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ABSTRACT

The purpose of the conference reported in this document was to promote the professional sharing of current educational issues, to provide a forum for dialogue concerning relevant educational topics, and to share University of South Dakota faculty research interests. The proceedings are comprised of 10 presentations: (1) "Japan Related Education in North and South Dakota Schools" (Robert Reinke and Robert W. Wood); (2) "Science for Native Americans: An Elementary School Teacher Inservice Project" (Paul B. Otto); (3) "How I Was Taught, How I Learned, and How I Plan to Teach Mathematics" (Constance L. Hoag); (4) "Computer Programming Contest Problems: Hypercard as a Tool for Student Preparation" (Deborah A. McAllister); (5) "A National Survey of University Reading Clinics" (Garreth B. Zalud); (6) "Stress! Who Me? Never!" (Maurine V. Richardson, James A. Richardson, and Donald L. Mattson); (7) "Doing Business in Taiwan: Going Beyond the Readily Observable Cultural Differences" (Lynne Roach and Hui-Ching Chang); (8) "The South Dakota Head Start/Public School Transition Project: An Overview" (Linda Good, Ray Thompson, Marilyn Urquhart, and Michael Madden); (9) "A Case for Implementing Law and Civic Education" (Roger Wolff); and (10) "What Methods are South Dakota Teachers Using To Teach Science in K-4 Public Schools" (Kathleen L. Matthew). (LL)

RESEARCH, ISSUES, AND PRACTICES

First Annual
Curriculum and Instruction
Research Symposium
Conference Proceedings
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SYMPOSIUM PREFACE

The Curriculum and Instruction Research Symposium was conducted on April 23, 1993 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, 1993

JAPAN RELATED EDUCATION IN NORTH AND SOUTH DAKOTA SCHOOLS

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In order to determine the status of teaching about Japan in the K-12 schools in North Dakota and South Dakota, a questionnaire was constructed and mailed to 900 principals of K-12 schools on November 19, 1992.

The questionnaire was constructed to determine if teachers were teaching units on Japan; if any of the schools have Japanese students enrolled; to determine if teachers would be receptive to teaching units about Japan; to determine how important it is to teach about Japan; to determine the availability of Japan teaching materials: to ascertain how literate students are regarding Japan; and, space for writing comments. Of the 900 surveys mailed out, 510 were returned for analysis.

After the information was received, percentages were calculated and rounded off for each of the seven questions. The first survey question asked, "Does any teacher in your school teach a unit on Japan?" Sixty percent of the elementary, junior high/middle level, and high schools in North Dakota and South Dakota did have units taught on Japan. Thirty-eight percent did not. Two percent did not respond to the question. Responses by school category and states are shown in Table 1.

The most common grade level for an inclusion of a Japan unit in the elementary school is grade 6 with grade 4 being the second most common level. On the junior high level, grade 7 is the typical grade placement. Grade 10 is the most common grade placement for teaching about Japan on the high school level. It should be noted that Japan units are being taught on all grades from grade 1 through grade 12.

The second question asked, "If a unit about Japan is being taught, is it part of the required curriculum, or is it optional?" Forty-one percent of the respondents stated that the teaching of a Japan unit was required. Twenty-seven percent stated that the Japan unit was optional. Thirty-two percent of the respondents did not respond to the question. See Table 2 for responses by school category and state.

"Do you have any Japanese students in your school?" was the third question asked of the principals. Eleven percent of the surveyed schools had Japanese students while 86% did not have any Japanese students enrolled. Three percent of the principals did not respond. The range of

numbers ofJapanese students is 1 student to a maximum of 12. A majority of the schools who reported having Japanese students had only 1, 2, or 3 students. Table 3 presents data by school category and state.

Question number four asked, "How receptive would your teachers be in teaching a unit dealing with Japan?" Thirty-six percent of the respondents thought their teachers would be mildly receptive, 32% very receptive, 21% somewhat receptive, and 5% not receptive. Six percent did not respond to the question. Table 4 shows the information by school category and state.

As indicated in Table 5, when asked how important do you think it is to teach about Japan, 48% thought it was mildly important, 27% very important, 17% somewhat important and 5% not important. Three percent of the principals did not respond to the question. Data in Table 5 is reflected by school category and state.

The sixth question asked, "How available are Japanese teaching materials for your school?" Fifty percent of the principals reported they are somewhat available, 26% said not available, 18% available, and 3% stated that Japanese materials are readily available. Three percent of the principals did not respond. Table 6 indicates responses by school category and states.

The seventh and final survey question asked what is the students' literacy level of Japan? Fifty-three percent thought that the students were somewhat literate. Thirty-three percent said the students were not literate. Ten percent reported that their students were mildly literate, and 1 percent stated they were literate. Three percent did not respond to the question. Table 7 reflects responses by school category and states.

COMMENTS

Comments accompanying survey responses ranged from those highly supportive of teaching about Japan to those that totally rejected it. A sampling of comments starting with those that are negative followed by those that are positive follows.

* With all that we need to teach, an entire unit on Japan would put our curriculum out of balance.
* Japan is not more important than any other nation.
* This is one of the silliest survey topics I have ever seen.
* Japan is an economic enemy of the United States. Students need to know that protective tariffs should be made to regulate trade with Japan.
* With pressure to teach many things, I would place the teaching about Japan as a low priority.
* We will be having a Japanese intern here for three weeks in January-February, 1993. The intern will visit all of our classes K-6.
* We would be pleased to receive information on how to teach about Japan and where to locate materials.
* We need to do more educating about the Japanese, their history, and their language.
* I am pleased to learn that something is being addressed regarding Japan. Students in my school enjoyed learning about Japan.
* I feel that we need more intense study of this area.

In synthesizing the comments, it appears that a majority of the comments were quite positive about teaching aboutJapan. There is a polarity regarding the comments. The comments were either quite negative or positive. The state of North Dakota is apparently involved in a Japanese internship program. Several principals stated that a Japanese intern had been or would be coming to their schools.

CONCLUSION

A majority of the elementary, junior high, and high schools in North Dakota and South Dakota are teaching units on Japan. These units are generally required. The schools in both North Dakota and South Dakota generally do not have any Japanese students enrolled. If schools have Japanese students, they are few in number. The principals believed a majority of the teachers in their schools would be receptive to teaching a unit on Japan. A majority of the respondents believed that it is mildly to very important to teach about Japan in the Schools of North Dakota and

South Dakota.

There is a problem when it comes to the availability of Japanese materials for the schools. A majority of the principals stated that materials are either not available or somewhat available. The students in the K-12 schools of North Dakota and South Dakota apparently are not very literate about Japan as perceived by the principals.

In conclusion, it appears that units of instruction are being taught in the schools of North Dakota and South Dakota; that most of the K-12 schools in North Dakota and South Dakota do not have any Japanese students enrolled; and, the principals believed teachers are moderately open to teaching about Japan. The principals generally do believe it is mildly important to teach about Japan; that the availability of Japanese teaching materials is somewhat limited; and the students' literacy of Japanese is lacking.

Table 1. Do Teachers Teach Units on Japan?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Yes	64%	50%	48%	65%	68%	68%	60%
No	34%	40%	52%	35%	32%	32%	38%
No Response	2%	10%	0%	0%	0%	0%	2%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 2. Are Japan Units Required Or Optional?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Required	42%	40%	35%	27%	53%	47%	41%
Optional	33%	10%	20%	47%	29%	26%	27%
No Response	25%	50%	45%	26%	18%	27%	32%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 3. Are There Japanese Students In Your School?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Yes	5%	30%	7%	6%	6%	11%	11%
No	94%	60%	92%	93%	91%	89%	86%
No Response	1%	10%	1%	1%	3%	0%	3%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 4. How Receptive Would Teachers Be About Teaching A Unit On Japan?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Not Receptive	2%	10%	14%	2%	0%	2%	5%
Somewhat Receptive	18%	20%	24%	28%	9%	30%	21%
Mildly Receptive	44%	10%	40%	31%	56%	37%	36%
Very Receptive	30%	40%	20%	38%	35%	27%	32%
No Response	6%	20%	2%	1%	0%	4%	6%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 5. How Important Is It To Teach About Japan?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Not Important	1%	10%	9%	5%	0%	6%	5%
Somewhat Important	23%	0%	26%	15%	12%	23%	17%
Mildly Important	45%	50%	46%	47%	47%	54%	48%
Very Important	26%	30%	18%	31%	41%	16%	27%
No Response	5%	10%	1%	2%	0%	1%	3%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 6. How Available Are Japanese Materials For Your School?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Not Available	28%	20%	35%	26%	15%	34%	26%
Somewhat Available	50%	50%	53%	48%	56%	42%	50%
Available	18%	20%	11%	19%	26%	16%	18%
Readily Available	1%	0%	1%	6%	3%	4%	3%
No Response	3%	10%	0%	1%	0%	4%	3%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

Table 7. What Is The Students' Literacy Level Of Japan?

	North Dakota			South Dakota			
	ES	JH	HS	ES	JH	HS	TSD
Not Literate	34%	30%	38%	37%	32%	29%	33%
Somewhat Literate	55%	60%	45%	48%	50%	61%	53%
Mildly Literate	7%	0%	15%	13%	18%	5%	10%
Literate	0%	0%	2%	0%	0%	3%	1%
No Response	4%	10%	0%	2%	0%	2%	3%

ES = Elementary Schools
JH = Junior High/Middle Schools
HS = High Schools
TSD = Total School Districts

SCIENCE FOR NATIVE AMERICANS: AN ELEMENTARY SCHOOL TEACHER INSERVICE PROJECT

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Elementary School teachers from the Wagner, Lake Andes, and Marty Indian School in South Dakota were involved in the project. The **purpose of the project** was to improve the science teaching skills of the elementary school teacher (K-8) in schools with high concentrations of native American student populations through

1. a one-week summer inservice training workshop on the campus of the University of South Dakota
2. mail-loan of science materials and equipment throughout the 1991-92 academic year
3. nine inservice sessions in the collaborating schools during the academic year.

Invitations were mailed to all of the elementary school teachers in the three project schools. Twenty elementary school teachers were accepted for the project activities. All attended a one-week workshop on the campus of the University of South Dakota. The participants were introduced to the concept of hands-on science, utilizing the Robert karplus LEARNING CYCLE strategy consisting of the sequence for teaching science lessons of: (1) EXPLORATION, (2) CONCEPT INTRODUCTION, and (3) CONCEPT APPLICATION. specific time was devoted to practice lessons based on the LEARNING CYCLE utilizing the participants textbooks. The efficacy of the LEARNING CYCLE is research-based, indicating that hands-on science activities are effective if based upon a specific teaching strategy.

Dr. Wayne Evans, of Lakota heritage, who speaks fluent Lakota, as well as English, spent time each day developing the background of the participants in the unique tenets of the native American culture, describing student identification in respect to the degree they have bought into the traditional native American culture, and reinforcing the idea of teaching science through hands-on activities. Misty Brave, a 1990 Christa McAuliffe Fellowship winner and a biology teacher at Kyle Little Wound School, Kyle, South Dakota, involved the participants in science activities from a native American perspective.

The project director led the group through LEARNING CYCLE planning activities, science activities, and the integration of science and mathematics activities using the **AIMS** materials (Activities for the

integration of Mathematics and Science, Fresno, California). Within the summer workshop, the participants were involved in a **Project Wild** miniworkshop, conducted by Project Wild-trained representatives, and a **Project Learning Tree** miniworkshop, conducted by the Project Director. As a result of these miniworkshops, the participants were supplied with teachers guides for both Project Wild and Project Learning Tree for use in their respective schools.

The scheduled inservice meetings held during the academic year were rotated from project school to project school. A graduate student and the Project Director conducted the meetings. Teacher assignments were given each month, to teach two lessons, taken from the project activities, in their respective classes. At the monthly meetings, the teachers shared their classroom activities in teaching the lessons, as well as student projects. In all cases, the teachers reported their students enthusiastically immersed themselves in the lessons, often to the surprise of the teachers. The practical evidence convinced the teachers that hands-on science teaching is a superior way to teach science. At each meeting, the teachers also participated in 2-4 new activities in science and mathematics which increased their repertoire of hands-on science activities as well as their science knowledge. During the spring semester, the activities centered on **physical science** activities, especially in the areas of **electricity** and **magnetism**, in answer to comments placed on the summer workshop evaluations, and teacher questions.

The response to the project by both the participants and their school principals was highly positive. The teachers responded to the evaluation of the summer workshop on a scale of 1 - EXCELLENT to 7 - POOR, with an average rating of:

The organization of the workshop was:	1.7
The learning activities presented were:	1.2
My attendance at this workshop should prove to be worthwhile:	1.2
Overall, I consider this workshop:	1.3
I would like to have another workshop from this presenter(s):	1.2

The three principals responded to an end-of-the-year questionnaire as follows:

1. Changes in behaviors of your teachers in respect to science teaching, especially to native Americans

   a) The teachers display a much more positive attitude toward the science area. This improved attitude had led to better teaching behaviors.
   b) There was a lot more hands on type activities planned for the classroom. It also increased the amount of interest of all students in the classes where this was done.
   c) The teachers have shown more interest in science. They are doing more projects in science in the rooms.

2. Teacher attitude toward the teaching of science

   a) Teachers have increased interest in science. They are losing the idea "science is ok, but not for me."
   b) The teachers were very much encouraged by the response that the children have to the new methods and type of planning. The preparation time was seriously increased with the "hands-on" teaching. This is good for some teachers because it raised their interests.
   c) Much improved.

3. Student-involvement in science

   a) the students are more enthusiastic about the lessons that have come out of the coursework the teachers have taken than they ever were about the textbook series.
   b) Student involvement was greatly increased as a result of more hands-on learning activities. Students' grades were raised as a result of the new found interest.
   c) The students like the hands on projects. Things they can see & manipulate are much more interesting.

4. Any observations, feelings and recommendations concerning

the project you wish to share

a) The hands on projects. Much more interesting for teachers and students.

b) I do not personally believe that there is a difference between Indian (Native America) students' abilities and ways of learning as compared to any other race. This has been a major thorn in my side for years. To suggest that Indians learn differently than whites -- especially when 95% of our students are at least 75% white and probably only 25% Indian -- is insulting and I believe a grave injustice to the race. All students can learn and gain a lot from hands-on teaching. It is just one more way to teach -- one of many that a good teacher uses daily to reach all the children in his/her class.

c) I am enthusiastic about the project and hope that it will develop into more concrete curricular changes as our school enters the planning year of the science foundation grant (editorial note: NSF Systemic Initiative).

Approximately one year later, a questionnaire was mailed to all of the participants in the project. Pre-addressed, postage-paid envelops were included in the mailing. Only eight of the 20 participants responded. The distribution of responses to the questions follows.

1. I am presently using the things I learned in the Project:

Not At All	Very Little	Some	Considerably
3	1	2	2

If not at all, is it because you do not now teach science?

All three teachers who responded Not at All, as well as the one teacher who responded Very Little, stated it was because they do not now teach science. Responses from these teachers in respect to question #2, "Would you please make a statement as to how you feel about the project?" was quite positive:

1. I think if I were teaching science, I would be able to incorporate more of the project.
2. I feel the project was very worthwhile and if I taught science I would be using the things I learned in the project.
3. I learned a lot and enjoyed the 2 weeks in Vermillion, however the once a month meeting were just too much with all the other pressures at school and just seemed to drag out a good thing too long.
4. I believe the Project was good for all (all underlined three times) students. Most Native Americans in our classes respond just like everybody else.

The teachers who responded to Question #1 with Some or Considerably, responded very positively to Question #2:

1. I feel the project was very worthwhile. I rely on a lot of the basics I learned. I even present material in my class differently because of the project.
2. It has made me aware of how children learn more by doing "hands-on"s type activities, in all subject areas.
3. The project was beneficial in two main ways. First it improved my science curriculum by adding more hands-on activities and stimulating interest. Secondly, the project was a stimulus for our cooperative applying for its own NSF grant. The project is a superb class.
4. I am really glad I participated in the Project. I feel that I use a more hands on approach to teaching science.

The overall responses to the project, one year later, were quite positive. Even the teachers who do not now teach science, still view the project in a positive light. However, the writer found it somewhat disconcerting, that, even though they do not now teach science, they did not volunteer that they are using project concepts and materials in the other classes they teach. This is in view of the Project providing them with training in Project Learning Tree and Project Wild, both environmental education programs which incorporate social and cultural awareness, and include a number of simulations and games. The teachers involved in the academic year follow-up sessions of a subsequent project

on the Pine Ridge, South Dakota Indian reservation, shared a number of classroom lessons in which they utilized Project Learning Tree and Project Wild activities in non-science classes. They were very enthused with the reception of the children in such activities.

SUMMARY

The hands-on teaching of science was very well received by the participants in the project as well as their supervising principals. The Project Director had many manifestations of the value of teachers using the LEARNING CYCLE in the teaching of science. The teachers in the project seemed to be genuinely amazed in the way their students enjoyed the science activities. The academic year sessions reinforced the teachers in utilizing the ideas developed during the summer workshop and provided further inservice in science knowledge. This reinforcement appears to be very necessary to keep the elementary teachers on-track in using hands-on science teaching. However, on the downside, as one teacher indicated on the follow-up questionnaire, other responsibilities made the academic year inservice meetings somewhat of a burden. Only the teachers enrolled for graduate university credit continued to attend. The meetings were held after school, after the teachers had put in a full day of teaching, and had personal and professional responsibilities after the sessions.

The remarks by one principal, seriously questioning the uniqueness of the learning styles of native American children are worth contemplating. This writer has run into similar observations from a number of sources. What empirical evidence exists that native American children learn science better through hands-on activities? This is an interesting thesis indeed. However, the present project was not designed to preclude caucasian students being taught science through hands-on activities. The literature is replete with the efficacy of such. The project was designed in recognition that very few native Americans enter the science and engineering fields, or the science teaching field. It was hypothesized that hands-on activity science teaching, and the recognition that science is not the domain of the dominant culture, would raise the interest level of native American children in the field of science.

HOW I WAS TAUGHT,
HOW I LEARNED,
AND
HOW I PLAN TO TEACH MATHEMATICS

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Educators, parents and the public agree that mathematics is a prime area of educational importance. This importance is reflected in the tabulations reporting mathematics is second only to reading in the amount of time scheduled in the elementary classroom, and also is second only to reading in the amount of money spent on curricular materials (Suydam & Osborne, 1992). Mathematics methods, experiences and content became a target of public attention following the Soviet Sputnik challenge to United States leadership in mathematics, science and technology. Cries were heard urging educators to return to the "back to the basics", focusing on memorization, drill and practice (Kamii, 1985).

Following the Sputnik challenge educators, parents and the public debated issues of desired curriculum and methodology. A call for curricular change brought concerns about what change, and/or how much should/could be incorporated into the existing mathematics system. Reformists suggested new goals were needed for students to cope with the information society. Other individuals hesitated to alter the established procedures. Reys, Suydam and Lindquist (1992) addressed this issue by acknowledging that when a curriculum or program has been in place for an extended period of time, people tend to consider that methodology, content and sequence to be "proper", and any suggestion of change involves a struggle for acceptance.

Leadership came from The National Council of Teachers of Mathematics (NCTM) and in the development of guideline standards. The authors of first standard (1989) stated, "Inherent in this document is a consensus that all students need to learn more, and often different, mathematics and that instruction in mathematics must be significantly revised." The documents, the *Curriculum and Evaluation Standards* (1989) and *Professional Standards for Teaching Mathematics* (1991) provided unprecedented national direction and support for a more constructivist approach to the teaching and the learning of mathematics (Feldt, 1993). The constructivist's propose that ideas are not isolated in a memory bank, but are organized and associated with prior experience, thus requiring active learning and active participation on the part of the learner (NCTM, 1989, Kamii, 1985). Among the suggested goals for increased activities included the use of manipulatives, while reliance on paper/ pencil activities, role memorization and repeated practice should be decreased

(Feldt, 1993; NCTM, 1989; NCTM, 1991; Kamii, 1985).

Authors of the Professional Standards for Teaching Mathematics (1991) recognized that "the kind of teaching envisioned in these standards is significantly different from what many teachers themselves have experienced as students in mathematics classes" (p.2). As students, the common experience was viewing and practicing a mathematics body of static rules, skills, definitions and algorithms that had been memorized and mastered to the point of instant recall of fragments (NCTM, 1989). In addition to mathematics being static, students were passive and teachers were teaching only when they supplied information (Feldt). The NCTM reports teachers to be the key figure in changing the ways and methods of emphasis in which mathematics is taught and learned in schools (1989). Therefore, some of the obstacles for change that teachers and future teachers bring to the mathematics classroom are related to personal beliefs and experiences.

Teacher's beliefs about how mathematics is taught and learned is reflected in each teacher's classroom curriculum, methodology, practices and experiences (Reys, Suydum & Lindquist, 1991). The National Council of Teachers of Mathematics states that what a student learns depends on how he/she learned it (1989, p. 5). Teachers and future teachers may perpetuate the beliefs, and practices they experienced as students. However, recalling and understanding past practices or experiences may provide the base from which change can take place in future mathematics teaching and learning.

PURPOSE

The purpose of this study was to assess preservice students in education methods classes at the University of South Dakota to determine methodologies by which they were taught or experienced mathematics in elementary school and in college classes. In addition, this study assessed the anticipated teaching experiences preservice teachers plan to provide learners when teaching mathematics in the elementary classroom. This study sought to compare specific increase/decrease guidelines of NCTM (1989, 1991) and other constructivist methodologies (Feldt, 1993; Kamii, 1985) with past experiences and future or anticipated methodolgies.

METHODOLOGY

A one page check-off survey was developed with three categories, 1) **How I was taught and learned mathematics** (ELEMENTARY STUDENT), 2) **How I was taught and learned mathematics** (COLLEGE TRAINING), and 3) **Future intentions** (PLAN TO TEACH MATHEMATICS). The nineteen examples of curriculum materials, practices and methodology were provided to each respondent for all of the three categories, with written and verbal encouragement provided by the researcher for the respondents to include other categories of experiences. Random order of the nineteen experiences was used. The experiences listed were texts, workbooks, worksheets, paper/pencil, chalk board, charts, lecture, sharing, participatory, group work, only individual work, cooperative learning, combo individual/group work, learning centers, manipulative, Cuisenaire rods, pattern blocks, unifix cubes and tests.

POPULATION

Fifty seven (n = 57) pre-service education students (8 males and 49 females) attending methods classes at The University of South Dakota completed the checklist. Each respondent was encouraged to mark all past educational experiences, and all anticipated experiences in each of the three categories. Further, each respondent was urged by written direction and orally, to add categories to the provided list.

REPORTING OF DATA

The results of this study are reported by numerical responses in each category. Tables having entire categorical lists are divided in increments of tens for analysis.

RESULTS OF THE ELEMENTARY SCHOOL EXPERIENCES

Most Experiences in Elementary School: Table 1 reports worksheets (57), paper pencil (56), tests (55), chalk board (54), workbooks (49), texts (48), and lecture (41) received the most responses. It should be noted all

respondents (57) reported having had experiences in the elementary school with worksheets.

Fewest Experiences in Elementary School: Table 1 reports of the fifty seven repondents only 5 had been taught with the use of Cuisenaire rods, while 6 reported having experienced learning centers and/or unifix cubes in the elmentary school. Other fewer past experiences included, maniulatives (9) and pattern blocks (10).

Planned Increased Usage When Teaching: Table 2 reports planned changes in the methodology and curriculum for the future teaching as compared to the way the respondents were taught in the elementary school. Forty eight more individuals plan to use learning centers than had the learning center experience in the elementary school. Other high scoring anticipated additional practices were pattern blocks or cooperative learning (33), Cuisenaire rods (32), manipulatives and/or unifex cubes (31), sharing (26), combination of individual/group work (20), and group work (18).

Planned Decreased Usage When Teaching: Table 3 finds the highest planned de- crease of usage to be in the experience of workbooks. Thirty two fewer individuals plan to use workbooks than were taught by the use of workbooks. Other practices to be decreased were, worksheets (16), and lecture and/or only individual work (15).

RESULT OF COLLEGE TRAINING EXPERIENCE

Most Experiences in College: Table 4 records every respondent reported lecture (57) to have been a college mathematical experience. The next highest tabulated responses were, tests (53), texts (53), paper/pencil (53), chalk board (50), only individual work (37), and worksheets (28), participatory (27), group work (22), charts (21) and sharing (21).

Fewest Experiences in College: Table 4 reports of the fifty seven respondents, only 2 experienced learning through Cuisenaire rods. Other fewest college experiences followed; 3 college students had experienced mathematical learning through pattern blocks and/or unifix cubes, 5

manipulatives, 6 learning centers, and 7 workbooks.

Planned Increased Usage When Teaching: Table 5 finds 48 more individuals plan to use the learning center experience than had that experience in their college classes. Other high ranking experiences to be added to the curriculum in the future are: pattern blocks (40) and cooperative learning (38), Cuisenaire rods and/or manipulatives (35), and unifix cubes (34), sharing and/or combination individual/group work (31), group work and/or participation (25).

Planned Decreased Usage When Teaching: Table 6 records the most respondents (31), reported planning to decrease the use of the lecture method and (29) plan to decrease teaching mathematics through only individual work. One category and response reportedly were identical, the number of individuals having had the experience of tests (53) in college, reportedly plan to use tests (53) when teaching elementary mathematics.

COMPLETE LISTING OF TEACHING PLANS

Table 7 finds the numerical listing reporting from the most to the fewest planned experiences. The highest anticipated experiences were chalk board (55), learning centers (54), cooperative learning and tests (53), participatory and sharing (52), a combination of individual/group experiences (51), paper/ pencil (49), group work (47), and texts (45). Table 7 shows pattern blocks (43), worksheets (41), manipulatives (40), charts (38), Cuisenaire rods and unifix cubes (37), lecture (26), workbooks (17) with the least planned activity, only individual work (8).

This study surveyed fifty-seven preservice teachers in elementary methods classes at The University of South Dakota to determine how they were taught, and learned mathematics in the elementary school, and how they were taught, and learned mathematics in college. In addition, the study compared past experiences with plans for future practices. The literature on the influence of past experiences, the tendency of teachers to teach the way they were taught, and the documents of The National Council of Teachers of Mathematics (1989, 1991) and others (Feldt, 1993; Kamii, 1985) provided the stimulus and direction for this study.

The elementary experiences receiving the highest responses for past experiences were worksheets, paper/pencil tasks, chalk board, workbooks, tests and lecture. All respondents (57) recalled learning/being taught in the elementary classroom use of worksheets. Cuisenaire rods, unifix cubes, learning centers, manipulatives, and pattern blocks reportedly had been used least in prior learning processes.

The college training had involved lecture, tests, texts, paper/pencil and chalk board experiences. In college courses, there had been an consistent use of lecture (57) and an absence of cooperative learning, workbooks, learning centers, manipulatives, pattern blocks, unifix cubes and Cuisenaire rods.

The most noticeable contrast can be found between reported past experiences and future intentions. The preservice teachers plan to provide learning centers experiences to their students, as well as pattern blocks, cooperative learning, Cuisenaire rods, manipulatives, unifix cubes, sharing, and combo individual/group work. The past elementary and college experiences planned to decrease experiences with workbooks, worksheets, lecture and only individual work. Respondents plan to retain the use of tests. The researcher finds it most alarming that no respondent added the categories of calculators/computers or any other items to the provided list.

FUTURE STUDY

Further study is needed. Continued surveying of the preservice teachers would provide a greater number (n) for research. Seeking to determine the reason no one added computers or calculators or other items to the listing would be interesting information. A longitudinal study to be completed two and five years after the respondents become classroom teachers will seek to determine if the intended practice becomes actual practice. Additionally, this follow-up study will seek to determine if teachers succumb to teaching using only the experiences by which they were taught and learned in elementary school and college courses, and if so, why.

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Table I

Rank Order of Elementary School Experiences

	Elementary Student	College Training	Plan To Teach
Worksheets	57		
Paper/Pencil	56		
Tests	55		
Chalk board	54		
Workbooks	49		
Texts	48		
Lecture	41		
Participatory	38		
Combo individual/group	31		
Group work	29		
Charts	27		
Sharing	26		
Only individual work	23		
Cooperative learning	20		
Pattern blocks	10		
Manipulatives	9		
Learning centers	6		
Unifix cubes	6		
Cuisenaire rods	5		

Table 2

Highest Totals of Planned Increased Changes Compared to Elementary Experiences

	Taught	Plan To Teach	Difference
Learning centers	6	54	+ 48
Pattern blocks	10	43	+ 33
Cooperative learning	20	53	+ 33
Cuisenaire rods	5	37	+ 32
Manipulatives	9	40	+ 31
Unifix cubes	6	37	+ 31
Sharing	26	52	+ 26
Combo individual/group	31	51	+ 20
Group work	29	47	+ 18

Table 3

Highest Totals of Planned Decreased Changes Compared to Elementary Experiences

	Taught	Plan To Teach	Difference
Workbooks	49	17	- 32
Worksheets	57	41	- 16
Lecture	41	26	- 15
Only individual work	23	8	- 15

Table 4

Rank Order of College Experiences

	Elementary Student	College Training	Plan To Teach
Lecture		57	
Tests		53	
Texts		53	
Paper/pencil		53	
Chalk board		50	
Only individual work		37	
Worksheets		28	
Participatory		27	
Group work		22	
Charts		21	
Sharing		21	
Combo individual/group		19	
Cooperative learning		15	
Workbooks		7	
Learning centers		6	
Manipulatives		5	
Pattern blocks		3	
Unifix cubes		3	
Cuisenaire rods		2	

Table 5

Proposed Increased Changes in Teaching Compared to College Experiences

	College Training	Plan To Teach	Difference
Learning Centers	6	54	+ 48
Pattern Blocks	3	43	+ 40
Cooperative Learning	15	53	+ 38
Cuisenaire Rods	2	37	+ 35
Manipulatives	5	40	+ 35
Unifix Cubes	3	37	+ 34
Sharing	21	52	+ 31
Combo Individual/Group	19	51	+ 31
Group Work	22	47	+ 25
Participation	27	52	+ 25
Charts	21	38	+ 17
Worksheets	28	41	+ 13
Workbooks	7	17	+ 17
Chalk Board	50	55	+ 5
Tests	53	53	+ -

Table 6

Proposed Decreased Changes in Teaching Compared to College Experiences

	College Training	Plan To Teach	Difference
Lecture	57	26	- 31
Only individual work	37	8	- 29
Texts	53	45	- 8
Paper/pencil	53	49	- 4
*Tests	53	53	- +

Table 7

Rank Order of Planned Teaching Experiences

	Elementary Student	College Training	Plan To Teach
Chalk board			55
Learning centers			54
Cooperative learning			53
Tests			53
Sharing			52
Participatory			52
Combo individual/group			51
Paper/pencil			49
Group work			47
Texts			45
Pattern blocks			43
Worksheets			41
Manipulatives			40
Charts			38
Cuisenaire rods			37
Unifix cubes			37
Lecture			26
Workbooks			17
Only individual work			8

COMPUTER PROGRAMMING CONTEST PROBLEMS: HYPERCARD AS A TOOL FOR STUDENT PREPARATION

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A three part project is currently in progress, examining the organization of, classification of, and student preparation for computer programming contests at the secondary level. The purpose of this segment of the project is the development of a HyperCard stack which can be used as a tool in student preparation for solving computer programming contest problems. The demonstration of this stack was originally presented at the Association of Educational Communications and Technology national conference (Showcase of Achievement), Orlando, FL, 1991.

Computer programming tends to be overlooked within the secondary school curriculum, in favor of a more broad-based computer literacy, or applications, course. Aside from being an exercise in logic, computer programming forces the student to organize his ideas, in order to clearly present them to the computer for processing.

When participating in a computer programming contest, the student is expected to demonstrate some combination of programming skill, structure, and style, the importance of such factors varying with the contest. Contest participation is also meant to be a positive and rewarding learning experience for the student. Through adequate preparation, the student hopefully will view the contest as a positive experience, regardless of the number of problems solved or the final ranking of teams. This stack presents numerous problems for practice and examination, useful for contest preparation according to the above-mentioned skill requirements and ideals.

TYPES OF PROBLEMS

Contest problems can be divided into ten content areas: (a) computation, (b) mathematical functions, (c) string functions, (d) looping, (e) arrays, (f) formatting of input and/or output, (g) algorithms (Brown, Casci, Meegan, & Tebrow, 1989), (h) simulation (Piele, 1987), (i) patterns (Piele, 1983), and (j) mind benders (Piele, 1983). Content areas tend to overlap due to the intricate nature of programming, so there may exist only small differences between some content areas, perhaps later resulting in the elimination of some categories in favor of a smaller scheme.

Computation. Computation refers to a numeric problem. Some problems may be simple enough that other structures, such as loops and arrays, are unnecessary.

Mathematical functions. Computation problems may be expanded to include problems which make use of a computer's library functions, such as finding a square root or a random number, or calculating the integer portion of an expression for further use.

String functions. String functions, such as MID$, allow for the manipulation of characters within the program.

Looping. A loop allows for a sequence of programming statements to be typed once and executed many times.

Arrays. An array is needed when a fairly large amount of data must be recalled and manipulated. An array problem will generally include a loop of some type.

Formatting of input and/or output. Data can be entered into a program by a specified procedure, such as one data item per line; or more commonly, data is output according to given specifications, such as in the form of a bar graph, or in combination with symbols.

Algorithms. An algorithm generally refers to a plan for creating code to solve a computer programming problem. It might also refer to a manual trace of the statements in a program.

Simulation. A simulation tries to recreate an event. It does not have a correct answer (Piele, 1987), but the answer is expected to be within a general range.

Patterns. A pattern generation problem "requires the ability to nest one procedure inside of another," where "the outer loop controls the movement down the rows and the inner loop controls the printing across each column" (Piele, 1983, p. 24).

Mind benders. This type of "problem is intended to require a much higher

level of problem-solving ability." The student might "develop a procedure that varies," and therefore "must be generalized" (Piele, 1983, p. 25).

FEATURES OF THE STACK

The main and most important feature of the stack is the provision for studying previous contest problems. The student is initially able to choose one of the content areas, and then a particular problem within that area. For that problem, an overview, the solution, and sample output may be viewed upon request, with explanations provided for the programming code, again, upon request. The student is not locked into a given pathway, but is allowed to move from one content area to another. The use of MultiFinder allows the stack, BASIC, and Pascal all to be open at the same time. The implication for the student is that while he is able to view the problem, the solution, and the explanation in HyperCard, there is the added flexibility of being able to practice writing the code for the problem in a programming language, with an available reference concurrently on the computer screen.

In addition, the stack contains both a help section, which provides working definitions for the ten content areas, and explains the icons that are used; and a list of references from which material has been included. With the use of this stack, the student is able to prepare for contest competition independent of the teacher or his teammates. Different students are able to concurrently practice different types of problems. This allows a student weak in one or more areas to gain some needed experience, while other students work on areas of their own choosing. Likewise, it allows the student to become a specialist in one or more areas, with teammates undergoing similar preparation. This becomes an important team strategy for a contest at which all of the problems are presented simultaneously at the outset of the timed period, allowing the team's members to divide the problems according to each individual's programming strengths. Additionally, while using this stack for contest preparation, the teacher may be available as a resource.

MultiFinder allows for ease of transferal of information between Word, BASIC, Pascal, and HyperCard. The creation of additional cards, containing new problems and information, allow for the stack to be

continually updated. With a small amount of knowledge about HyperCard and HyperTalk, the teacher can customize the card for particular teaching and programming styles. Cards might also be organized with regard to a particular contest or year, as the emphasized content material tends to vary among contests and cycle between years.

Future additions to the stack might include sections about the other segments of the project: (a) particular contests, (b) judging, and (c) survey results. As a future project, a toolkit of ideas and techniques will be developed for use by the student programmer. All of the above-mentioned ideas should be combined into a healthy challenge and a meaningful reward for the student as a sophisticated programmer. Let's put the magic back into computer programming!

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A NATIONAL SURVEY OF UNIVERSITY READING CLINICS

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After searching the literature base, it was clear that concern about the lack of available information regarding operational procedures of university reading clinics voiced by Bates (1984) can still be stated today. Only a few studies have focused on identifying practices that occur in university reading clinics (Irwin & Lynch-Brown, 1988). Even so, many teacher preparation programs maintain some form of reading clinic that is utilized in the instructional training of teachers.

Questions about practices remain largely unanswered. At the University of South Dakota we wanted to explore the idea of developing a reading clinic that reflected current practices. This desire led to the development of a survey of practices which was distributed nationally in our hopes to identify personnel, clientele, fee structures, assessment instruments used, and resource materials found in many university reading clinics.

DESCRIPTION

Subjects and sampling procedure: In an effort to obtain data from a wide variety of reading clinics, three teacher preparation institutions with the largest student population in each state were identified as target locations to which our survey was sent. In some instances we knew that fewer than three possible sites existed and adjusted accordingly. Of the total number of surveys sent, which was 145, only 44 were returned completed. This represented a 30 percent return rate. Specific identifying information (the college/university name) was not included on the returned surveys.

Survey instrument: A 36-item questionnaire was used to survey the practices associated with operation of university reading clinics. The first 32 survey questions restricted the respondents' responses to specified categories. The last four questions were open ended questions.

RESULTS AND DISCUSSION

In an effort to organize findings for discussion, data were broke down into different sub areas -- (1) personnel, (2) fees, (3) clientele, (4) operational concerns - referral and duration of assessment, (5)

assessment, (6) assessment instruments, and (7) types of materials.
Personnel: Regarding personnel issues, several points can be made. First, 89 percent of the clinics were departmental in nature. Additionally, most (41 percent) of the respondents indicated that the reading education department was responsible for operation of the clinic. Elementary education followed with 23 percent. Twenty percent of the respondents indicated that duties were shared between/among several departments. The second area of concern relating to personnel focused on staffing. The results of the survey tended to support the following notions. First, the clinics that participated in the study were likely staffed by a single director and a full or part time secretary. Additionally, the director's position was likely to be a part time position. Additional help in the clinic was provided by a combination of both graduate and undergraduate students.

These results are similar to those of Bates (1984). His research indicated that three or fewer full time or part time faculty tended to be the "norm" for staffing clinics. He also stated that most clinics were operated by part time directors and diagnosticians. The fact that most clinics have a training mission (Irvin & Lynch-Brown) explains why much help is provided by graduate and undergraduate students.

Fees: Several questions on the survey addressed fees, financial support sources utilized in operating a clinic, and payments issues. The data collected indicated that 86 percent of the workers in clinics were either graduate or undergraduate students who were not paid for their services, but instead were completing course requirements.
Financial support for operation of clinics appears to be divided among the university, the department, and clients. In 27 percent of the cases, funding might be described as being 80 to 100 percent supported by the department. Gifts and grants do not appear to be an income source for clinic operation.

Findings were similar to those of Bates (1984) in that few private gifts or grants are used to fund clinics. Further, most of the funding source is divided between or among department, college, and clientele. Fees charged for services ranged from "no fees" up to and over $201.00. Some clinic directors reported that a sliding scale was used to establish

fees. In most cases it appears that a client is expected to pay a fee equal to or less than $50.00. The fees were most often charged for three items -- a completed case study, individual tutoring, and small group instruction.

Again, findings were similar to those of Bates (1984). He found that fees were slightly higher than this data suggested-- averaging $50.00 to $75.00. Also, he found charges for the same types of work -- the completed case study, individual tutoring, and small group instruction.

Clientele: A third area in the survey focused on who is served in university reading clinics. The responses seemed to indicate that not many pre-school aged children, high school aged children, college aged persons, or adult clients are being served. The most likely population served comes from elementary aged and middle school aged children. This information was similar to both Bates (1984) and Irwin & Lynch-Brown (1988). Both of these research studies tended to indicate that the majority of clients were elementary or middle school aged children. It should be noted that Bates indicated a larger population of high school clients than found in this survey.

Operational concerns -- referral and assessment duration: This section the survey focused on who was making referrals to the clinics and how long the client would be involved with the procedures at the clinic. The responses support the notion that educators make uup to 80 percent of the referrals. Parents make some of the referrals. Finally, not many referrals are made by medical personnel, attorneys, the clients themselves, or psychologists.

These results were similar to Bates (1984). His survey indicated that most of the referrals received by clinics at that time came from public schools. His results differed from ours in the degree to which he found referrals from college counseling services.

Once the referral has been made, most clinics reported assessment takes between four hours to about eight hours to complete. It should be noted, however, that about one-fourth of the responses indicated that the assessment period was longer than eight hours.

Assessment and tests reported as being used: In terms of assessment, most of the respondents indicated that a wide range of general areas were addressed in their clinics. Eighty-two percent of the clinics assessed a range of specific academic areas.

Several different standardized and informal tests were reported as being utilized in the clinics. The most frequently reported standardized test used were the Peabody Picture Vocabulary Test (used by 43 percent of the clinics), the Woodcock Reading Mastery Test - Revised (used by 25 percent of the clinics), and the Spache Diagnostic Reading Scales (used by 20 percent of the clinics).

Almost all of the respondents indicated that one or more informal reading inventory was used in their clinics. The most frequently reported informal reading inventory was the Burns and Roe Informal Reading Inventory (27 percent of the clinics) which was followed by the Reading Miscue Inventory (20 percent of the clinics). Other types of frequently reported informal assessment instruments/tests (see table 6) included basic sight word tests (18 percent), informal word attack tests (29 percent), and informal writing tests (20 percent).

The majority of the tests reported tended to treat reading as skills based. However, a few of the respondents to the survey indicated movement towards more authentic methods involving observation and reading/writing assessments. This finding is not unlike that of Irvin & Lynch-Brown (1988). They also found that the majority of clinics in their survey utilized published informal reading inventories.

Materials: The last area of the survey addressed the types of materials found in clinics. A wide range of materials was reported. Instructional books or materials were reported in 59 percent of the cases as being used in the clinic. Professional journals were often reported (48 percent of the cases). In 30 percent of the cases, the clinics contained and used instructional kits and computer programs. Twenty five percent of the respondents indicated they used trade books or magazines in their clinic. Also 27 percent of the clinics used video cassettes. Specific titles of different materials varied greatly form clinic to clinic.

CONCLUDING THOUGHTS

The fact that we several similarities existed between these findings and those of studies conducted earlier (Bates, 1984; Irwin & Lynch-Brown, 1988) supports the notion that some of the earlier issues and concerns raised by Bates and Irwin & Lynch-Brown have merit today. Clearly, there is a difference between some of the current theories of reading and the assessment practices reported by many clinics. More efforts like those of Farr (1992) are needed to help resolve these issues regarding assessment practices. Also further research is needed to establish best practices for university reading clinics. It appears as though there is an interest in clinics and there are many views as to what clinics could or should be, yet few studies have attempted to survey practices and procedures.

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STRESS! WHO ME? NEVER.

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Nothing in life is to be feared. It is only to be understood.
— Marie Curie

A student who is preparing to take an exam, or a professor preparing give an exam may describe stress one way. To the layperson, stress might be anything that creates pressure, tension and is undesirable (Leepson, 1984). Stress is the way in which the body responds to demands that are placed upon it (Sehnert, 1981). Investigations by Davis (1977), Fimian (1980), and Tager (1980), indicate that stress, in and of itself, is neither good nor bad, but rather dependent on the consequences of the individual's reaction to the (anxiety, stress, or pressure). Selye (1976) suggests that stress is the nonspecific response [emotional, physical, or psychological] of the body to any demands. The Berkeley Holistic Health Center describes stress as: *The reactions of the animal body to forces of a deleterious nature, infections, and various abnormal states that tend to disturb its homeostasis. Subtle, long-term, usually undetected tension. Pleasure and challenge, achievement and fulfillment, are positive forms of stress, as differentiated from distress. The latter constitutes assaults on the nervous systems that will, in time, lead to somatic breakdowns. Most of the self-imposed risks (alcohol, and drug addictions, cigarette smoking, pharmaceutical abuse, and mental disorders) which lead to chronic debilitation and premature death are traced to high stress levels.* (Berkeley Holistic Health Center, 1978).

Stress effects the body from within and without and effects the mind. There are various things that trigger stress--job, boredom, worry, working under unusual demands or conditions. Pine (1979), and Tager (1980) suggests that identification of the stressors is the first step in controlling stress, which fall into three main ares of stress: environmental, interpersonal, and intrapersonal (Hodges, 1976).

There are family, economic, and social stressors. Examples could be: pressure to succeed, "keep up with the Jones", changing male/female roles, and single parent families create stress that has been previously unseen.

Hodges (1978) suggests that environmental stress is an inanimate impactor in physical surroundings of the educator. Some of these could be:

illness, pollution (air, odor, and noise), light, over use of caffeine, tar and nicotine. Even the temperature can cause stress. Fimian (1980), and Hodge (1976) suggest that stressors include physical space including inclement weather, poor lighting and lighting control, poor heating, and cooling systems, outdated or no laboratory equipment, poor media equipment, lack of teacher work space, noise population, and room structure.

A person responds to stress in two ways *"fight or flight."* When the brain interprets something to be a stressor it prepares the body for either fight or flight by sending messages, via the nerves, throughout the body. When we come in contact with a stressful situation senses become keener, muscles tighten, heart and breath rate increase and more blood and oxygen reaches the muscles, brain, and vital organs. This is not bad. These changes are preparing the body for *"fight or flight."*

Stress can become harmful when there is no physical release. Physical or emotional illness can result because of stress that finds no release. Some illnesses that have been associated with excess stress are: heart disease, high blood pressure, diabetes, headaches, obesity, ulcers, backaches, asthma, arthritis, depression, anxiety, alcoholism, insomnia, diarrhea, constipation, colitis, sexual dysfunction, and menstrual problems.

One method of dealing with stress is through relaxation. Everyone's idea of relaxation in different. Yelling and cheering at a wrestling match or football game may not be relaxation. One form of relaxation is deep breathing -- take a deep breath, push your stomach out then let that air out, allow your stomach to collapse inward, forcing out the air. You can train yourself, by practicing breathing in this way, to feel the tension leave your stomach out. Let that air exhale and collapse your stomach inward. In a stressful situation, after practicing deep breathing, you can actually let your troubles go or escape when you breath out.

Progressive muscle relaxation is another stress reducer. In the 1950's, Dr. Wolpe expanded the work of Dr. Jacobson and that concept is still used today (Corsini & Wedding, 1989). In Progressive Self Relaxation (PSR) you teach your body to relax by tightening and releasing your

muscles. You learn to feel the absence of tension and learn to recreate that feeling (Rathus & Nevid, 1977).

Imagery or creative imagination is another method that can be used to reduce stress. In using imagery, you can learn to relax and refresh yourself by using your mind. In this exercise, close your eyes, clear your mind and then try to imagine your bedroom. Try to see your bedroom exactly as it is at home. Notice the pictures, the wallpaper, the order of the furniture. See your bedroom as it is with one exception. There is another door that wasn't there before. Go to that door, take the doorknob, open it, walk through and you will be in a new room of your house that wasn't there before. The room is totally empty. The room has three large windows. Look out one of those windows and imagine what you see. You may see the ocean, the mountains, palm trees, or a forest. You can go to it whenever you want to or need to - in your mind. It is a place of relaxation and refreshment (Ryan and Travis, 1981).

Another good stress reliever is the A, B, C Method of Rational Emotive Therapy (Ellis & Dryden, 1987). "A" represents the "activating event" or the event that causes you to start thinking. The "belief about the event" is indicated by "B." The "C" in the formula stands for the consequence". The event causes the consequence. If we change how we think about things, we will change how we feel about them. Thinking precedes feeling. By learning to dispute irrational beliefs, we can produce a better consequence and therefore we feel better or we feel less stressed.

Another way to handle stress is to improve self-esteem. Self-esteem can be improved by cognitive rehearsal. This exercise is as simple as listing your good points on cards. Each day concentrate on one of the cards that lists a good quality about yourself. When you feel better about who you are, you are better able to handle stress.

Stress can also be impacted by exercise. Cooper (1990) suggests that regular sub-maximal exercise three times a week will significantly positively impact on resting heart rate and blood pressure. Further, Davidson, and Davidson (1980) state that physical activity programs strongly promote the physiological and psychological benefits associated

with exercise (weight control, cardiorespiratory efficiency, strength, balance, flexibility, and increased ability to tolerate stress and tension). The keys to exercise are regularity, and intensity.

The first of three parts to physical activity is that the activity makes little difference (walking, running, swimming, cross country skiing, biking, or what ever), but three times per week makes all the difference. The important part is to perform an activity that will increase the heart rate, and that is enjoyable (Brown, 1974).

The second part is intensity. The cardiovascular system must receive some stress to be able refocus itself and receive relief. Intensity is best described in terms of heart rate or talk rate.

The third is to talk to someone while you are working out, if you can not carry on a conversation without difficulty - you are working too hard; if you have no difficulty at all carrying on a conversation - you are not working hard enough. This puts your body into a routine of anticipation of relief. While rechanneling the focus to the physical activity of choice will cause an increase in energy, and reduce the stress received from other sources.

There are warning signs to watch for that may suggest unsuitable amounts of stress: tense muscles; irritability; edginess; liability to relax; pounding or racing heart; losing the joy in life, change in appetite, increased use of tobacco, alcohol or drugs; overpowering desire to cry or run away.

Food can be one of the great experiences of life. It can be social, if 20 minutes or longer is taken to eat a meal, if there are others present and talking to one another, if there is gentle music in the background, if it is low in cholesterol, and if work is not the topic.

Some foods cause higher stress, and some handle stress. Some of those that impact negatively are: chocolate, salt, caffeine, sugar, and cholesterol. Foods that are high in gas content (raw apples, cucumbers, and baked beans) can cause physical and social difficulties. There are some foods that will help handle stress (legumes, bananas, dark green

vegetables, and carbohydrates.

Another way to alleviate stress is through reading. When it is done for a recreational purpose, it serves as a source of pleasure which reduces stress. An adult reader is one who enjoys reading and considers reading an important part of one's total life. This person reads widely and has a broad range of interests (Stronks, 1982). An avid reader is one who reads six or more books per year (Gallup, 1976). Middle-aged adults average reading 2.7 hours for leisure and job-related reading. As an adult reflects on his/her reading preferences he/she will discover they change through his/her life span (Stronks,1982). An investigation into the motivators for reading are entertainment, learn new things, to pass the time, to relax, and to escape from problems (Ngandu, 1980).

The following reading and writing activities are successful in eliminating stress. Book Sharing Groups can be a way of reducing stress. These groups can function in two different ways. First, all members of the group read the same book and share their feeling and perceptions. The second way is that each member of the group reads a different book, which he/she shares feelings, perceptions, and understandings.

Bibliotherapy is defined as the practice of using books to alleviate personal problems or improve mental health (Bromley, 1988). It consists if 1) identification is the real or imagined affiliation of the individual with the character in the story, 2) catharsis is when the reader feels he/she is the character and shares the motivations, conflicts, experiences vicariously and comes to understand the needs and aspiration, and 3) insight is seeing oneself in the behavior of the character and achieving an awareness of one's own motivation, feelings, and needs. Then bibliotherapy becomes a process of identifying with another character so that feelings are released and the individual becomes aware of his/her motivations and rationalizations for his/her behavior (Rubin,1978). Further, it can help a person understand he/she is not the first to encounter the problem he/she is facing and permits the reader to see that there is more than one solution to his/her problem or there is more than one choice to be made (Bryan, 1939). When a person is interested in reading about a particular concern such as retirement, aging, or death, the titles of the appropriate books may be found in the Fiction Catalog (1908-

1993).

Why use journals to reduce stress? Journals are like talking to one's self. It is a private, protected place and becomes an invitation to open up and explore what is in one's mind. Since the journal is less structured than other forms of writing, many people find it instantly inviting,and maybe even seductive. This quality often means that a person will write more frequently and for longer periods of time (Kirby and Liner, 1981).

There are several types of journals. The first type is the diary which is private and should be treated as such because a person tends to gush forth with trivia, emotions, and feelings (Kirby, and Liner, 1981). The second is the dialogue journal and is written between two people. They are carrying on a private conversation with each other about something of interest or concern (Cox, 1988). It can help alleviate stress and strain between two people that might not be able to discuss the situation face-to-face. The third is the reading log, and is used after reading a selection and than writes a reaction. The person is thinking aloud on paper and explores his/her feelings (Anderson and Lapp, 1988). This type of journaling would also be beneficial during bibliotherapy.

In conclusion, some psychological suggestions to handle stress: some physical suggestions in "How to handle stress" are: scream often, stick pencils in an acoustic ceiling, play hooky, finger-paint your office/ lover/boss, sweat profusely, shoot spit wads, pretending spaghetti is a finger food, pack up all your cares and woes, shop till you drop, make silly faces at passing motorists, practice snoring, refuse to have a nice day, play tic-tac-toe on your plaid clothing, or weep loudly.

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DOING BUSINESS IN TAIWAN:
GOING BEYOND THE READILY OBSERVABLE CULTURAL DIFFERENCES

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In approaching the cultural Other, it is important to have an in-depth understanding of business practices in other countries which goes beyond guidelines describing superficial and readily observable cultural differences in the absence of contextual information. Business conduct of a specific culture must be understood within its cultural context (see Hofstede, 1984).

There are two major reasons to move beyond observable differences in cultural behavior. First, identifiable cultural patterns are a manifestation of deep-rooted beliefs and unique conceptions about the universe as a whole and about human beings in particular (Benedict, 1934). Business interaction is but one part of the overall patterning of the culture. Second, the content of culture is actualized in members' everyday interaction. Culture is located in a specific time and place in its process of evolution and business conduct takes place as part of a configuration of cultural elements.

For these two reasons this study provides a more complex analysis of business conduct in a different cultural environment by examining how the distinctive patterns of Taiwanese business conduct are related to Chinese cultural heritage. To achieve this goal, characteristics of the Chinese cultural pattern will be outlined, several distinctive Chinese business practices in Taiwan will be discussed, and analysis of the data will be presented.

Data was gathered from an analysis of interviews of six members of the sales staff of a mid-sized computer company in Taiwan during December 1991 and January 1992. All interviews were conducted in Mandarin Chinese and were later translated into English. These interviews were performed as part of a research project funded by the University Faculty Development Grant, University of South Dakota, comprising extended interviews (ranging from forty minutes to three hours) of all thirty employees of the computer company. This case study pertains specifically to the relationships between salespeople and customers.

A major Chinese cultural characteristic which shapes the Taiwanese business environment is the principle that the individual does not exist by him-or herself. From the Confucian perspective, self is not defined by

itself, but rather is situated between people (Chan, 1963). Since human beings naturally have different degrees of emotion with people of varying degrees of closeness, different ways of interacting with people of different orders of relationships is seen as an expression of human nature. For this reason, patterns of interaction are to be observed according to different orders of relationships, and rights and obligations related to these orders of relationship serve to regulate society (Tu, 1985). The content of Chinese cultural life is heavily influenced by the Confucian perspectives where Chinese find themselves situated within a complex web of relationships, each involving different degrees of emotion (Fei, 1948; Hsu, 1970).

According to these observations, for Chinese, utilitarian relationships are inconceivable in pure exchange form: even the contractual basis of interpersonal exchange must be preceded by the establishment of contact and involvement in order to provide some emotional basis (Fried, 1974). This pattern of interpersonal relating has also been observed by Silin (1972) in Hong Kong: "Daily contact in the market and the repeated exchange of small favors can foster the mutual confidence between two unrelated people that provides the basis for more intimate association." (pp.339-340). Inasmuch as relationships can be purposefully pursued, frequent interactions also lead to the establishment of emotional ties upon which one can rely upon in the future.

The emotional and utilitarian nature of Chinese interpersonal relationships is what makes Chinese prefer to deal with human beings and define the importance of the issue within the context of interpersonal relationships, rather than to deal with the issue directly. Interpersonal connections have become the means by which Chinese construe the meanings of their social world.

As the interviewees' accounts are examined, it becomes clear that the relationship between the salesperson and customer underlies much of Chinese tradition. By exploring the ways in which the relationship is defined and engaged, an understanding of the overall patterning of Chinese cultural traditions is gained. Specifically, an examination will be made of how the salesperson-customer interaction is like making friends; how "friendship" implies responsibility; and, how establishing of relation

requires contact.

Defining the relationship between salesperson and customer as "like a friend" was unanimous with the salespeople. Doing business involves more than the product. Consideration of the nature of the person and the emotional element is emphasized. Prior to conducting business, cultivation of friendship and trust takes place through one's sincerity and consideration toward the customer. One interviewee explains it this way:

> If you have sincerity, he definitely will treat you like a friend. Whether you can conduct the business is another issue. If today I talk to you only for the purpose of doing business, I think it is unlikely that our business will be successful. If today I talk to you because I want to make friends with you, I want to solve problems for you, then you might have a better chance to succeed.

By defining the relationship as "friendship" the interaction goes beyond a simple business exchange. The "friendship" implies relational responsibility and the customer-friend may be able to introduce other friends to conduct business with the salesperson. Even in the business environment, relationships are cherished. One interviewee describes the emotional significance of making friends this way:

> ...How should I say...to be a salesperson is indeed an art. It is an art of interpersonal relationships...If you really feel the person is good, from your heart, then you can establish a friendship with that person....It is a major fortune in your life...better than money.

Friendship also implies responsibility on the part of the salesperson for his/her customers. All of the interviewees stated that most customers, when encountering problems with a product, will call the salesperson to help them rather than call the service department directly. This signifies the trust the customer places in the salesperson. It is a common feature in salesperson-customer interactions for the salesperson to arrange for repairing the product. If the salesperson simply tells the customer to call someone in the service department, this would be considered a symbolic rejection of the relationship between the customer and salesperson, which would cause the customer to reject the

salesperson forever.

Clearly, from these accounts, the issue is one of relationship. The way the company does business reflects Chinese cultural norms for human emotion and human relationships. The channels of communication and division of responsibility with the company are flavored by these cultural practices.

Relationships between the salesperson and customer are developed over time and nourished with much energy and work. Time is spent together in social activities to discover commonalities on which to build a friendship. Buying dinner is considered essential when establishing a working relationship with a customer. According to one interviewee, "It is easier to negotiate the relationship [at the dinner table]," even though "you never discuss business at the dinner table." Moreover, certain "face saving" procedures are followed, such as the choice of restaurant (the higher the position of the invited person, the better the restaurant), who is invited, and how often (sometimes both before a contract is awarded to "pull" the relationship and afterwards in appreciation).

The phrase "control your interpersonal relationships" was repeatedly mentioned in the responses of the interviewees and therefore can be assumed to be an extremely important issue in this business environment. In Taiwan the relationship between salesperson and customer is built up over long periods of time and sometimes can even be passed on from generation to generation. The ingredients of the friendship relationship keep old customers and bring in new customers, rather than advertising or sales pitches.

Regarding the relationship between the customer and salesperson, there are significant differences between Taiwanese and United States business practices. The first difference concerns interaction prior to the conduct of business. United States business practice is comparatively simple, straightforward and individualistic. The salesperson seeks out his customer through advertising and the emphasis is on selling the product. Taiwanese business is conducted through relationships and trust between the salesperson and the customer is what is emphasized.

Second, because of this distinctive conception of relationships, in

Taiwan the relationship between the customer and the salesperson is present prior to conducting business and continues even after the business is over. The salesperson also assumes responsibility for service to the customer after the sale. In the U.S. the opposite appears to be true--in most circumstances, the customer need not have any type of relationship with the salesperson prior to buying a product and after the deal has been closed, the customer may never come in contact with the salesperson again, especially to handle a service matter.

Finally, although "wining and dining" is a part of the customer "courtship" in the United States, it is handled more casually and the clear purpose of dining is to talk about business. In Taiwan, "wining and dining" is a means to establish relationships rather than to discuss business. Only after the salesperson has formed a relationship and gained the respect of the customer will business be discussed.

In this study, an outline of the ways in which salespeople relate with customers in a Taiwanese computer company has been presented. The definition of the relationship between the salesperson and customer is influenced by the Chinese tradition which views human emotion and orders of relationships as the most fundamental issue in the ordering of society. We can see that the cultural pattern reveals itself in business conduct and directs the ways in which a salesperson interacts with customers. By examining the cultural factors involved in the organizational environment, we are able to gain understanding of both the overall patterning of the culture and the complexity of context.

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THE SOUTH DAKOTA HEAD START/PUBLIC SCHOOL TRANSITION PROJECT: AN OVERVIEW

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The First National Goal states that "by the year 2000, all children in America will start school ready to learn." The National Association for the Education of Young Children (Willer & Bredekamp, 1990) and the National Association of Elementary School Principals (NAESP, 1990) have both advocated for new definitions of readiness---definitions that include laying the foundation for school success by preparing schools and teachers to respond to individual needs in a developmentally appropriate environment. Dorothy Rich (1988) points out the need for an infrastructure that involves parents in all aspects of their children's schooling.

One of the ways to build bridges to assure readiness and school success for disadvantaged children is to provide transition services between Head Start experiences and public schools. Transition may be defined as an ongoing process of mutual adaptation by children, families, schools, teachers, and stakeholders in the educational arena to the public school environment where educational goals, social goals, performance expectations, and opportunities are shared. The transition process involves preparation for the new experience, comprehensive support during the first few years of school, and positive expectations for future school environments to contribute to successful outcomes. However, a recent national study by Love and Logue (1992) recommends that:

> schools serving higher proportions of students from low-income families may need to exert special efforts to create preschool-kindergarten continuity, and school staff need a clearer understanding of developmentally appropriate practice (p124).

NATIONAL DEMONSTRATION PROJECTS

As a result of the success of the Head Start Program on the national level and studies such as those stated above, the U.S. Congress has mandated the National Head Start/Public School Early Childhood Transition Project. This project has been designed as a continuous and integrated array of comprehensive services for children and their families that begins at entry into Head Start and continues through at least third grade.

This is a two-generation program that serves both children and their parents.

SOUTH DAKOTA PROJECT

The South Dakota Head Start/Public School Transition Project is one of 32 national demonstration sites. The projects which are funded by The Administration on Children, Youth, and Families, (ACYF) and began in the fall of 1991 with a planning year. Program implementation began in the Fall of 1992 and will continue through spring, 1997. Each of the 32 sites is implementing two project components: a program component which will provide transition services from kindergarten through third grade to two cohort groups and an evaluation component which will collect national and local data.

PROGRAM

The South Dakota Project program component is administered by South Central Child Development Inc., (SCCD). The program component consists of four federally mandated elements:

1) Developmentally Appropriate Curricula---transitional activities, assessment procedures, activities related to the culture of the children, and inclusion of handicapped children;
2) Health---responses to health, immunization, mental health, nutrition, social service, and educational needs of students.
3) Parent Involvement---individual family support plans, home visits, family outreach and support, and parent involvement in the schools
4) Social Services---family service coordinators, home visits, provision of social services (including substance abuse treatment, education, and prevention).

RESEARCH AND EVALUATION

The evaluation component of each project has been charged by ACYF with gathering and analyzing a national core data set. Each site is also implementing a local evaluation plan. Both national and local research

efforts have been designed to provide information useful in improving program policy and implementation at both the national and local levels. The National Research Coordinating Team at Civitan International Research Center at the University of Alabama at Birmingham heads the national evaluation effort. InTEC, under the Educational Research and Service Center in the School of Education at the University of South Dakota, is the South Dakota site evaluator.

The national core data set consists of instruments, questionnaires and interviews administered to children, families, teachers, and principals. Additionally data is being gathered from school records and classroom observations. Local process and product data are also being collected. South Dakota has also received additional funding for in depth qualitative research.

RESEARCH QUESTIONS

Research questions to be addressed by both the national and local evaluation are as follows:

1. How successful is the program in achieving the commitment, participation, cooperation, and coordination of Head Start agencies, local education agencies, parents, other community agencies, and the community at large in the different types of communities with their different populations?
2. What kinds of problems are encountered in the planning and implementation process?
    a). How were these problems resolved?
    b). What are the barriers that hinder cooperative efforts?
3. What procedures, methods, and techniques work best for what types of participating children and families and under what conditions?
4. What aspects of the transition demonstration program maximize benefits for the child, the family, the Head Start program, the Local Education Agency, the community, and other community organizations?
5. Are children and families who participate in a Head

Start/Public School early childhood transition demonstration more likely to maintain and enhance early gains than children and families who attend a regular Head Start and elementary school program?

Dependent variables include: the child (academic performance/cognitive functioning, psycho-social adjustment, health), their families (participation in school activities, educational activities at home), and the program and school environments (quality of services delivered, success of Head Start/Public School collaboration). Independent variables include such variables as demographic characteristics, family functioning, services delivered to the child and his/her family, parents' and teachers' attitudes, Individualized Family Service Plans, and program variables.

METHODS

The national core data set was collected in the fall of 1992 and the Spring of 1993 for Cohort I. Data will be collected annually in the spring for Cohort I for through their third grade year. National core data will be collected in the fall and spring of the 1993-1994 school year for Cohort II. Then it will be collected annually in the spring for the remaining three years that cohort is followed (1995-1997). Local data will be collected through out the life of the project and will be processed focused while the national core data will be outcomes based.

POPULATION

The SCCD, Inc. catchment area covers sixteen counties where communities are primarily rural except for two small urban centers (Yankton and Mitchell). The majority of the population in the 16 county area is white. The largest minority group is Native American. About 37% of the families in the catchment area are identified as single parent households and 25% are identified as low income.

SAMPLE

Within the catchment area two clusters of schools were identified

and matched by the size of the school district, the number of Kindergarten classrooms in each school district, the number of Head Start students entering the Kindergarten classroom in the Fall of 1992, and the total number of children in each classroom. Five matched pairs were selected at random. One school in each pair was identified as the demonstration school and one was identified as the comparison school.

In the cohort one sample, 54 former Head Start children (and their families) were identified in ten demonstration kindergarten classrooms. The demonstration classrooms are in the following schools: Wagner, Corsica/Armour, Whittier Elementary School in Mitchell, Webster Elementary School in Yankton, and the Marty Indian School. In the demonstration group 48% of the families are low income; 76 of the children are white and 24 are Native American. The demonstration sample also contains an equal number of randomly selected classmates (and their families) who did not attend Head Start.

The control group sample consists of 41 former Head Start children in 13 different kindergarten classrooms in the following schools: Chamberlain, Lake Andes, Gregory, Eugene Field Elementary School in Mitchell, and Lincoln Elementary School in Yankton. In the control group 44% of the families are low income; 80% are white and 20% are Native American. Like the demonstration group the control sample also contains an equal number of randomly selected classmates (and their families) who did not attend Head Start.

NATIONAL CORE DATA SET

The data set used by all 32 sites is designed to be two generational. Children will be assessed with the Peabody Picture Vocabulary Test-Revised, the reading and math subtests of the Woodcock-Johnson Achievement Test, and What I Think of School. Information from parents will be obtained through use of the following instruments: Family Background Interview, Getting to Know Your Family, Your Child's Adjustment to School, Family Resource Scale, Family Routines Inventory (Modified), Parent Health: Depression Scale, School Climate Survey, Social Skills Rating System, Child Health Questionnaire, Parenting Dimensions Inventory, and Neighborhood Scales.

Data will also be collected form the schools. Teachers will be asked to fill out the School Climate Survey, the School Survey of Early Childhood Programs, the Social Skills Rating System, and the Child Health Questionnaire. The Principal of each school will complete the School Climate Survey and the School Survey of Early Childhood Programs. Information will be obtained from existing records by use of the School Archival Records Search and classrooms will be evaluated for developmental appropriateness through use of the Assessment Profile for Early Childhood Programs.

LOCAL DATA SET

Local data will be collected from children, families, teachers, community members and project staff with the following instruments: (1) the Service Delivery System Questionnaire, (a pre/post measure to assess changes in service delivery over time); (2) Community Profiles, (demographics of each community including size, population make-up, type and numbers of social services available, and community perceptions of the Head Start program and the school); (3) Student Tracking System, (who's where, where are they moving to, do they exit the project, do they return, if they return do they go back to their original school of to another school in the project); (4) Head Start Program Profiles by Community, (comparison of home-based and center-based Head Start programs on levels of readiness of child); (5) Parent Attitudes and Participation by Community,(a measure of parent involvement in school activities); (6)School Curriculum Philosophy, (description of curriculum and curriculum changes over time).

TRAINING

Civitan provided training for the Fall and Spring national core data set collection cycles. Those responsible for data collection at each of the 32 sites attended these training sessions. Those attending the sessions in turn trained the local child assessors, parent interviewers, classroom observers and other data collectors.

DATA ANALYSIS

The major focus of data analysis will be to examine and describe growth and change over time. Differences between demonstration and control children, families, schools and communities and differences between former Head Start and non Head Start children and families will be analyzed.

At this point, only Fall national core data has been collected. This has been submitted to Civitan for computer entry but has not yet been returned. Local site data, which is largely descriptive and process based in character, is currently being collected and will be analyzed this summer.

RESULTS

Results at this point are very limited. Only preliminary comparisons have been made. There is some confidence in reporting that children in the demonstration and control schools are equal on the Peabody Picture Vocabulary test and on the social skills rankings provided by their parents. That is, there are no differences in these two Fall measures between the groups. This result would seem to indicate that the random selection of demonstration and controls schools was successful.

DISCUSSION

The lack of differences between the demonstration and control children described above is of course the hoped for finding. If the two groups start out equal then growth and change can then be attributed to the interventions (or lack of them) that occur after the initial data was collected.

It is anticipated that over the next four years the data will show trends of growth that can be attributed to program implementation. Changes in children, families, schools and communities will be described through qualitative and quantitative analysis. The emergence of a transition model is the envisioned long term outcome of the South Dakota Head Start/Public School Transition Project.

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A CASE FOR IMPLEMENTING LAW AND CIVIC EDUCATION

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The fanfare of the 1992 presidential election has been recorded for posterity and the lessons to be learned from the events are yet to be realized, however, it may be safely offered that this nation which has peacefully made a transition of political power has done so with the consent of a populous ignorant of the supreme law of the land (Research & Forecasts Inc., 1987; Eveslage, 1990; Rothman, 1990). With echoing voices, statesmen and scholars throughout history have cautioned citizens that oligarchy awaits the governed who remain ignorant of their government's historical foundation and do not grasp the obligations of citizenship (Adler, 1988; Proctor, 1988). If we were to believe Otto's (1990) prescription for a democratic government's failure, repudiation of civic responsibilities because of apathy, indolence, ignorance, selfishness or prejudice, the prognosis of our countries existence would be bleak at best.

To stymie the apparent erosion of civic responsibility, the preparation of an informed and enfranchised citizenry must take place. Patrick and Hoge (1990) outlined the evolution of government and civic and law education during the past century. The current practice is an interactive educational process to engender in students the skills needed to respond to our changing society and the legal issues which confront it.

The evolution of law and civic education has brought about a movement to empower students to investigate issues and solve them (Eveslage, 1990; Newmann, 1989). The classroom and school, as a microcosm of society as Barber (1989) proposes, should provide students with the opportunity to practice and experience the functioning of a democracy. Research indicates and writers address the issue that the participatory and student empowerment approach to teaching citizenship is successful in the promulgation of skills, attitudes and behaviors characteristic of enfranchised citizens (Langton, 1988; Hepburn, 1982; Parker, 1989; Barber, 1989).

With the necessity to instil civic responsibility and the means by which to accomplish this imperative, one would expect that civic education is moving forward with expedited efficiency. The reality of the day reveals this is not the case. Patrick and Hoge (1992) indicated that as of 1989 less than 40% of all seventh, eighth and ninth graders were

enrolled in civics courses and that textbooks most commonly used in high school government and civics classes have not corrected noted deficiencies identified in the 1960s. Law-related education teachers similarly identified these two factors, required law-related education courses for students and pertinent materials for instruction, as major concerns to be addressed for effective civic education (Hardin, 1991).

Rectifying these two deficiencies will require the efforts of agencies, organizations, administrators and teachers in a cooperative fashion not inherently found in educational circles. Terrel Bell (1993) reviewed the A Nation At Risk report of 1983 with the same conclusions and recommendations. There must be a larger national role of coordination to localize power at the school so that with attentive leadership and parental involvement the local needs of each school may be met. Buzzell (1992) noted the work of Hawkins and Catalano (1989) to advocate law and civic education for the development of resiliency to high risk factors which include the influence of family, school and community. With the family, school and community working together, as proposed by Bell, the effectiveness of education to prepare students for the future and to deal with the drug and delinquency issues may be realized through law and civic education.

The derivative of law and civic education is duly noted by Hardin's (1991) national survey of teachers which indicated that teachers were cognizant of a positive change in their students' class attendance, behavior and interest in social and legal issues. Johnson and Hunter (1986) similarly attributed a reduction in delinquent social behaviors and an increase in positive social attitudes to the introduction of law-related education, the curriculum.

The success of law and civic education to enfranchise students in citizenship is properly supported. The remaining question is: what may be done to more effectively implement this form of eduction in schools and their curriculums?

One proposition is to determine the current practice within schools of each state and the level of knowledge, attitude and participation in citizenship activities by students at all grade levels. Each state having

the aforementioned information would enable localized design and initiation of law and civic education curricula.

To implement as assessment, a two front approach may be executed (Herman, Morris & Fitz-Gibbon, 1987). First would be an assessment of educational practitioners of law and civics education. Surveys and interviews would indicate the extent of administrator and teacher commitment and practice toward law and civic education. Second would be to determine what knowledge, attitudes and citizenship behaviors students are to possess that would enable them enfranchisement at citizens. Once the criteria for student assessment is developed the assessment of the students would take place to match expected outcomes with the actual performance.

The analysis of the data collected from these two assessment fronts allows for a comparison of current conditions and what is desired. Juxtapositioning these two factors would facilitate curricular development addressing the needs identified. Adjudication of law and civic education based upon empirical data realized from a needs assessment offers the promise of successful implementation at the local level rather than induction of curricular revisions based upon the eye or ear appeal of national materials and workshop speakers.

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WHAT METHODS ARE SOUTH DAKOTA TEACHERS USING TO TEACH SCIENCE IN K-4 PUBLIC SCHOOLS?

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An effort is being made to improve science education in South Dakota. The South Dakota State Systemic Initiative (1992), through a grant from the National Science Foundation, drafted science benchmarks for K-4 students. The benchmarks provided guidance for instruction stating that students would learn through "hands-on activities with a real world emphasis" (p. 7). Are these methods presently being utilized in South Dakota elementary schools? If not, what is being used? The purpose of this study was to find out what methods are used to teach science in South Dakota public schools K-4.

POPULATION

A random sample proportionate to size was utilized to select teachers from 16 schools in 14 different school districts. A total of 80 elementary teachers, who taught science in K-4 South Dakota public schools, were chosen for inclusion in the study. The teachers were randomly selected from the total pool of teachers in the state of South Dakota. The sample was selected proportionate to size in order to fairly represent the population density of the state.

INSTRUMENT

A matrix survey was developed with the assistance of approximately 25 South Dakota elementary science teachers. Methodologies were listed on the left hand side of the form and cells were provided to the right of each methodology. The teachers were asked to keep track of methods they used each day by making a check mark in the appropriate cell.

DATA COLLECTION AND ANALYSIS

The survey matrices were mailed to the selected elementary teachers for four consecutive week.s The forms were dated and color coded for each week. The number of times each methods was reportedly used was tallied and converted to a percentage. The percentage represented the occurrence of each method used. Methods were tallied for the four week and reported in Table 1.

FINDINGS OF THE STUDY

Science is taught mainly through integration with other subjects and class/group discussions not based on the textbook in kindergarten. At the first grade level, discussions **not** based on the textbook, integration of science with other subject areas and discussions based on the textbook top the list of methods used to teach science. Second grade teachers prefer to use class/group discussions to teach science. The discussions were either **not** based on the textbook (based on other information) or based on the textbook. By the time a student gets to the third and fourth grades, the textbook is the number one tool for use in the science classroom. Third and fourth grade students either have discussions based on the textbook or are asked to read the textbook as a method of gaining information in science.

Using a textbook is a passive method of learning. It is used at the kindergarten level only as a vehicle for discussion, but is one of the top five methodologies used at the first through fourth grade levels. Textbook use by the student increased as the grade level increased, indicating the textbook plays a more dominant role in the classroom as the students gain in reading ability. Nationally, fifty to eighty percent of all science teachers use a textbook as the basis of their instruction (Mechling and Oliver, 1983). In South Dakota, fifty nine percent of K-4 elementary teachers use the textbook.

Class/group discussions were the most frequently used methods of science instruction when all grades were averaged (Table 2). This parallels findings that nationally, recitation (discussion) is the most widely used method of teaching science (Bedderman, 1982). Discussion **not** based on the textbook was the number one methodology used to teach science and discussion based on the textbook was second.

As the grade level increased so did the use of workbooks, worksheets and tests. Teachers utilized these more passive methods of teaching students as the grade level increased. Eighty-five percent of the teachers who reported using tests also reported using a textbook.

Integration of science with other subjects rated high on the survey.

Math reading and language arts were the subjects cited as being integrated most often with science. Kindergarten, first and second grade students were taught science through integration at a higher rate than third and fourth grade students.

The occurrence of hands-on science decreased as the grade level increased. Suggesting a more inactive method of learning science as the grade level increased. Kindergarten through fourth grade students need concrete objects to manipulate in order to bridge the gap between concrete and abstract ideas. The most efficacious methodologies to use with kindergarten through fourth grade students are hands-on methodologies.

SUMMARY

South Dakota teachers utilize different methods of teaching science to their students at the different grade levels. At the kindergarten level, active methods of teaching science are utilized, but at each grade level from first to fourth grade the occurrence of active methods of teaching declined. Students are in the preoperational stage of cognitive development through fourth grade and need active, real-life, hands-on methods of learning. South Dakota teachers are not unique in their practice of weaning students off hands-on learning situations too quickly. Nationally, there is a need for more active methods of teaching science to elementary students. The South Dakota State Systemic Initiative is encouraging teachers to use more authentic assessments and real-life situations with hands-on activities. Through the use of active methods of teaching science, teachers will be able to build the foundation students need to learn science at middle and high school levels.

Table 1.

Percentages of Methodology Occurrences

Kindergarten through Fourth Grade

Methodologies	Grade K	Grade 1	Grade 2	Grade 3	Grade 4
Used a textbook: students read aloud/silently	0.00%	8.44%	12.60%	15.58%	17.25%
Class/group discussion based on the text	6.29%	14.50%	15.70%	18.11%	19.63%
Class/group discussion not based on the text	18.44%	17.32%	15.50%	13.68%	9.72%
Integrated science with other subjects	19.52%	14.07%	11.24%	6.74%	8.07%
A teacher demonstration was done for the class	9.76%	7.58%	4.46%	3.79%	4.95%
Students acted out parts or did simulations	9.11%	4.76%	3.49%	3.58%	3.30%
Students completed worksheet(s)	5.86%	7.58%	5.43%	6.32%	11.74%
Students did a hands-on experiment	12.15%	11.04%	11.05%	9.05%	7.71%
Students listened to a cassette or looked at slides	2.60%	3.25%	2.52%	2.53%	1.83%
Used outside reading like RANGER RICK, Weekly Reader	11.50%	6.28%	8.33%	5.47%	4.22%
Students watched a TV show or video on science	3.04%	3.46%	6.40%	9.26%	3.85%
Class field trip	1.30%	0.43%	0.58%	0.84%	0.37%
Students took a test	0.00%	1.30%	1.94%	2.74%	4.40%
Other:(describe in Comments)	0.43%	0.00%	0.78%	2.32%	2.94%
Total	100%	100%	100%	100%	100%

Table 2.

Averaged Methodology Occurrences for K-4

In descending Order

Methodology	Occurrence
Class/group discussion **not** based on the text	14.93%
Class/group discussion based on the textbook	14.85%
Integration of science into other subject areas	11.92%
Used a textbook: Student read aloud/silently	10.77%
Students did a hands-on science experiment	10.20%
Students completed worksheets/workbooks	7.39%
Outside reading like Ranger Rick/Weekly Reader	7.16%
Teacher demonstration completed for students	6.11%
Students watched a TV/video program on science	5.20%
Students acted out parts or did simulations	4.85%
Students listened to cassettes/looked at slides	2.55%
students took a test (or reviewed for test)	2.08%
Other	1.29%
Class field trip	.70%

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