1. When considering the top five journals in each category, there seems to be strong agreement between principals and teachers.

2. Subject specific journals are not being read as much as general coverage journals.

3. Teachers and principals do not agree on which journals are most useful for teachers in the elementary school.

4. The majority of schools in the survey supported professional growth through maintaining some sort of professional library

in which between 4 and 6 professional journals could be accessed.

5. Principals are more likely to subscribe to journals than are teachers.

RECOMMENDATIONS

The following list of recommendations are based on the data just reviewed and are intended to support journal reading for professional development.

1. To enhance awareness of different professional journals, teacher educators and publishers should do more to share professional journals with principals and teachers.

2. Principals and teachers should discuss which journals are important to them in order to select the best journals for professional libraries.

3. Several of the most widely read journals do not contain primary sources of research. Principals and teachers should be encouraged to find and read original research findings.

4. Editors of journals should regularly survey and report the demographic characteristics of their readership.

Table 1

The Reading Habits of Elementary Principals

Meanings of codes:
DNR = Do Not Read
OR = Occasionally Read
RR = Read Regularly

	Percent reported:	DNR	OR	RR
1.	Social Education	99	1	0
2.	The Social Studies Teacher	94	6	0
3.	Social Studies and the Young Learner	91	7	1
4.	Instructor	33	53	14
5.	Teaching Pre K-8	43	43	14
6.	Education	49	33	19
7.	Phi Delta Kappan	20	33	47
8.	Language Arts	71	26	3
9.	The Reading Teacher	34	37	29
10.	The Journal of Reading	69	27	4
11.	Reading Improvement	84	9	7
12.	Principal	19	13	69
13.	Educational Leadership	16	23	61
14.	Young Children	84	10	6
15.	Learning	56	35	9
16.	Early Years	80	17	3
17.	Science and Children	84	13	3
18.	School Science and Mathematics	87	10	3
19.	The Arithmetic Teacher	56	30	14
20.	Exceptional Children	65	27	7
21.	Mailbox	48	29	23

Table 2

The Reading Habits of Elementary School Teachers

Meanings of codes:
DNR = Do Not Read
OR = Occasionally Read
RR = Read Regularly

		DNR	OR	RR
1.	Social Education	98	0	2
2.	The Social Studies Teacher	96	2	2
3.	Social Studies and the Young Learner	94	4	2
4.	Instructor	44	35	21
5.	Teaching Pre K-8	48	37	15
6.	Education	78	11	11
7.	Phi Delta Kappan	87	6	8
8.	Language Arts	79	13	8
9.	The Reading Teacher	55	24	21
10.	The Journal of Reading	83	11	6
11.	Reading Improvement	93	4	3
12.	Principal	98	2	0
13.	Educational Leadership	83	9	8
14.	Young Children	91	6	4
15.	Learning	57	26	17
16.	Early Years	74	22	4
17.	Science and Children	89	11	0
18.	School Science and Mathematics	83	9	8
19.	The Arithmetic Teacher	67	20	13
20.	Exceptional Children	81	8	11
21.	Mailbox	20	33	46

Appendix 1

Survey Instrument Example:

1. Listed below are some professional journals that are published for elementary school educators. Please circle the number next to each journal according to the following response code.

   1 I have never heard of this journal
   2 I am slightly familiar with this journal, but do not recall reading it
   3 I once used this journal some, but no longer read it
   4 I do not subscribe to this journal, but do read it occasionally
   5 I do not subscribe to this journal, but do read it regularly
   6 I subscribe to this journal, but seldom read it.
   7 I subscribe to this journal and read it regularly.

Journals:

1.	Social Education	1 2 3 4 5 6 7
2.	The Social Studies Teacher	1 2 3 4 5 6 7
3.	Social Studies and the Young Learner	1 2 3 4 5 6 7
4.	Instructor	1 2 3 4 5 6 7
5.	Teaching Pre K-8	1 2 3 4 5 6 7
6.	Education	1 2 3 4 5 6 7
7.	Phi Delta Kappan	1 2 3 4 5 6 7
8.	Language Arts	1 2 3 4 5 6 7
9.	The Reading Teacher	1 2 3 4 5 6 7
10.	The Journal of Reading	1 2 3 4 5 6 7
11.	Reading Improvement	1 2 3 4 5 6 7
12.	Principal	1 2 3 4 5 6 7
13.	Educational Leadership	1 2 3 4 5 6 7
14.	Young Children	1 2 3 4 5 6 7
15.	Learning	1 2 3 4 5 6 7
16.	Early Years	1 2 3 4 5 6 7
17.	Science and Children	1 2 3 4 5 6 7
18.	School Science and Mathematics	1 2 3 4 5 6 7
19.	The Arithmetic Teacher	1 2 3 4 5 6 7

20.	Exceptional Children	1 2 3 4 5 6 7
21.	Mailbox	1 2 3 4 5 6 7

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2. From the above list, write the names of three journals that you deem most useful for teaching in the elementary school. Place the names in priority order.

3. Does your elementary school have a professional library? Yes No

   If you answered yes, approximately how many professional journals does it receive?

4. How many elementary students are in your school?

5. What is your highest earned degree? Bachelor's Degree
   Master's Degree Specialist's Degree Doctorate Degree

6. Male__ Female__

7. What are the number of years you have been in education?

8. Comments:

PICTURE BOOKS:
THEY'RE NOT JUST FOR KIDS ANYMORE

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Confucius said that a picture is worth a thousand words. It really sounds like what most children say when asked by an adult what makes a book special. Most children will answer, "The pictures." When looking at the picture books being published today they seem appropriate and exciting for anyone from 1 to 100 years old. Today's authors and illustrators of picture books are writing and illustrating books in such a way that everyone is able to enjoy them.

A picture book is defined as a book in which the illustrations are as important as the text or written story (Harris & Hodges, 1981). When an educator decides to use picture books in the classroom, she must consider the value of using the book. According to Lynch-Brown and Tomlinson (1993) the value of picture books include the following: 1) Hearing good picture books read aloud regularly can help children learn to read and value reading; 2) Sharing picture books with children fosters language development; 3) Picture books can foster in children appreciation of art; and 4) Visual clues enable nonreaders and beginning readers to enjoy pictures by themselves.

When using this genre an educator must consider how the book will be received by the students. Jalongo (1988) offers the following suggestions for selecting a picture book:

Step 1	Quickly look over the book to get a feel for the tone and approach.
Step 2	Read just the text, mentally blocking out the art.
Step 3	Read the story carefully while focusing on the harmony of the words and pictures, backtracking and pausing whenever you feel like it.
Step 4	Carefully look at the other details such as book design, paper type, endpapers, dedications, etc.

When thinking about the illustrations, one should consider their effect, quality, and continuity.

It is important to examine what can be learned from the picture book as a literary work when considering whether the book will be appropriate for use in the classroom and to the subject matter to be taught. Kiefer

(1985) states that students should learn to appreciate excellence in writing and illustrations represented in the book. Students can also learn to interpret and evaluate literature in its many different forms (Roser and Martinez, 1985). Research by Solsken (1985) states that students learn to communicate more effectively by incorporating the content, vocabulary, and linguistic complexity found in literature. Learners will broaden their perspective in viewing the different cultures and individuals in less stereotypic ways (Sims, 1982). Finally, students need to select books that suit their interests (Helper & Hickman, 1982).

As an educator selects picture books to use in the classroom he/she should always consider award winning books. For picture books the Caldecott Award is the most prestigious and well-known. This award has been given since 1938 on an annual basis to the United States artist, who has created the most distinguished children's picture book published during the preceding year. The award is granted for artistic quality--line, color, shape, texture, and medium. The Gold Medal is awarded for the best book in the field and Silver Medals for the runner-ups (Immroth, 1990).

Choosing the right book for a particular content area and age level can be time-consuming and frustrating without some guidance. There are some books to help in the selection of the proper book for the occasion. They are called appropriately selection aids. One of the best is A to Zoo: Subject Access to Children's Picture Books by Carloyn W. Lima and John A. Lima. It is the most comprehensive guide for picture books (Lima, 1993). This selection aid has a subject guide, author index, illustrator index, title index and complete bibliographic information: author, title, illustrator, publisher, date of publication, miscellaneous notes, ISBN number and subjects. Other selection aids contain other kinds of books and are not exclusively devoted to picture books. Two of the most commonly used are The Children's Catalog and The Horn Book Guide.

Picture books' universal appeal (Neal & Moore, 1991) make them a good resource for use in the content areas at all grade levels. Neal and Moore (1991) give many good reasons for using picture books at the secondary level. Some of the best picture books have been published in the last ten to fifteen years and students of high school age may not have had

the opportunity to see and read them. Many issues raised in more recent picture books require a maturity level of understanding and background that young children do not possess.

Picture books fit into many content area teaching strategies because of their short form. For example, in the area of physical education, the teacher can read part of book to illustrate a movement. Kane (1994) notes that success in learning a new movement depends in part on the students' abilities to create a image of the movement in their minds. A picture book's illustrations and story can help create this image.

Social Studies offers many opportunities for the use of literature in the form of picture books. In geography, Sisson (1990) suggests that students read books with settings across the United States to explore different regions of the country. Teachers can use the characters, plot, settings, themes and relationships in selected works of children's fiction to develop activities that promote citizenship skills according to McGowan (1987). Children build citizenship skills in order to function productively in American society, and picture books can provide pictures about the ways in which people live or lived in different times in America. Peggy Sharp (1984) suggests other issues addressed in picture books that can be included in the area of social studies are aging, other cultures and countries, or ancient civilizations.

Of course, language arts class offers many opportunities for the use of picture books. Sokoloski and Dreher (1985) maintain that picture books are quite valuable in developing literary analysis skills, because of their quality and manageable length. Use them to help students identify development of character, and mood. Writing opportunities include patterned writing, writing stories for wordless picture books, vocabulary development and word games.

Picture books in art classes are a rich teaching resource for promoting students understanding of artistic elements and art history (Neal, 1991 and Sharp, 1984). Most art styles, techniques and mediums are represented in picture books. Some of the styles found in these authors' picture books are collage (Ehlert and Carle), photography (Freedman and Anderson), cartoons (Seuss), and expressionism (Yashima and Shulevitz).

Picture books also contain a wide range of mediums, such as collage, embroidery, acrylic, pencil, ink, watercolor, oil, and silkscreen.

There are some delightful books about how music is produced, background of famous pieces of music, music history and biography for use in music classes.

There are also many picture books that deal with basic mathematical concepts: counting, estimation, substraction,and addition just to mention a few. The book Thirteen Moons on Turtle's Back deals Native Americans count the days and months of the year.

Topics such as environmental awareness, dinosaurs, how machines work, the lives of insects and animals, and weather are only a few of those found in picture books for the science classroom (McMath, 1993). The journal Science and Children provides a yearly list of trade books to use in the classroom.

We hope the suggested teaching strategies and picture book bibliography will ·ark your interest in using the wealth of picture books available today.

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EXPLORING MODES OF THINKING:
A STUDY OF HOW STUDENT TEACHERS REFLECT ON THEIR PRACTICE

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INTRODUCTION

A major problem in teacher education continues to be our inability to transfer pedagogical theory into classroom practice. Research (Cuban, 1993, 1984; Sarason, 1990; Langer, 1984; Cazden, 1988, 1986; Kirst and Meister, 1985) has shown that school settings and practices have remained fairly stable across time and quite similar across districts despite a plethora of reform efforts in the last decade. Sarason has posited that there has been a tendency to view the educational system in terms of parts, of self-contained problems, rather than as a network of interwoven issues. Cuban has noted that "where modest changes have occurred, they have occurred because teachers have absorbed rival beliefs that compete with existing ones" (1984, p. 262) and that there was a "steady growth of hybrid versions of two traditions [teacher-centered and student-centered] in each reform movement" (1993, p. 277).

If teachers are indeed the agents who are most likely to effect change in the classroom, albeit a hybrid theoretical change, then it seems apparent that attention must be given to the ways in which they think about their work and contemplate instructional choices. Indeed, it seems imperative that teachers be critical decision-makers. Swanson-Owens (1986) has contended that teachers are "active and adaptive agents who filter curricular innovations through complex meaning systems" (p. 71). This suggests that we need to understand how teachers interpret theory and attempt to implement it into meaningful classroom practice.

One means of uncovering the nature of the influences on teachers' decision-making is an exploration of their thinking. Current discussion about reflective thinking indicates that there is disagreement about what it is and how it contributes to teaching and learning. The common sense definition implies that it is merely a matter of thinking about one's thinking, but most researchers suggest that it is a much more complex activity. Dewey (1933) wrote about reflective thinking which begins with uncertainty in a belief, is followed by suspension of the belief in order to examine the underlying assumptions which contribute to it, and then culminates in a judgment or grounded assertion that results in new knowledge. According to Smyth (1989), reflective teachers employ four basic steps in their thinking about practice. They (1) *describe* what it is

that they do, (2) *inform* through analysis what it means, (3) *confront* how they came to think this way, and (4) *reconstruct* how they might do things differently. Schon (1987) has suggested that in most competent professionals there is a core of artistry, a kind of knowing that cannot be taught but which is displayed in unique, uncertain, and conflicted situations of practice. Making sense of a situation's uniqueness requires that the teacher resist standard interpretations, using a repertoire of examples, images, understandings, and actions to contemplate about the unfamiliar situation and how it relates to what is known.

Even such straightforward approaches to reflective thinking leave much room for debate about the nature of the thinking and its value. Can we identify reflective teachers? Are they better practitioners? Are they more likely to be successful in implementing significant and lasting changes in educational practice? If so, can reflective strategies be taught? What prompts reflective thinking? Is it a social process? Is it appropriate in all situations? The research addressing these questions is still in the early stages and while there is growing support for promoting reflective practice, there is no consensus on what this involves or how to measure its significance. Nonetheless many undergraduate programs are weaving a reflective decision-making schema into their theoretical base.

Preservice and novice teachers' beliefs are generally grounded in their experiences as students rather than in professional practice as educators (Grossman, 1990; Lortie, 1975). They have had fifteen years of on-site learning about the nature of teaching but only limited exposure to the pedagogical reasoning behind it. This apprenticeship by observation is difficult to subvert. Perhaps if we understand the ways in which preservice teachers process their beliefs, interpret changes related to those beliefs, and implement instructional innovations, we might learn how to bridge the gap between theory and practice.

This study was an attempt to make sense out of what teachers said they believed (theory), what they appeared to do (practice), and what they thought about what they believed and did. It focused on the following questions: (1) How can the thinking of student teachers be described? and (2) What contributes to or hinders the effectiveness of their thinking and the decisions which result from it?

RESEARCH PROCEDURES

The participants in this study were all undergraduate English majors enrolled in a teacher preparation program at a state research university in the Midwest. In order to be admitted into and retained in the teacher education program they were required to have a cumulative grade point average (GPA) of 2.5 on a 4.0 scale. To be approved for student teaching, they had to have a GPA of 3.0 in their course work in English. Completion of the program resulted in a Bachelor's degree and certification for teaching secondary English.

Basic professional courses were required in educational psychology and measurement, issues in education, and human relations. Students also needed a minimum of thirty semester hours in their major. The English Education program emphasized an inquiry orientation intended to foster reflective thinking practices. Preservice teachers completed a one-semester introductory practicum based on twelve hours per week of field experience. The accompanying seminar required that students participate in a variety of activities, including journal writing to promote thinking about their experiences. The English Methods class taken the semester before student teaching reinforced theory explored in other English education courses (e.g., Literature for Adolescents, Methods of High School Reading, Approaches to Teaching Writing, Language and Learning) and encouraged students to begin examining theory as it relates to practice. Primary components of the course were discussion and journal writing. During their student teaching, preservice teachers were required to attend a seminar where discussion and journal writing were again primary components of the coursework.

During the summer of 1990, I sent those students who were registered to student teach in the fall a letter explaining the nature of the study. Those who were interested in participating returned a pre-questionnaire. Out of a population of twelve, seven female students returned the pre-questionnaires and agreed to attend an orientation meeting to explain more about the research and to allow them the opportunity to ask questions before committing to the study. Of these seven, one student teacher decided not to participate. Another requested a change in her placement early in the experience and because she relocated

a significant distance from the university, she was dropped from the study. The five remaining student teachers became the focus for this research.

In order to represent the range and nature of thinking which occurred during the student teaching experience, data were collected from a variety of sources. In July before their student teaching experience when they were likely "closest" to pure theory and again in December when they were "closest" to practice, I administered a questionnaire modified from that used by Zitlow (1988). The items on the questionnaire explored the students' positions on theoretical issues (e.g., *I would use textbooks to teach grammar skills* or *I would replace teacher-correction with student-editing*) and aspects of the workplace (e.g., *Students' desire to learn* or *Appropriate facilities* or *Inservice opportunities*). Students recorded the degree of agreement with or importance of thirty-five statements using a Likert scale from 1 to 5. They were also encouraged to add their own statements of qualification or explanation. After I prepared a profile of their July and December responses, I asked the participants to think about the changes that had occurred and to write about them in their Seminar journals before they had the third and final interview for the study.

I made two classroom observations with each participant to provide a context for interviews. For the first two conferences, a scripted interview of eight questions was used to prompt the participants to think about their teaching (reflection-on action), to recall decisions that were made in planning (reflection-for-action) as well as in the act of teaching (reflection-in-action), and to evaluate the status of their expertise as well as what contributed to or hindered their growth. All of the interviews were fully transcribed for analysis.

I also collected and photocopied journals the participants wrote in their professional courses. The Methods journals provided a record of the participants' thoughts prior to student teaching at a time when they were immersed in theory and discussions on how it might work in the classroom. The Seminar journals provided a record of the student teachers' thoughts when their focus was on classroom practice. I used anecdotal notes taken during observations to enhance the context for the student teachers' comments and recorded informal comments from

mentors and supervisors to aid my understanding of the student teachers' journal entries. Table 1 provides a summary of this data.

The journal entries and transcribed interviews were first analyzed by bracketing individual episodes (changes from the initial topic entry in the journal or each scripted question in the interview). The episodes were then analyzed to determine what contributed to the students' exploration and understanding of the issues posed in the entries. These contributions were described in terms of five sources of knowledge (see Table 2). One source, *text*, refers to textual material that had influenced their thinking (e.g., "I read an article from *English Journal* that was inspirational and dealt with teaching alienated students"). References to journal articles, textbooks, or theory fall into this category.

A second source of knowledge is *observation*. I used this category to describe events the student teachers had watched which influenced their thinking. Two types of episodes were noted: (1) those that refer to experiences which occurred during years as a student in elementary or secondary school and focused on events in which the students were recipients of instruction (e.g., "One of my favorite teachers would read us chapters of his book") and (2) those which occurred while the students were in university classes where the focus was on evaluating teaching practices such as observing secondary school teachers during a practicum experience or university faculty modeling instructional strategies.

Research on apprenticeship by observation (Lortie, 1975) indicates that teachers are strongly influenced by the way they have been taught. Separating this category into sub-groups allowed me to track patterns of influence prior to and during their professional coursework. The second type of observation referred to experiences in which the students viewed an event while in the role of teacher. Such references occurred when the students expected to see teachers modeling particular behaviors and their comments analyzed what they had observed (e.g., "I noticed something today. Nancy was in front, talking to third hour about their final. I was in the back watching. I knew that the eyes I was viewing her from were not the same as the ones that were so eagerly watching two months ago. I felt changed. It was the first time I realized that I do have my own style, even in Nancy's classroom").

A third source of knowledge is *conversation*. I used this term to describe activities in which language was generated between the student and others in the education profession. Included were both written language in the form of journal entries and oral language among colleagues such as student peers, cooperating teachers, and university personnel.

The fourth source of knowledge was *teaching experience*. This category included references to teacher behaviors such as lesson planning, instruction, evaluations, classroom management, routine responsibilities such as faculty meetings and conferences with parents, and extra-curricular activities such as school dances and sports events.

A final source of knowledge was *miscellaneous*. I used this category to indicate sources of knowledge that did not fit any of the previous categories. References to non-academic experiences ("I have to correct my boss's grammar all the time") or to situations that did not relate to learning about teaching ("Have you been to the new upstairs addition to Prairie Lights? There's a whole section just for kids. It's incredible") fell into this category, as did generalizations that could not be identified with one of the other labels ("I think starting out with more contemporary and popular works might enable you to bring in more kids from all the different worlds, the at-risk kids, and the special ability kids").

The next stage of analysis involved describing the thinking that characterized the decision-making exhibited in the data. Grimmett et al. (as cited in Clift, Houston, and Pugach, 1990) summarized perspectives of reflection based on epistemological roots. Their model contributed to the formulation of four modes of thinking which characterize the way in which the student teachers used the sources of knowledge to make decisions that affected classroom instruction and their interaction with colleagues.

The *technological* mode of thinking relies on knowledge from an external source to direct or control the teacher's practice so that it conforms to methodology believed to produce positive effects on student learning. The teacher and the learner behaviors are identified in terms of predetermined tasks and outcomes, and decision-making is characterized by following a prescribed technique rather than by adapting the theory to

specific teaching contexts.

The second mode, referred to as *situational* thinking, involves the identification of a problem and its solution based on observable behaviors within a specific context. Sources of knowledge are limited to those immediate to the context.

The *deliberate* mode of thinking focuses on a specific context but the teacher seeks other sources of knowledge outside the immediate situation in order to create new meaning which will inform the teacher's practice; however, this acquisition of knowledge does not prompt action that significantly alters classroom practice.

The fourth mode, referred to as *dialectical* thinking, is similar to the deliberate mode in that multiple sources of knowledge are used to look at a specific event in a new way. As a result of the contemplation, which often occurs over time, previous understandings are reconstructed. The teacher attends to aspects of the situation that she had previously missed or ignored, assigning new significance to these features. In addition to describing the situation and posing the problem, the teacher arrives at a solution which *transforms* her teaching. The problem solving is characterized by a change in thinking and practice which is different from that previously followed. These modes of thinking are summarized in Table 3.

The third stage of data analysis involved writing individual case studies of the five participants. In order to create a portrait of each student teacher, I selected episodes that illuminated common threads woven throughout the data sets, looking more closely at the modes of thinking and recreating a story representative of each student teacher's experience and her pattern of thinking. While it was important that each case study stand alone, allowing the student teachers to be seen as individuals, it was also necessary to analyze them as a group by showing how different modes of thinking were used to contemplate similar situations. By collapsing the data in this way, it was possible to discover insight into how we might foster facility in thinking about teaching in meaningful ways that assist teachers in the decisions they make.

FINDINGS

In response to the first research question, the data showed that while all of the participants were able to elicit information from one or more sources of knowledge, their ability to integrate it into new meaning varied. Those who were able to recognize relationships between events and to facilitate an understanding of the connections were more likely to expand their thinking about a situation, and this often helped them to enact solutions that resolved problems in more effective ways. In contrast, those who tended to focus on specific contexts and to view sources of knowledge in isolation often underconceptualized the nature of the situation which led to less effective solutions to the problems they posed.

In general, a preference for technological or situational thinking paralleled a tendency to view sources of knowledge in isolation. This commonality is not surprising since neither mode requires exploration beyond the boundaries of the stated event and frequently the source(s) of knowledge called upon already existed within the specific context described. A similar relationship existed between the preference for deliberate or dialectical thinking and an inclination to elicit multiple sources of knowledge and to integrate the information acquired from them.

In response to the second research question concerning potential contributions or hindrances to effective reflection, three factors seemed to be relevant. The first factor was the school culture. Researchers (e.g., Lortie, 1975; Hargreaves, 1990; Rosenholtz, 1989) have investigated the influence of the school culture on effective teaching and the ability to make meaningful changes within the workplace. One facet of the school culture that seemed to have influenced these student teachers' thinking was the degree to which they felt invited into collaboration with others. The student teachers who had a supportive climate, most often associated with the cooperating teacher or other mentors in the school, the nature of interactions, and the availability and quality of extended dialogue, engaged more often in deliberate and dialectical thinking.

Another factor that influenced the degree to which these student

teachers reflected on their practice appeared to be their capacity for seeking and integrating multiple sources of knowledge in order to activate different modes of thinking. In this study, the category of conversation seemed to be the most powerful means of fostering the use of multiple sources of knowledge. The availability and nature of professional talk appeared to influence the student teachers' ability to suspend their initial beliefs about a situation, seek additional information, and then consider alternative solutions to the problem at hand. Scripted conversation in the form of journal wiring also proved to be a significant influence on what these student teachers perceived as critical incidents and how they processed information to arrive at possible resolutions.

The final factor in analyzing what contributed to or hindered these student teachers' reflection and the resulting decisions they made involved their ability to activate the mode of thinking that would be most effective in addressing their concerns and generating satisfying solutions. All of the modes are needed to facilitate the many decisions which characterize a teacher's workday. Certainly, the technological mode is appropriate when outcomes are predictable and prescribed routines will be both efficient and effective in achieving them. Similarly, there are many events in the classroom that can be handled most easily and quickly using situational thinking in which the teacher's repertoire is sufficient to resolve the issue. The deliberate and dialectical modes are needed to initiate new understanding when the circumstances warrant expertise that is not part of the teacher's repertoire or when routine solutions do not prove to be satisfactory. The case studies indicated that all of the students were confronted with classroom uncertainties that required them to contemplate their practice. The deliberate and dialectical modes were necessary when more critical events should have prompted their reflection. In such cases, the effectiveness of their decisions was tied to their ability to recognize the complexity of the event and to employ the mode of thinking that generated alternatives that could lead to appropriate solutions.

CONCLUSIONS

This study examined the sources of knowledge and modes of thinking student teachers used to assist them in the decisions they made about

their classroom practice. Two factors emerged as potential keys to increasing a student teacher's capacity for reflective thinking. First is a predisposition for such contemplation and second is the influence of mentoring.

Researchers (e.g., Zeichner, Tabachnick, and Densmore, 1987; LaBoskey, 1989) have indicated that one of the factors in a teacher's ability to engage in reflective practice is her disposition for it. This study supports that premise. It was evident that the student teachers in this study had different capacities for evaluating their teaching. Some of them were inclined to ask questions, to recognize the problematic in critical teaching events, and to seek a deeper understanding of what contributed to their uncertainty. They were also more likely to elicit multiple sources of knowledge and to employ deliberate and dialectical thinking at appropriate times. In contrast, some of them were less proficient in making connections between events in their classroom, their philosophy, and the instructional practices they employed, and they were less likely to synthesize the information they had available to reconstruct new meaning of an event.

Although the student teachers participated in the same teacher education program based on an inquiry orientation and were cohorts in the same Methods and Seminar courses, not all of them were able to engage effectively in reflection about their own classroom practice. This suggests that exposure to inquiry orientations and participation in activities intended to encourage reflective thinking will not ensure that teachers entering the profession are sufficiently capable of transferring it to their classroom practice. We need to consider how we might accommodate a student's predisposition for reflective thinking. If we want our students to suspend what they think they know about teaching in order to explore the theory that undergirds their choices, perhaps we need to be more specific in expressing our intentions. In addition to reading about and observing teaching strategies that are consistent with current theory, some students might need a more direct form of instruction. Feedback during discussions and in journals may need to be tailored to the needs of individual students in order to model more explicitly the kinds of questions that can lead to deliberate and dialectical thinking.

The second factor that emerged in this study was the role of mentoring. It is apparent that while a supportive relationship with their cooperating teachers and other colleagues was important, the nature of the collaboration was the key to fostering the more reflective modes of thinking. Those student teachers who had mentors who modeled critical examination of their own teaching and who encouraged them to explore problematic issues were also frequently engaged in deliberate and dialectical thinking. On the other hand, the student teachers who had mentors who were less frequently available, who were more covert in the evaluation of their own practice or who focused primarily on incidents pertaining to immediate classroom concerns were most often involved in technological or situational thinking.

If we believe that the role of mentors is a critical factor in educating reflective teachers, we need to consider how we might increase their ability to reinforce the goals of an inquiry oriented teacher education program. Our intentions need to be more explicit to mentors so they are aware of the nature of the students' teacher training. This might require inservice opportunities to inform cooperating teachers about the philosophical basis for the program and to assist them in their own growth as reflective thinkers. Or it might be beneficial to encourage a more formal partnership among the student teacher, cooperating teacher, and university supervisor for the purpose of reviewing the goals of inquiry and exploring how they might be incorporated into the experience. Finally, since this study indicates that conversation was the most powerful source of knowledge in facilitating reflective thinking, the importance of professional dialogue needs to be emphasized throughout the student teaching field experience and ways to facilitate it explored.

Kilbourn states that self-monitoring or the "personal supervision of one's own practice [is] an essential aspect of professionalism" (1991, p. 722). This study supports his stance by examining how student teachers think about their practice. It also recognizes that the task is often, but not solely, a social one. The interaction with others is an important factor in how a capacity for reflective thinking, and thus the ability to engage in self-monitoring, is fostered. Further study over a longer period of time might inform our understanding of how such thinking can continue to be encouraged and sustained as teachers move away from their initial

network of university cohorts and cooperating teachers and into their own professional settings.

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Table 1.

Summary of Data Collected

Student	Methods Journal	Seminar Journal	Misc. Journal	Intv 1	Intv 2	Intv 3
Beth	x	x	-----	x	x	x
Emily	-----	x	-----	x	x	x
Judy	x	x	Dialogue	x	x	x
Mary	-----	x	Reading Methods	x	x	x
Teresa	x	x	-----	x	x	x
TOTALS	3	5	2	5	5	5

Table 2.

Sources of Knowledge

Text (T)	Something the student has ***read*** influences her thoughts (e.g., references to journal articles, textbooks, etc.)
Observation (O)	Something the student has ***watched*** influences her thoughts (e.g., practicum experiences or observation of cooperating teachers and colleagues for purpose of learning about technique)
School (O-S)	References to ***K-12 experiences*** in which the student was a recipient of instruction influence her thoughts
University (O-P)	References to experiences in ***university classes*** that involve evaluating teaching practices influence student's thoughts
Conversation (C)	Activities in which ***language is generated between student and other(s)*** (e.g., journal entries, professional talk with peers, cooperating teachers, or faculty influence her thoughts
Teaching Experience (TE)	Student is engaged in ***teacher behaviors*** such as planning, instruction, evaluation, student management, parent conferences, faculty meetings, etc.
Miscellaneous (M)	Comments that do not fit the previous codes such as references to non-academic experiences, unsubstantiated generalizations, or comments about situations that do not inform pedagogical beliefs fit in this category.

Table 3.

Summary of Modes of Thinking

Technological Thinking	Knowledge from an external source directs or controls teaching practice so that it conforms to methodology believed to produce positive learning outcomes.
Situational Thinking	Knowledge resides in a specific context where both problem setting and problem solving focus on observable behaviors.
Deliberate Thinking	Multiple sources of knowledge are used to extend understanding within a specific context, informing one's thinking about practice.
Dialectical Thinking	Multiple sources of knowledge are used to alter previous understandings, to reconstruct meaning, and to transform practice.

PRINCIPALS' PERCEPTIONS CONCERNING PEER HARASSMENT

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INTRODUCTION

Teasing can turn to bullying and bullying can escalate into violence. Brendtro and Long (1995) found that peer harassment is an early indicator of future problems and that without intervention 40% of childhood bullies become adult felons.

Reports of harassment taking place in schools fills the headlines and harassment is reported by media as daily common occurrences in schools across the United States. According to the survey by the National School Board Association (Feder-Feitel, 1994)1 out of every 7 children today is either a bully or the victim of a bully.

Further concern about behaviors at school are found in the Gallup Poll results. For the first time, the 26th Phi Delta Kappa Gallup Poll of the Public Attitudes Toward the Public Schools (1994) reported the issue of fighting-violence-gangs to be equal to the concern for a lack of discipline. These two issues are reported to be the biggest problems facing the public schools today.

These documents and other publications challenged the researchers to survey the type and number of incidents of peer harassment in South Dakota schools. Are the South Dakota schools experiencing cases of peer harassment, or is South Dakota insulated from or immune to escalating peer harassment cases? Exactly what is the status of peer harassment in South Dakota's schools? The following research report will answer those and other questions concerning harassment.

RESEARCH PROCEDURES

To answer the questions about the extent and severity of peer harassment in South Dakota's schools the researchers randomly surveyed selected principals across South Dakota to determine their perceptions of peer harassment within their individual schools. The questionnaire contained eight questions pertaining to peer harassment and was mailed to 198 principals. The researchers selected three populations of South Dakota educational strata for this survey: elementary, middle and high schools.

Due to the uneven number of elementary, middle and high schools in South Dakota, an equal percentage of each level from the 198 schools were surveyed. Fifty-five questionnaires were mailed to the high school principals, twenty nine were returned for a 53% response. At the middle level, fifty-six were distributed, thirty-four were returned for a 61% response. At the elementary level eighty-seven surveys were sent, twenty-eight were returned for a response rate to 32%. The composite response rate was 52%

After the completed surveys was received, total percentages and response tabulations were calculated for each of the questions. Specific notes and comments made by the respondents were also recorded. In addition, several principals enclosed copies of their peer harassment policies.

FINDINGS

The first survey question asked the principals to indicate their perceptions of whether children are harassing others or being harassed less or more frequently than 10 years ago. A Likert scale with 1 = Less Frequent than 10 years ago to 5 = More Frequent than 10 years ago was used. Four percent of the principals reported that harassment was Less Frequent than 10 years ago; twelve percent stated harassment to be Slightly Less; forty percent indicated it to be About the Same; thirty-seven percent reported harassment to be Slightly More Frequent than 10 years ago; four percent reported harassment to be More Frequent than 10 years ago; and three percent of the principals did not respond to the question. Responses from all categories are shown in Table 1.

The second survey question asked the principals to indicate if their school did or did not have a written harassment policy. Sixty-five percent reported their school had a written policy, thirty-three percent reported no policy, and two percent did not respond to this question. This information is shown on Table 2.

The third survey question asked the principals to indicate the magnitude of harassment problems in their schools. Perceptions were reported on a Likert scale with 1 = Not a Problem to 5 = Very Serious

Problem. Eleven percent responded harassment was Not a Problem; thirty-five reported a Slight Problem; thirty percent indicated harassment to be a Moderate Problem; twenty percent perceived the magnitude to be a Serious Problem; three percent reported harassment to be a Very Serious Problem; with one percent not responding to this question. Responses from all categories are shown in Table 3.

The principals were asked to respond all incidences of harassment from a provided list of seven categories/types and a general category/type of "other". A total of three hundred seventy-three incidents were reported. Those types receiving the most responses were Verbal Harassment-example, name calling (78 incidents) and Physical Harassment - examples, hitting, kicking, touching (70 incidents). Closely following in number of responses were Gestural (60 incidents), Written (54 incidents), Threats - example, verbal (52 incidents), and Visual Harassment - example, graffiti (44 incidents). Other was reported (8 incidents) and weapons (7 incidents). Responses are shown in Table 4.

The fifth question asked how principals' perceived teacher support of a written school policy . A Likert scale with 1 = Not Receptive to 5 = Highly Receptive was used to gather the information concerning teacher support of a policy. The principals responded that three percent of teachers would Not Be Receptive to a written school policy; nine percent would be Slightly Receptive; twenty-five percent would be Moderately Receptive; thirty-two percent would be Receptive; twenty-six percent would be Highly Receptive; and five percent did not respond to this question. Responses are found in Table 5.

The sixth question surveyed principals' perceptions of parental support of a written policy and this information was reported on a Likert scale with 1 = No Support to 5 = Very Strong Support. Two percent of the principals indicated No Support; eight percent indicated Slight Support; twenty-six percent reported Moderate Support; thirty-six percent responded Strong Support; twenty-two percent reported Very Strong Support; and six percent of the principals did not respond. The information is found on Table 6.

The seventh question surveyed principals' perceptions of peer

harassment identification training. A Likert scale was implemented with 1 = No Success to 5 = High Success. Zero percent of the principals reported No Success; seventeen percent indicated Slight Success; forty-nine percent reported Average Success; sixteen percent reported Moderate Success; five percent indicated High Success; while fifteen percent did not respond. Responses from all categories are shown in Table 7.

The final question asked principals' perceptions of peer harassment intervention success. The Likert scale categories progressed from 1 = No Successful to 5 = Above Average Success. The principals reported zero percent No Success; thirteen percent indicated Slight Success; fifty-five percent reported Average Success; thirteen percent responded to Moderate Success; and four percent reported Above Average Success; and fifteen percent did not respond. Responses from all categories are shown in Table 8.

COMMENTS

Comments were solicited from the respondents. The responses were varied and examples of comments follow as to the prevalence, amount and motivations involving peer harassment.

> I feel harassment is done to gain attention of the other person involved.
>
> I don't feel harassment from peers is any worse today than ten years ago. I feel it is just more publicized and documented today, making it appear to be more prevalent.
>
> They are exposed to more of it in our culture, TV, newspapers, theater, etc.
>
> Petty jealousies result in harassment. Demands for equality result in harassment. Ignorance results in harassment. Blaming others for your problems results in harassment.
>
> Harassment seems to be a big problem in the community. It has increased since I first started teaching thirteen years ago.

Difficulty in handling peer relationships causes harassment.

Children always harass each other. It's just kids in a pecking order.

Students value systems have changed.
Social upbringing..parental lack of training.

Kids are reacting different to pressures than we did 10 years ago.

I don't believe that there is any more harassment than 10 years ago. I feel that there is more attention brought to it today.

I feel the person making comments or doing gestures has a low self-esteem and it may be coming out in this way.

They tolerate violence more-reciprocate with violence more--seem less aware of the ramifications of their behavior.

We are seeing much more angry children and kids who are striking out because of a variety of reasons-Parents are out of control!! Children are holding parents Hostage!

We are having more intimidation. This year has been a particularly bad year for the eighth grade.

It is become more of a problem. I've had H.S. student leave school because of it.

I have had 1 case in the last 5 years.

Children are not kind to each other when under stress, unless taught to react differently.

Human nature! There will always be differences between people. Sharing verbal and physical abuse will happen. I'm 47 years old and I actually think there is less of it today than when I was in school. When I went to school it was town verses country and fights were common.

The comments seem to be divided between those who felt it was inevitable and not changed in frequency over the years, to those who felt the number of harassment incidences had increased and something should be done to alter the direction of escalated harassment. Various explanations were provided from age of the child, gaining attention, lack of social skills, to media influence and lack of positive parental influences.

CONCLUSIONS

The data collected and the comments authored by the responding principals lead the researchers to conclude that South Dakota schools are relatively free from peer harassment. Some respondents were concerned that peer harassment was increasing due to societal and cultural issues, contrasted by others who felt that peer harassment had and always would exist. Written school harassment policies are supported. It is obvious awarenesses are becoming heightened and schools are taking measures to prevent and educate children on identification and alternatives to peer harassment. Recommendations to implement peer harassment policies follow.

RECOMMENDATIONS

Based on the relevant literature, data collected and comments made, the following recommendations are made for methods of preventing or coping with peer harassment.

1. Principals should monitor and record harassment and bullying incidents, to provide statistical information for study and use in determining courses of action.

2. Students should be involved in preventative programs, such as participating in conflict resolution and/or peer mediation practices, the earlier the age/grade level, the better.

3. Parents and community volunteers should be solicited as active participants in such programs.

4. Appropriate dress codes should be instituted.

5. Principals and other school administrators should build into and maintain structure in the system, to discourage harassment.

6. Principals and teachers should develop programs and activities to instill, develop and build self-esteem and pride. Systems of rewards and punishments should be reviewed to determine appropriate methods.

7. There should be a system wide and building plan for crisis situations and responses to incidents.

8. School systems and principals should provide annual training for all building personnel so that procedures are in place when needed.

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Table 1.

Perceived Changes in Harassment: A Ten Year Comparison

Category	Elementary	Middle	High	Total
1 - Less Frequent	4%	3%	7%	4%
2 - Slightly Less	11%	15%	10%	12%
3 - About the Same	32%	35%	48%	40%
4 - Slightly More	46%	38%	28%	37%
5 - More Frequent	7%	3%	3%	4%
N/R	0%	6%	4%	3%

Table 2

Schools With A Reported Written Peer Harassment Policy

Category	Elementary	Middle	High School	Total
Yes	64%	59%	72%	65%
No	32%	38%	28%	33%
N/R	4%	3%	0%	2%

Table 3

Perceived Magnitude of the Harassment Problem

Category	Elementary	Middle	High	Total
1 - Not a Problem	14%	12%	7%	11%
2 - Slight Problem	29%	26%	52%	35%
3 - Moderate Problem	29%	32%	28%	30%
4 - Serious Problem	25%	24%	10%	20%
5 - Very Serious Problem	3%	6%	0%	3%
N/R	0%	0%	3%	1%

Table 4

Reported Types of Peer Harassment

Category	Elementary	Middle	High	Total
Verbal	21	31	26	78
Physical	22	30	18	70
Gestural	17	26	17	60
Written	15	24	15	54
Threats	15	19	18	52
Visual	7	21	16	44
Other	2	4	2	8
Weapons	4	2	1	7

Table 5

Teacher Support for a Written Harassment Policy

Category	Elementary	Middle	High	Total
1 - Not Receptive	11%	0%	0%	3%
2 - Slightly Receptive	14%	6%	7%	9%
3 - Moderately Receptive	14%	30%	31%	25%
4 - Receptive	32%	32%	31%	32%
5 - Highly Receptive	25%	29%	24%	26%
NR	4%	3%	7%	5%

Table 6

Parents Support for a Written Harassment Policy

Category	Elementary	Middle	High	Total
1 - No Support	4%	3%	0%	2%
2 - Slight Support	18%	0%	6%	8%
3 - Moderate Support	14%	35%	28%	26%
4 - Strong Support	32%	44%	32%	36%
5 - Very Strong Support	25%	15%	28%	22%
NR	7%	3%	6%	6%

Table 7.

Instructional Results of Peer Harassment Identification Training

Category	Elementary	Middle	High	Total
1 - No Success	0%	0%	0%	0%
2 - Slight Success	25%	9%	17%	17%
3 - Average Success	43%	53%	49%	49%
4 - Moderate Success	18%	15%	17%	16%
5 - High Success	7%	3%	0%	3%
NR	7%	20%	17%	15%

Table 8

Reported Harassment Intervention Success

Category	Elementary	Middle	High	Total
1 - No Success	0%	0%	0%	0%
2 - Slight Success	18%	6%	14%	13%
3 - Average Success	57%	58%	51%	55%
4 - Moderate Success	11%	12%	14%	13%
5 - Above Average Success	7%	6%	0%	4%
NR	7%	18%	21%	15%

MATHEMATICS ACHIEVEMENTS
HISPANIC-ANGLO

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INTRODUCTION

The scores for mathematics proficiency achieved by Hispanic-language minority students as assessed by the National Assessment of Educational Progress (Dossey, Mullis, Lindquist, & Chambers; 1988) show that Hispanic students have insufficient mathematics skills at age nine, at age thirteen, and at age seventeen. Specifically, Hispanic students lag behind Anglo students in 1) simple arithmetic facts (concepts, computation, algorithmic performance); 2) beginning skills and understandings (analyzing simple bar graphs, money problems); and 3) problem solving (word problems and analyzing information on complex bar graphs). Furthermore, as age and level of proficiency increase, so do the performance gaps between Hispanic and Anglo students as measured by achievement scores. Thus, the purpose of this paper is to expand our understanding of Hispanic students' mathematical achievement and to challenge our assumptions concerning the performance differences between Hispanic and Anglo populations.

DESCRIPTION OF THE STUDY

Pilot Study Methodology and Results

The data for the pilot study were statewide achievement measures collected by a state department of education in the northwestern United States. The Metropolitan Achievement Test, Sixth Edition (Mat 6) was given to all fourth, eighth, and tenth grade students in the state under standard testing conditions. Twenty-two school districts located in the same geographic area of the state with known high numbers of Hispanic students were selected from the two hundred state schools. Of these twenty-two largely Hispanic school districts, three schools were chosen for the pilot study. One was a large district (11,773) with an Hispanic school population of 18.36%. The other districts were smaller (663; 2599) with Hispanic populations of 78.73% and 41.55% respectively (State of Washington, 1987). Data was analyzed by use of the SPSSX statistical program. T-tests were completed on three levels of mathematical achievement: mathematical concepts, mathematical computation, mathematical problem solving. When the data was analyzed, the typical gap between Hispanic and Anglo mathematics achievement was evident.

That is, the instructional mathematics level for Hispanic students remained below that of Anglo students across grade level. However, with respect to mathematical concepts, mathematical computation, and mathematical problem solving, two patterns became evident. The first pattern was that for the districts chosen, Hispanic/Anglo mathematical achievement was at different levels for fourth and eighth graders, with the Hispanic students' scores below those of Anglo students. However, the mathematical achievements were the same for both groups at grade ten. The second pattern that evolved was that while there were gaps between Hispanic/Anglo students' mathematics achievement levels, for some districts these differences in mathematical computation were not significant ($t = -1.681864$ and $t = -.3898074$). The main study was undertaken to determine if the above patterns would hold for a larger sample.

Main Study Methodology and Results

The data for this study were statewide achievement measures collected by a northwestern state school office. The Metropolitan Achievement Test, Sixth Edition (MAT 6) was given to all fourth, eighth and tenth grade students in the state under standard testing conditions. From this database, nine school districts with high (18.36% to 78.73%) Hispanic enrollments were selected (see Table 1). Data was analyzed by t-tests to determine if any significant differences exist between mathematical achievement of Hispanic and Anglo students on mathematical concepts, mathematical computation, and mathematical problem solving.

The results of the t-test analysis indicated that the gaps in Hispanic/Anglo mathematical achievement were not a result of the Hispanic populations' inability to do mathematical computation at the fourth grade. The typical gaps between Hispanic and Anglo students' mathematical achievement were evident for mathematical concepts and mathematical problem solving (see Table 2; see Table 3). These gaps existed in mathematical concepts (7 out of 9 districts) and in mathematical problem solving (7 out of 9 districts), but not in mathematical computation (6 out of 9 districts). However, when comparing Hispanic/Anglo achievement in the eighth grade (see Table 3), 8

out of 9 school districts did show significant difference on mathematical computation. Thus, at the eighth grade, the gap remained between Hispanic and Anglo mathematical achievement in mathematical concepts and in mathematical problem solving. In addition, at eighth grade there is a gap in mathematical computation achievement. The implication of this data is that the gap in achievement is the result of the difference in instructional methods being used in fourth grade classrooms compared to those used in eighth grade classrooms.

IMPLICATIONS AND DISCUSSION

The results of this study indicate that Hispanic students can do basic operations and simple arithmetic facts in the fourth grade, but significant differences appear in mathematical concepts and mathematical problem solving between Hispanic and Anglo students both at the fourth grade and the eighth grade. A possible reason for these differences between Hispanic and Anglo mathematical achievements is that mathematical concepts and mathematical problem solving are language dependent. Therefore, instructional methods which develop language competency need to be employed. A potential solution for Hispanic students to gain proficiency in mathematical concepts and problem solving is to learn mathematics by being in cooperative learning groups (NAEP, 1992). This contention is supported by other researchers (Little Soldier, 1989; Zulich, 1988; Cole and Griffin, 1987; Johnson, Johnson, Holubec, Roys, 1984). Claus and Quimper (1988), studying the bilingual programs in the Saginaw, Michigan Public Schools, found that the most effective programs were those that included small group instruction, cross-age tutoring and team games. Good, Rays, Grouws, & Mulryan (1989) found that when teachers utilized heterogeneous small group instruction in their mathematics classes, students were more active learners and used, as well as verbalized, higher-order thinking skills. Using cooperative learning in the mathematics classroom will better prepare Hispanic students to deal with problems and will help them to develop a variety of techniques to approach and work problems. In addition, language development will be fostered, improving understanding of mathematical concepts while improving mathematical problem solving abilities.

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Little Soldier, L. (1989). Cooperative learning and the Native American student. Phi Delta Kappan, 71(2), 161-163.

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Table1

Percent of Hispanic/Anglo Populations

School District	% Hispanic	% Anglo	Student Population
39007	18.36	73.82	11,773
11001	30.21	60.13	6,395
39200	50.43	48.00	2,225
39201	54.39	44.52	3,769
39202	56.02	26.93	2,540
39207	41.55	28.24	2,599
39120	78.73	21.27	663
39204	60.14	30.01	883
13146	37.78	59.80	704

Table 2

Fourth Grade Hispanic/Anglo Comparison

School	MathConcepts	MathComp	MathProblemSol
01147	.001	.025	.001
13146	.035	.564	.269
11001	.001	.987	.001
39007	001	.001	.001
39120	.065	.205	.069
39200	.001	.146	.001
39201	.001	.005	.001
39202	.001	.150	.001
39207	.001	.654	.O31

Significant differences $p<0.05$

Table 3

Eighth Grade Hispanic/Anglo Comparison

School	MathConcepts	MathComp	MathProblemSol
01147	.001	.004	.001
13146	.014	.012	.002
11001	.001	.001	.001
39007	.001	.001	.001
39120	.346	.700	.287
39200	.001	.001	.001
39201	.001	.001	.001
39202	.001	.019	.001
39207	.001	.001	.001

Significant differences $p<0.05$

TIME FOR A CHANGE:
STUDYING TIME AND SPACE FROM AN HISTORICAL PERSPECTIVE

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Thematic units are lesson sequences of short duration centered around a specific topic or theme, such as science fiction, the Great Depression, or pioneers. The purpose of a thematic unit is to integrate curriculum areas around a common theme in order to teach the basic concepts of this theme in all content areas. A thematic unit is a vehicle for demonstrating the interconnectedness of learning and the manner in which concepts cross various content areas.

The study of content through thematic units has long been established as an effective way for helping students to learn information and make connections between and among the various concepts taught. Many professional organizations, including the National Association for the Education of Young Children, International Reading Association, and the National Council of Teachers of English, have promoted the use of thematic teaching. The National Middle School Association specifically endorses thematic units and interdisciplinary teaming and teaching as the preferred method of instruction for middle level students. The strong support of curriculum integration through thematic planning is further supported by research in building schema and scaffolding.

CURRENT PRACTICES AND KNOWLEDGE AMONG EDUCATORS

When surveys of current practices are conducted, researchers find that very few teachers are using thematic units in their classrooms. Many teachers continue to teach almost exclusively from their textbooks, which may be poorly written or require very little higher order thinking. The coverage of some basic concepts are often superficial and give only minimal depth to important ideas. Of course, even the best textbook is still content-specific, for students are unable to see how the topic being studied relates to other subject areas when using only one source.

One of the basic concerns of teacher educators is that teachers tend to teach in the manner in which they have been taught, or teach in the same manner as their colleagues, rather than using new methods based on research. If teachers are to be expected to teach thematically, then teacher educators must introduce thematic units in teacher education classes and model the use of this methodology.

As strong advocates of thematic teaching and learning, as well as enthusiasts of young adult literature, we believe it is important to provide teachers with thematic units that can be used in the classroom. This paper presents a thematic unit that can be used by teachers in middle or high school classrooms. It is based on the subject of time travel and introduces such concepts as time, history, and perspective in a context of social and self awareness. Suggested books following this theme are listed in Appendix A.

A major reason for developing thematic units is the discrepancy we have seen with both pre-service and in-service teachers. In an informal survey of secondary students in an Adolescent Literature course, only seven out of 20 were able to articulate knowledge of thematic units. Others were either completely unfamiliar with the term, or were unable to state the components of a thematic unit once the term was defined. Those students who were familiar with thematic units stated that this knowledge had been gained from courses dealing with reading/teaching, such as adolescent and children's literature, reading in the content area, or English-education courses. Obviously, more attention needs to be paid to the instruction of thematic units, for even the students with the most knowledge regarding them stated that they needed more information.

An informal survey regarding thematic units was also given to practicing teachers in a middle level education course. (See Appendix B) Although all teachers were familiar with thematic units, few used them frequently. A standard request was to find good units that can be taught in a regular classroom, using materials and resources available to the average teacher. It would seem that the more emphasis placed upon thematic planning and ideas for units in graduate coursework, the more thematic units would be used in the classroom.

A purpose for selecting the theme of time and time travel is that most middle level students tend to be "locked in time." That is, they view the world and everything in it from their personal perspective. While this is expected from most transescents, the ability to remove personal involvement in every situation and to view things more objectively is a goal associated with maturation. As teachers assist transescents in their personal maturity, a study of time and historical perspective can be very

helpful. When students understand that they are not the center of the universe, they are more eager to see how world and other events affect those around them. Caring children tend to become caring adults.

CHILDREN'S PERSPECTIVES REGARDING TIME

In a survey conducted with area fourth and fifth graders, students were asked to identify what they considered important world events in their lifetime and in the entire history of the world. (See Appendix C) They were asked to identify what they thought was the most important thing that ever happened to them also, and the results are amusing as well as informative. Of those responding, 30% identified the day they were born as the most important event in their life! While this shows a healthy self-esteem, it does leave the impression that beyond being born, everything else is a side issue. Once again, 30% of the students responding identified a personal experience as the most important world event in their lifetime. There may have been some confusion regarding the question, but the point is that a large number of children continue to view their world from a decidedly egocentric point of view.

Children need opportunities to read books from other places and times in order to help them understand today. Benefits from such reading include the following:

*A study of time helps to broaden the perspective of middle level students
*Study of another time gives a clearer picture of today
*Middle school students are not the center of time or the universe
*Studying the past through time travel helps one to understand the present
*Human beings need to connect with others
*We cannot totally empathize with those who lived before us or those who will live after us. We are all "locked in time."
*Human nature is constant. There are some aspects of human nature and the human condition that will always exist

Because thematic units are valuable teaching tools, it is recommended that they be strongly emphasized in university coursework

which will in turn lead to them being utilized more frequently and productively in the public school classroom.

Appendix A

Bibliography

Imaginary Kingdoms

The characters in these books are often lonely and have few friends. Creating an imaginary place allows them to leave their current situation and retreat into a better one. When the characters become stronger, they are able to give up their reliance upon the unreal and center upon improving and enjoying their lives.

Park's Quest by Katherine Paterson. NY: Lodestar Books, 1988.

Bridge to Terabithia by Katherine Paterson. NY: Harper and Row, 1977.

Through the Hidden Door by Rosemary Wells. NY: Scholastic, 1987.

Ghosts in Time

These characters are ghosts...yet still have a very real purpose for remaining on earth in these problem novels.

Something Upstairs: A Tale of Ghosts by Avi. NY: Orchard, 1988.

Stonewords: A Ghost Story by Pam Conrad. NY: Harper and Row, 1990.

Canyons by Gary Paulsen. NY: Delacorte, 1990.

The Ghost Belonged to Me by Richard Peck. NY: Viking, 1975.

Ghosts I Have Been by Richard Peck. NY: Delacorte, 1977.

The Dreadful Future of Blossom Culp by Richard Peck. NY: Delacorte, 1983.

Blossom Culp and the Sleep of Death by Richard Peck. 1986.

Remember Me by Christopher Pike. NY: Simon & Schuster, 1989.

Jeremy Visick by David Wiseman. Boston: Houghton Mifflin, 1981.

Time Travel

In these novels, characters actually travel through time--most often going into the past--and interact with those who lived before them, usually providing assistance in some way. They return with greater insight regarding themselves and their family situation.

The Druid's Gift by Margaret J. Anderson. NY: Alfred A. Knopf/Borzoi Books, 1989.

Twice Upon A Time by Allen Appel. NY: Carroll and Graf, 1988.

Another Shore by Nancy Bond. NY: Margaret K. McElderry Books, 1988.

Switching Well by Peni R. Griffin. NY: Macmillan, 1993. Also *A Dig in Time.*

A Wrinkle in Time et. al. by Madeleine L'Engle. NY: Farrar, Straus & Giroux, 1962.

The Lion, the Witch, and the Wardrobe by C.S. Lewis. NY: Macmillan, 1950.

The Root Cellar by Janet Lunn. NY: Charles Scribner's Sons, 1981.

Playing Beatie Bow by Ruth Park. NY: Atheneum, 1982. Also titled *Playing Beattie.*

Voices After Midnight by Richard Peck. NY: Delacorte, 1989.

Talons by John Peel. NY: Archway, 1993.

Pale Phoenix by Kathryn Reiss. San Diego: Harcourt Brace Jovanovich, 1994

Dreadful Sorry by Kathryn Reiss. San Diego: Harcourt Brace Jovanovich, 1993.

Time Windows by Kathryn Reiss. San Diego: Harcourt Brace Jovanovich. 1991.

Vision Quest by Pamela Service. NY: Fawcett Juniper, 1989.

The Reluctant God by Pamela Service. NY: Atheneum, 1988.

Building Blocks by Cynthia Voight.

The Devil's Arithmetic by Jane Yolen. NY: Viking Penguin, 1988.

Future/Past Time

What will the future be like? How is the past unchanging? What will people be like, and how will they live? In these novels, we discover that while the years change, human nature does not.

This Place Has No Atmosphere by Paula Danziger. NY: Dell, 1986.

Eva by Peter Dickinson. NY: Dell, 1988.

Z for Zachariah by Robert C. O'Brien. NY: Collier, 1974.

Interstellar Pig by William Sleator. NY: E.P. Dutton, 1984.

Grace by J.P. Walsh. NY: Farrar Straus Giroux, 1991.

Trapped in Time

Gifted with eternal life, these characters discover that this is not the wonderful blessing they had first thought it to be. Others are "trapped" through illnesses or circumstances that have caused them to lose time during their life.

Tuck Everlasting by Natalie Babbitt. NY: The Trumpet Club, 1975.

Locked in Time by Lois Duncan. Boston: Little, Brown, and Company, 1985.

The Other Side of Dark by Joan Lowery Nixon.

The Girl in the Box by Ouida Sebestyen. NY: Bantam, 1988.

Extraordinary Abilities

These characters possess characteristics that others do not (such as ESP) that allow them to perceive time differently. These characteristics may be positive or negative, depending upon how they are used.

Fade by Robert Cormier. NY: Delacorte, 1988.

The Third Eye by Lois Duncan. Boston: Little, Brown, and Company, 1984.

Secrets of the Shopping Mail by Richard Peck. NY: Dell, 1979.

Also Consider...

Historical Fiction

In these novels set in another time, students are able to view the world as it used to be, and make comparisons concerning the past and present.

Flashbacks

Many novels employ the use of flashbacks, where characters describe scenes and events from their past.

Sequels

As a newer trend in adolescent literature, many authors continue the stories of their characters in other books. Some suggestions of authors who write sequels:

M.E. Kerr, Paula Danziger, Cynthia Voight, Lila Perl, Thomas Rockwell, Robert Lipsyte, Paul Zindel, Robert Cormier, Sandy Asher, Lurlene McDaniel, Chris Crutcher, and James Howe.

Appendix B

Thematic Unit Survey

Undergraduate

What is a Thematic Unit?

Of 20 students, 7 were able to articulate knowledge of thematic units. Others were either completely unfamiliar with the term, or were unable to state the components of a thematic unit once the term was defined.

List the USD coursework in which thematic units have been taught/discussed:

Mentioned most often: SEED 452 (Reading in the Content Area). Also, Children's Literature, Adolescent Literature, Secondary Methods, English for Teachers.

Graduate

List the USD coursework in which thematic units have been taught/discussed:

Mentioned most often: SEED 652 (Reading in the Content Area). Also, Secondary Methods and Middle Level Education.

Graduate Requests:

Graduates request information for social studies units, and made a strong request for good units that can be taught in a regular classroom.

Appendix C

Student Perceptions of Time and Space

Think about all the things that have ever happened in the world and in your life:

1. What was the most important event in your life?

I was born	19
First day of school	12
Brother/sister born	7
Religious Experience	4
Family Experience	4
Sports	3
Personal Injury	4
Vacation/special event	4
Getting something	2
Talents	2
Birthdays	3
Basketball camp	1

2. What was the most important event in the world during your lifetime?

Oklahoma City Bombing	28
George Mickelson killed	3
Challenger explosion	2
Desert Storm	4
Atomic bomb	1
OJ Simpson Trial	2
American Spaceship met Russian shuttle	1
Gas Attack in Japan	1
President's being shot	1
Personal experience	19
Don't know	1

3. What was the most important event in the world ever?

World War II	17
Oklahoma City Bombing	7
World War I	5
Korean War	1
Columbus discovered America	2
Declaration of Independence	6
American Revolution	2

Challenger explosion	2
World Trade Center bomb	1
First man in space	1
Lincoln was killed	1
Discovery of Solar System	1
Personal experience	14
Don't know	2

4. If you could live in another time, when would it be?

When my parents were little	4
Prehistoric times	9 (When there were no dates, when dinosaurs lived, Jurassic Period)
Biblical times	2
1587	1
Old West	7
1700's	2
1800's	2
1950's	2
When Kennedy was shot	1
1983-1985	6
1944 (WWII)	3
1998	1
Future	18

5. If you could live in another place, where would it be?

Cities in US	8
States in US	28
Other countries	11
Africa	1
Outer space	5
In a mansion in Chicago	1
Indian country	1
Beach	1
Caves	1
In the country	2
Deserted island	1
Alcester	1

6. Have you ever read a book where the characters travel through time? What was the name of the book?

Indian in the Cupboard	19
Back to the Future	3
Lion, Witch & Wardrobe	5

Magic Schoolbus in Space	2
Devil's Arithmetic	
Dinosaurs before Dark	
Back to the Titanic	
Say Cheese and Die	
George Washington's Socks	
Alistair in Time	
Figgs and Phantoms	
The Beast	
Charlie and the Elevator	
Power Rangers	
A Trip into the Solar System	

Movies

Stargate	4
Back to the Future	4

None	15

UNIVERSITY OF SOUTH DAKOTA LAW SCHOOL STUDENTS' PERCEPTIONS OF LAW-RELATED AND CIVIC EDUCATION

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Law-Related Education (LRE) is an alternative form of citizenship education. It's purpose is to instruct students on the law, the legal process, and the legal system. The goal is to create individuals that are knowledgeable and committed to the democratic process on which our country is based.

There has been limited research in the area of law-related education. Shaver (1980) commented on the small amount of research and that the research conducted employed poor methodology. In an effort to expand the available research base in law-related education, the South Dakota Center for Law and Civic Education has studied the perceptions of principals, teachers, and lawyers regarding law-related education.

In April, 1995, a study was conducted of law students at the University of South Dakota. Law students are an important part of the partnership that law-related education attempts to create between resource persons such as teachers and lawyers, judges, police officers, and law students. Therefore, an LRE study of law students is appropriate and has never been conducted in South Dakota.

Research Procedures

To determine the perceptions, knowledge, and involvement of South Dakota law students in LRE, a questionnaire was constructed. The questionnaire was distributed to all members of a required first and second year law school class. Due to the variety of classes available to third year law school students, the questionnaire was placed in third years students' mail boxes. A total of 214 law students were surveyed, the breakdown by year in law school was: seventy-nine first year students, seventy-three second year students, and sixty-two third year students. An 84% response rate was received. The data analysis is reported in percentages for each of the eleven questions. Open ended questions are reported in narrative form.

Findings

Table 1 shows the response rate of respondents by year in law school. The response rate breakdown was: first year students 100%,

second year students 86%, and third year students 60%.

Table 2 reflects law students' interest in law-related education training. The majority (73%) of law students were interested in some type of LRE training. Table 2a details the LRE training law students would be interested in attending. Forty-seven per cent (47%) preferred a one hour workshop, 25% preferred in class instruction, and 20% preferred a three hour workshop.

The number of law students who have been requested by teachers to present in the classroom is shown in table 3. Of the 170 students that responded to this question, forty had received a request to present in the classroom, this equates to 24% of the students. Of the students who responded yes a teacher had solicited their services, over half (53%) subsequently presented in the classroom (see table 3a).

Table 4 addresses the law students interest in presenting in the classroom. The majority (73%) of students were interested in presenting in the classroom. The grade level preference for presentation, as seen in table 5, was 9-12 grade (45%), 5-8 grade (31%), and K-4 grade (24%).

Table 6 specifies the concepts/issues best addressed in the classroom by law students. "Constitutional process" received the highest response rate, with over fifty percent (53%) of respondents identifying this area of study. The other two areas identified most often were "violence and the law" (43%) and "drug and alcohol abuse and the law" (41%). In the category of "other" "criminal procedure" and "juvenile justice system" were most often mentioned. Percentages did not equal 100% due to participants' ability to select more than one response.

Law students' perception of the importance of law-related education for kindergarten through high school students is represented in table 7. The responses were evaluated on a 4-point Likert scale, ranging from 1 (not important) to 4 (important). There was consensus among the respondents that law-related education is important.

Respondents were almost equally divided in their awareness of law-related education. Forty-two percent (42%) were aware of law-related

education and 58% were not aware of law-related education prior to this survey (see table 8).

Table 9 shows law students' perception of the importance of including Indian law in the school curriculum. Fifty-one percent (51%) of respondents perceived Indian law as important in the school curriculum, while 49% considered it unimportant.

Comments were received to the open ended question concerning the role of law students in law-related education. The following is a sample of the comments:

* Law students could be presenters in classrooms.
* Law students lack practical experience at this level.
* Awareness, consciousness raising could be done by law students.
* The lawyer like any other profession has a responsibility to share their profession with the community.
* Law-related education should be taught by "real" teachers in high school.

Discussion of Findings

A majority of the respondents considered law-related education to be an important part of the curriculum for kindergarten through high school. The constitutional process was chosen by over half of respondents as the concept/issue best addressed by law students in the classroom. As law students, this area may be one in which respondents have some expertise. The areas of violence and the law and drug and alcohol abuse and the law were also considered important. The relevance of these issues to students may have been a consideration in respondents' choice of these concepts/issues.

Almost three-fourths of the respondents were interested in receiving law-related education training, with the preference for either a one hour workshop or in class instruction for delivery of the training. These preferences would appear to be most appropriate considering the

law students' workload.

Respondents indicated they had been requested by teachers to present in the classroom; however, only half of those asked actually made a presentation to students. Respondents also expressed a preference for presenting to high school students. These findings may reflect a lower level of confidence for presenting to younger students and indicates a need for more training/materials to be made available for presenting law-related education concepts to elementary school students.

Although there is a significant Native American population in South Dakota, the respondents were almost evenly divided as to the importance of including Indian Law in the school curriculum. Since the question did not provide an opportunity to elaborate regarding the answer chosen, it is difficult to reach a clear conclusion regarding this finding.

Table 1

Years in Law School

Category	Total Surveyed	Frequency of Response	Response Percentage
First year	79	79	100%
Second year	73	63	86%
Third year	62	37	60%
Total:	214	179	84%

Table 2

Law Students' Interest in Law-Related Education Training

Response	Frequency of Response	Response Percentage
Yes	131	73%
No	48	27%

Table 2a

Law-Related Education Training Preferred by Law Students

Category	Response Percentage
One hour workshop	47%
In class instruction	25%
Three hour workshop	20%
None	8%

Table 3

Number of Law Students Who Have Been Requested by Teachers to Present in the Classroom

Category	Frequency of Response	Response Percentage
Yes	40	24%
No	130	76%

Table 3a

Law Students' Response to Teachers' Request to Present in the Classroom

Category	Response Percentage
Yes	53%
No	35%
No response	12%

Table 4

Law Students' Interest in Presenting in the Classroom

Category	Percentage
Yes	73%
No	27%

Table 5

Grade Level Preference for Presentation

Category	Percentage
K - 4	24%
5 - 8	31%
9 - 12	45%

Table 6

Concepts\Issues Best Addressed in the Classroom by Law Students

Response	Response Percentage*
Constitutional Process	53%
Violence and the Law	43%
Drug and Alcohol Abuse and the Law	41%
Electoral Process	21%
Other	11%

*Percentages will not equal 100% due to participants' ability to select more than one response.

Table 7

Law Students' Perception of Importance of Law-Related Education for Kindergarten Through High School Students

Frequency of Rank*			
1	2	3	4
2%	8%	43%	47%

*rank = 1 (not important) to 4 (important)

Table 8

Law Students' Awareness of Law-Related Education

Category	Response Percentage
Yes	42%
No	58%

Table 9

Law Students' Perception of Importance of Including Indian Law in the School Curriculum

Category	Response Percentage
Yes	51%
No	49%