THE PURPOSE OF THIS PROJECT WAS TO DEVELOP AND IMPLEMENT AN ANNUAL ENVIRONMENTAL EDUCATION INSERVICE AND TO EVALUATE THE ATTITUDES, VALUES AND TIME SPENT TEACHING ABOUT THE ENVIRONMENT BY TEACHERS IN THE HORTONVILLE AREA SCHOOL DISTRICT.

by

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A Project
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ABSTRACT

The purpose of this project was to develop and implement an annual environmental education inservice for the Hortonville Area School District. Through the inservice the attitudes and values of the teachers towards environmental education would be evaluated. Also the amount of time teachers spent teaching about the environment would be evaluated. The process started by getting involved with curriculum writing. This allowed an understanding of what environmental education material teachers were teaching and at what grade levels. After this, a network of links with principals, administration, faculty, and school board members was established. This step was done so the inservice could take place and to align the inservice with Hortonville Area School District’s environmental education curriculum. A pre survey was given at the beginning of the inservice. Then at the end of the school year a post survey was given. A comparison was made between the pre and post surveys to see if changes occurred in the attitudes, values, and time spent teaching about the environment by teachers that attended the inservice. It was found that teachers at Hortonville Area School District feel very confident in teaching and in teaching environmental education. What they need is help in finding the materials to infuse environmental education into their curriculum.
I would like to thank my wife, Beth, for walking beside me during this journey. You have been supportive, encouraging, and uplifting through this long process. I personally admire you and only hope to achieve what you do so elegantly and beautifully with your many wondrous gardens. Your passion for more flowers has not only influenced me but the people that surround you. Your love of nature and your beautiful flowers make my world complete.

I would also like to thank my children Mitchell and Jackson. Your youth and curiosity make learning about the environment fun and never ending. May we always have bugs to discover, critters to let go and together time to enjoy.

Lastly I would like to thank my grandparents Wilfred and Elsie Resch. You may be gone from this world but the memories of you and your gardens will always be in my heart, mind and soul.
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CHAPTER 1
INTRODUCTION

Statement of the Problem

The purpose of this project was to develop and implement an annual environmental education inservice and to evaluate the attitudes, values, and time spent teaching about the environment by teachers in the Hortonville Area School District.

Sub problems

1. Gain approval from administration, school board, and other support staff members at Hortonville High School for development of the inservice.
2. Develop and implement an inservice for faculty to assist their understanding of environmental education and selected related materials. Show how these materials align with environmental education standards and how teachers can use materials in their classrooms.
3. Survey the teachers who attend the inservice to determine their attitudes, values and the extent to which they are teaching about the environment.
4. Evaluate the effectiveness of the inservice with the use of a post survey. Use the results of the post survey to revise environmental education materials and continue the inservice on a yearly basis.

Significance of problem

There is a need for environmental education at Hortonville High School. There is a need for teachers and students to become involved in and develop an understanding of the environment. Students need to realize how their roles and values impact the environment. Our school needs to teach our students that, yes, there are concerns for the safety of our environment. When environmental education is taught here it should not “produce ecologically concerned citizens who, armed with ecological myths, are willing
to fight against environmental misdeeds of others but lack the knowledge and conviction of their own role in the environmental problems” (Gigliotti 1990). Instead, teachers can encourage students to develop responsible citizenship behaviors regarding environmental issues, understand their role in the environment, and develop beliefs, values, and concerns for the environment.

Teaching environmental education at Hortonville High School is challenging. First, Hortonville lacks a natural area close to the school that could provide an outdoor “real life” experience. Second, most teachers lack the knowledge to infuse environmental education into their classrooms. Third, when trying to teach environmental education, some subject areas are easier to infuse than others are. The purpose of this project was to develop an inservice that makes it easier for all teachers in all subject areas to infuse environmental education into their curriculum.

Limitations
1. This project will not mandate teachers to attend inservices.
2. Inservices will be offered yearly.
3. This project will not include compensation for other faculty member’s participation.
4. The project will not attempt to provide a complete environmental education literacy to Hortonville Area School District teachers; instead it will be a starting point for educating teachers in the area of environmental education.
5. The survey will only assess teachers who attend the inservice.

Definitions
1. Environmental education—...that part of education which deals with ecologically related social issues in the environment and focuses on the development of responsible citizenship behaviors regarding those issues. (Hungerford et. al., 1985)
2. Infuse—teach concepts of environmental education through various subjects.
Assumptions

It was assumed that

1. Administrative approval would be given for developing the inservice.
2. Teachers have interest in and would attend the inservice.
3. Teachers of all subject areas will utilize the inservice of environmental education curriculum materials.
CHAPTER II

REVIEW OF RELATED LITERATURE

Value of Environmental Education as a Tool

What is a tool? According to Webster’s dictionary it is any implement for working, cutting, shaping etc. In this project environmental education will be used as a tool for teachers to teach students the goals stated in the Tbilisi Declaration (1977).

- **Awareness**: to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.
- **Knowledge**: to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems.
- **Attitudes**: to help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.
- **Skills**: to help social groups and individuals acquire the skills for identifying and solving environmental problems.
- **Participation**: to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.

If teachers use the five goals as a guide they start to see that environmental education is intertwined with the environment, students, community, and school. As they see these relationships between environment, students, community, and school, teachers will recognize potential ways to involve their students in environmental issues. Teachers can use their understanding of these relationships to create more experiences that are meaningful and life long. Also personal experiences relating to the environment create the possibility that students’ attitudes will become more positive toward the
environment. As noted by Milton et al. (1995), "The relationship between attitude and behavior is strong when the attitude has been developed through direct experience".

In order for teachers to provide long lasting experiences they first need to understand what their students know in order to determine what they need to teach. "Seventy-five percent of our children are growing up in urban and suburban environments, most of them apparently quite removed from the world of nature" (Tanner 1980). If teachers do not recognize their student’s background it will be difficult to make long lasting connections to the environment. Hortonville, like many other communities, is growing at an extraordinary rate. Each year our student population is becoming more diverse, which means our teachers need training, inservices, and current data to be truly in touch with the needs and backgrounds of the student body.

Once students have positive experiences to connect them to the environment, the teacher can start to ask questions that allow students to develop their own values and beliefs, because "values follow from experience" (Devall 1984-85). For teachers it starts with building a foundation that students can identify with and providing experiences that allow students to nurture their environmental conscience.

Another important consideration teachers have in their favor when using environmental education as a tool is their students' youthful sense of curiosity. With "curiosity about woods, water, and wildlife, their superior senses, and their lack of inhibition about getting up close, children often have a more instinctive nature than adults" (Kellert 1985). This makes it easier for the teacher to get the students' attention and keep them interested for longer periods of time in the dynamic setting of the world.
as a classroom. As Cohen said “Nature has a way to grab our attention multisensually. Ensuing thoughts, feelings, and reactions that trigger discussion, sharing and analysis. By awakening our natural sense through appropriate outdoor activities, people can become reconnected to the global life community” (1984-85). If a teacher can recognize this and use it to their advantage, more environmental goals can be achieved with longer lasting results.

**Increasing teachers’ attitudes positively toward Environmental Education**

“How an environmental educator introduces a site to teachers may well determine the accomplishment of environmental education goals” (Simmons 1993). When environmental education is introduced to teachers it must be done positively. It is not hard to convince someone to teach about environmental education when they already do it or when they love to teach it. But trying to convince someone to teach a topic such as environmental education who has never taught it before can be very difficult. From the onset of this project a positive, energetic, and fun atmosphere needs to be created. Teachers need to see the enthusiasm and carry that back to their classrooms. The idea is that the enthusiasm created during the in service will reconnect teachers to the environment and give them a sense of ownership and responsibility and the desire to teach students about environmental education.

Demonstrating critical thinking activities during inservices will help teachers understand how to use environmental education to nurture their student’s higher level thinking skills. Ashbaugh and Kordish (1971) talked about the benefits of using a trail as part of environmental education to help teach and problem solving and to encourage
critical thinking, but many of these benefits can also be developed in the classroom or on school grounds. Below is a list of some of these benefits.

(a). Education-provides a stimulating location for learning about the environment. Stresses the scientific method as an educational approach to the solution of environmental problems.
(b). Conservation provides first hand examples of cause and effect relationships between man and his environment. Calls attention to both problems and solutions in managing natural resources through employment of conservation practices.
(c). Interpretation-provides realistic examples of the interdependence between living things and their environment. Nature is permitted to “speak” more directly and forcefully.
(d). Research-provides opportunity for a systematic inquiry into the outdoors through observation and experimentation.
(e). Direction-introduces nature and environmental subject to the beginner in logical sequence, thus providing for a more stimulating and rewarding experience.
(f). Inspiration-provides first hand experiences for maximum motivation and creative expression.

Creating a successful Environmental Education inservice

One of the goals of an inservice is to give teachers the opportunity to participate and understand more about environmental literacy. It should also provide resources and activities to help teachers infuse environmental education materials into their classroom. To be effective the inservice “must be constructed with a clear understanding of the knowledge and skills that lead to environmental literacy and a vision of environmental education’s place within the school curriculum” (EETAP 1999). In most cases teachers will have to be taught the knowledge, skills, history, and standards of environmental education. They will also have to be shown how to infuse environmental education materials into their curriculum.
As the inservice instructor, I need to determine possible situations that teachers may encounter when teaching environmental education. I need to include activities for the teachers to participate in during the inservice because “teachers need training to learn what can be accomplished in these different settings” (Simmons 1993). This will optimize success in their classroom and help teachers visualize how to use the activities to fit the individual needs of their classes. “Without direction, they will rely on their previous experience or stereotyped ideas of what can be accomplished in a particular setting” (Simmons 1993). In some cases this works out fine, but for teachers that are not teaching in their subject areas it is difficult. If they participate in inservices that tell the teacher exactly what and how they can infuse environmental education into the their classroom, they will become much more successful.

On an even bigger picture “if schools are to be successful in influencing learners to be socially and environmentally responsible people, they will need to conceive, develop, and implement a comprehensive environmental values study program as part of the general moral education program” (Cauto 1985). This is why it is important that support is given from an administrative level. Without support, environmental education becomes fragmented and only taught by teachers that are comfortable with the topic, thereby limiting participation and failing a goal of environmental education.

Realizing that most teachers will have a difficult time infusing environmental education, certain parameters are needed for successful infusion. The most practical way to help teachers infuse environmental education in the Hortonville Area School District is to use an inservice. Below is a list of factors that will be used at the inservice to help promote the successful infusion of environmental education.
• The program should be designed to attract teachers from all backgrounds, not just those with scientific backgrounds.
• The program should deal with environmental education in all areas of curriculum, stressing methods as well as content.
• The program should provide training in using the classroom and the schoolyard as sites for environmental education.
• The program should provide opportunities to explore a variety of instructional materials appropriate to all grade levels.
• The program should be motivational, especially for non-science teachers unsure of their competence to teach environmental education in their classrooms (Ham et al. 1987-88).

The goal of the inservice is to give teachers the knowledge to infuse environmental education into their current curricula. “Thus, an environmental education inservice workshop can lead to the reduction of many of the barriers that inhibit teachers from conducting environmental education. When such barriers are reduced, attention given to environmental education by classroom teachers is likely to increase” (Ham et al. 1987-88).

**Barriers of Environmental Education**

“If teachers are to pursue excellence in environmental or any other form of education, they must have a clear vision of what they wish to achieve” (May 2000). Teachers have very busy schedules: going to meetings, preparing lesson plans, advising and coaching extra curricular activities. When they are asked to change, add or remove parts of their curriculum it is a request often met with resentment. When teachers are asked to infuse environmental education into their curriculum it is even more challenging because the vision of how they are supposed to do so is often cloudy and unclear. This is due to the fact that many teachers lack time or knowledge about environmental education. In a study done by Ham et al. (1987-88) “almost 60% of the
teachers with non-science backgrounds saw lack of knowledge as an ‘important’ or ‘most important’ barrier preventing them from infusing environmental education. In all, there are four general barriers to environmental education.

1. Conceptual—barriers from lack of consensus about the scope and content of Environmental Education.
2. Logistical—barriers stemming from a perceived lack of time, funding instructional resources, suitable class size and so forth.
3. Educational—barriers stemming from teachers’ misgivings about their own competence to conduct Environmental Education programs.

Even when barriers are narrowed down to four general categories, the question still needs to be asked: where does one begin to decrease the perception of these barriers among teachers? Caduto (1985) noted that “Emphasis should be on the problems, constraints and potentials encountered when teaching environmental values”. The inservice should start by encouraging teachers’ enthusiasm. Once teachers have been drawn into the topic, the inservice will identify some of the problems that will be encountered, and then follow up with explanations to resolve the problems.

One or all the barriers can affect teachers. Because of this there is not an easy approach to resolving the barriers. This inservice will try to reduce the environmental education barriers so teachers can more easily infuse it into their classroom, or as Engleson stated in 1985 “environmental education can permeate the entire curriculum with every subject area at every grade level dealing with the environment in some way”.

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CHAPTER III

RESEARCH METHODOLOGY

Treatment of the Sub problems

The first sub problem was to gain approval from administration, school board, and other support staff members at Hortonville High School for development of the inservice.

The first step in gaining approval for the inservice was to communicate with the current principal, Sharon Becker. We had already discussed the idea informally and she had even offered suggestions to encourage faculty involvement. She explained that at Hortonville an inservice is easy to implement as long as it is beneficial to the teachers, school and students. Sharon liked my idea for the inservice and said she would ask some of the members of the school board for informal approval. She presented the idea of the environmental education inservice to the school board members in August 2001. Sharon then advised me to talk to our curriculum director, Zola Nimmer. Zola helped me understand the details of setting up an inservice and explained that once I received approval, I could set a date for the inservice and proceed with my plan. Approval was received and the date chosen, due to minimal conflict with other meetings and activities, was Thursday September 27th 2001.

The second sub problem was to develop and implement an inservice for faculty to assist their understanding of environmental education materials. Show how these materials align with environmental education standards and how teachers can use materials in their classrooms.

After I gained approval for the inservice, I started to review the literature to determine what I wanted to include (see “Creating a successful environmental education inservice” in the Literature Review).
One goal of the inservice was to provide the teachers with information they would immediately be able to incorporate in their classrooms. As the inservice date neared, I continued to keep in contact with Zola to help determine what teachers would attend the inservice so I could incorporate appropriate materials. I contacted Phyllis Peri at the Center for Environmental Education at the University of Wisconsin – Stevens Point. This is a resource center with materials emphasizing environmental education. After talking to Phyllis, we set up a meeting on Saturday of September 22\textsuperscript{nd} 2001. At that time I would have a firm idea of the materials needed that would align with the classes and grade levels in which the teachers attending my inservice taught. I decided to get elementary level materials, but did select some resources for the middle school and high school. I did not select more upper level materials because I already had many of these in my possession to share and available for teachers to use.

On the day of the inservice, I handed out a schedule (see appendix B) of what the teachers would accomplish, along with handouts including all material to be presented. We had discussions on the importance and relevance of environmental education and went over the five goals of environmental education from the Tbilisi declaration.

During the next portion of the inservice I demonstrated activities and allowed teachers to participate in order to help them better understand how to incorporate the activities into their classrooms. We did several activities inside and outside of the classroom. After the activities, teachers were allowed to look at the resources that I had set out for the inservice. I had them put post-it notes on any activities that they would like for their classroom and I promised to photocopy all reproducible lessons for their use.
The third sub problem was to survey the teachers who attend the inservice to determine their attitudes, values and the extent to which they are teaching about the environment.

As soon as teachers arrived at the inservice I handed them a survey to fill out (see appendix A). The format of the survey was similar to a survey used by McCaw (1979-80).

Objectives of survey:

1. Determine the extent to which teachers are currently using the environment to teach—both on site and on field trips.
2. Discover what is taught outside the classroom.
3. Determine teachers' priority regarding environmental education.
4. Assess teachers' attitudes toward environmental education.

The completed surveys were collected and would be used to help determine teacher's attitudes, values and the extent to which they are teaching about the environment.

The fourth sub problem was to evaluate the effectiveness of the inservice with the use of a post survey. Use the results of the post survey to revise environmental education materials and continue the inservice on a yearly basis.

During the spring of 2002 another survey was given to the teachers that attended the September 27th inservice. The post survey was very similar to the pre survey given at the inservice, including all questions from the original survey with additional questions (see appendix C). Completed surveys were collected and the data was analyzed. There were three ways the results were evaluated from the surveys. The first was adding up the number of responses on all the surveys and comparing them. The second was giving each response choice a number value then adding up the values on all the surveys. The third way that the data was evaluated was each choice was given a number value then multiplied by the total number of responses. The multiplied values were added up and compared (see appendix E). From the results of the new survey I received feedback as
to what materials were most helpful, what information teachers are most likely to use, and plan my inservices during the 2002-2003 school year and beyond.
CHAPTER IV

RESULTS

Gain approval from administration, school board, and other support staff members at Hortonville High School for development of the inservice.

When I returned in August of 2001 school year I contacted Sharon Becker for approval of the environmental education inservice. I had a discussion with her about my plans and asked if I needed board permission to continue. During our conversation she asked me the purpose and time frame of the inservice along with what, if any, cost I expected. I told her that this was a long-term plan that would have one inservice a year for the next few years and would not cost the district any money. I assured her that the agenda of the inservice would help the district’s teachers infuse environmental education into many classes district wide. I explained the activities and the standards that would be met. During the following week she contacted a few members of the board to see if I would have to formally present my proposal to the board. They all agreed that I would not need approval from the board as long as I work with Zola Nimmer our curriculum director. I contacted Zola and I explained the inservice. She agreed to support my endeavors and indeed has done so.

Develop and implement an inservice for faculty to assist their understanding of environmental education materials. Show how these materials align with environmental education standards and how teachers can use materials in their classrooms.

During the summer of 2001, I contacted Zola Nimmer to schedule a date for the environmental education Inservice. We looked at her calendar for all scheduled inservices and decided September 27th would be the best day. During our meeting we established the inservice to be one hour long and have to take place after school. We
established the inservice time from 3:45 to 4:45 p.m. so teachers form all buildings in the district would have time to arrive after school. We also decided that teachers who participated in the inservice would receive service training hours for attending. Once we set up the topic, date and time she contacted the principals at each school. Each principal would notify their staff on the first day of school about the inservice. Next I contacted Valerie Schmitz, our computer program director, and had her post the information on the school website (see appendix D). Finally Zola and I came up with ideas to encourage teachers to attend including snacks and service forms, and handouts of materials.

Survey the teachers that attend the initial inservice to determine their attitude, value and the extent that they are teaching about the environment.

There were nine people that attended the survey on September 27th: two from the elementary level, one from the middle school and six from the high school. From this group of people five were male and four were female. The youngest person was 27 and the oldest was 52 years old. The amount of formal training ranged from Bachelor of Science to Master’s degree. The elementary and middle school teachers taught all subject areas and the high school teachers taught alternative education, geography, history, science, social studies, and technical education. A survey (see appendix A) was given to the teachers at the beginning of the inservice on September 27th. The survey addressed four objectives that focused on the purpose of this project (see research methodology—sub problem three). The following survey questions are explained and will address the four objectives.
Question one on the survey asked the teachers to rank in importance various subjects that are taught throughout the school. A number value was given to each of the responses with “very important” given a point value of four, ranging down to “unimportant” given a zero. The maximum number of points a subject could total was thirty-six and the minimum was zero. Table 1 shows the results of this question.

Table 1. Subject importance ranked by teachers *

<table>
<thead>
<tr>
<th>Subject</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Education</td>
<td>25</td>
</tr>
<tr>
<td>Science Education</td>
<td>30</td>
</tr>
<tr>
<td>Math Education</td>
<td>25</td>
</tr>
<tr>
<td>Vocational Education</td>
<td>20</td>
</tr>
<tr>
<td>Extra Curricular Cubes</td>
<td>15</td>
</tr>
<tr>
<td>Reading Education</td>
<td>10</td>
</tr>
<tr>
<td>Environmental Education</td>
<td>5</td>
</tr>
<tr>
<td>Sports</td>
<td>0</td>
</tr>
<tr>
<td>Art Education</td>
<td>5</td>
</tr>
<tr>
<td>Home Economics</td>
<td>10</td>
</tr>
<tr>
<td>Consumer Education</td>
<td>0</td>
</tr>
</tbody>
</table>

* Each teacher gave a number value between one and five for each subject. Then the values were added and compared.

The following are some of the subjects teachers ranked in order of most important science, math, reading and environmental education. The subjects teachers ranked as least important are sports and extra curricular.

Table 2. Subjects teachers taught outside *

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Studies</td>
<td>10</td>
</tr>
<tr>
<td>Tech Ed</td>
<td>15</td>
</tr>
<tr>
<td>Architecture</td>
<td>5</td>
</tr>
<tr>
<td>Art</td>
<td>0</td>
</tr>
<tr>
<td>Construction</td>
<td>10</td>
</tr>
<tr>
<td>Environmental Education</td>
<td>25</td>
</tr>
<tr>
<td>Language Arts</td>
<td>15</td>
</tr>
<tr>
<td>Maps</td>
<td>10</td>
</tr>
<tr>
<td>Music</td>
<td>15</td>
</tr>
<tr>
<td>Math</td>
<td>20</td>
</tr>
</tbody>
</table>

The number of responses for each subject taught outside was totaled and compared.

Question two on the survey asked the teachers to determine the number of times they take their students outdoors on the school site to teach about the environment. The
results of the survey showed that the range teachers took students outside was zero to twelve times during the school year. The total number of times students were brought outside was 49 times with the average being 5.44 times.

Question three asked teachers to identify the subjects that were taught outside. Table 2 shows the results of this question. The four subject areas that are most frequently taught outside are Science, Art, Environmental Education and Language Arts, respectively.

Question four on the survey asked the teachers how they perceived their principal’s attitude about teaching outside the building. The results are displayed in table 3.

<table>
<thead>
<tr>
<th></th>
<th>Very Encouraging</th>
<th>Encouraging</th>
<th>Strongly Opposed</th>
<th>Discouraging</th>
<th>Neutral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
<td>33%</td>
<td>0%</td>
<td>34%</td>
<td>33%</td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.

Question five on the survey asked teachers how often they took a field trip with their class. The results of the survey showed that the minimum number of field trips taken was zero and the maximum number for one teacher was six. On average the teachers surveyed took their students on field trips 2.2 times per school year.

Question six asked teachers where they took their students whether the sites were indoor or outdoor. Five of the teachers took their students to outdoor sites and one took their students to indoor sites.
Question seven on the survey asked teachers to indicate factors that either prevented them from taking a field trip or worried them about taking a field trip. Table 4 shows the results listed in alphabetical order with the greatest number of responses located at the top of the table.

Table 4. Items that prevented or worried teachers about field trips *

<table>
<thead>
<tr>
<th>Prevented Field Trip</th>
<th>Worries about Field Trip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard to arrange with other teachers</td>
<td>3</td>
</tr>
<tr>
<td>Cost of field trip</td>
<td>2</td>
</tr>
<tr>
<td>Distance of field trip</td>
<td>2</td>
</tr>
<tr>
<td>Too much else to get done</td>
<td>2</td>
</tr>
<tr>
<td>Attitude of other teachers</td>
<td>1</td>
</tr>
<tr>
<td>Conflicts with sports</td>
<td>1</td>
</tr>
<tr>
<td>Feel kids won’t get enough out of experience</td>
<td>1</td>
</tr>
<tr>
<td>Not enough places to go</td>
<td>1</td>
</tr>
<tr>
<td>Principals attitude</td>
<td>1</td>
</tr>
<tr>
<td>Trip not pertinent to subject</td>
<td>1</td>
</tr>
<tr>
<td>Time restriction</td>
<td>1</td>
</tr>
<tr>
<td>Attitude of other teachers</td>
<td>3</td>
</tr>
<tr>
<td>Liability</td>
<td>3</td>
</tr>
<tr>
<td>Safety of the Students</td>
<td>3</td>
</tr>
<tr>
<td>Hard to arrange with other teachers</td>
<td>2</td>
</tr>
<tr>
<td>Not enough places to go</td>
<td>2</td>
</tr>
<tr>
<td>Trip not pertinent to subject</td>
<td>2</td>
</tr>
<tr>
<td>Availability of resource people</td>
<td>1</td>
</tr>
<tr>
<td>Behavior problem</td>
<td>1</td>
</tr>
<tr>
<td>Not enough information about where to go</td>
<td>1</td>
</tr>
<tr>
<td>Problems getting transportation</td>
<td>1</td>
</tr>
<tr>
<td>Too much else to get done</td>
<td>1</td>
</tr>
</tbody>
</table>

*The responses were added up, compared and put in order of most important.

Question eight on the survey asked teachers how often they taught environmental education materials/concepts. The results of the survey showed that every teacher taught environmental education at least one time during the year. There were five teachers that taught environmental education concepts more than eleven times each year. Table 5 shows the results.

Table 5. Number of times teachers taught environmental education materials during the year.*

* The responses were added up and then compared.
Question nine on the survey asked teachers to indicate how comfortable they feel when teaching environmental education concepts. Table 6 shows these results.

Table 6. Comfort level of teachers when teaching environmental education *

<table>
<thead>
<tr>
<th>Comfort Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very uncomfortable</td>
<td>0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>11%</td>
</tr>
<tr>
<td>Very comfortable</td>
<td>44%</td>
</tr>
<tr>
<td>Comfortable</td>
<td>45%</td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.

Eight of the teachers surveyed either feel comfortable or very comfortable when teaching environmental education concepts. One teacher was neutral not expressing how comfortable they felt about teacher environmental education.

Question ten on the survey asked teachers how successful they believed they were in teaching environmental education concepts. Table 7 shows that eighty-nine percent of the teachers thought that they were successful when teaching the environmental education concepts.

Table 7. Teacher’s success level when teaching environmental education

<table>
<thead>
<tr>
<th>Success Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuccessful</td>
<td>0%</td>
</tr>
<tr>
<td>Very successful</td>
<td>0%</td>
</tr>
<tr>
<td>Successful</td>
<td>89%</td>
</tr>
<tr>
<td>Very unsuccessful</td>
<td>0%</td>
</tr>
<tr>
<td>Neutral</td>
<td>11%</td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.
Question eleven asked teachers to rate how easy it is for the teacher to infuse environmental education materials into the classroom. Table 8 shows the results. The majority of teachers (89%) found it easy or very easy to infuse environmental education materials.

Table 8. The ease at which teachers infuse environmental education *

<table>
<thead>
<tr>
<th></th>
<th>Hard 11%</th>
<th>Very Hard 0%</th>
<th>Very Easy 22%</th>
<th>Neutral 0%</th>
<th>Easy 67%</th>
</tr>
</thead>
</table>

*Each response was given a numerical value then added and compared.

Question twelve asked teachers how many different subject areas they infuse environmental education materials into. The survey showed that thirty three percent of the teachers infused materials into four or more subject areas and sixty six percent infused environmental education materials in three or less subject areas. Table 9 shows the results.

Table 9. Number of subjects teachers infuse environmental education *

* The responses were added up and then compared.

Question thirteen asked teachers which subject is the easiest to infuse environmental education materials. The results are shown in table 10. Teachers
responded that science was the easiest to infuse environmental education and of the other classes listed three were science related. The second easiest class to infuse environmental education was English/Language Arts.

Table 10. Classes individual teachers selected as easiest to infuse environmental education *

<table>
<thead>
<tr>
<th>Subject</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>3</td>
</tr>
<tr>
<td>English/Language Arts</td>
<td>2</td>
</tr>
<tr>
<td>Architecture</td>
<td>1</td>
</tr>
<tr>
<td>Aquatics</td>
<td>1</td>
</tr>
<tr>
<td>Geography</td>
<td>1</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>Taxidermy</td>
<td>1</td>
</tr>
</tbody>
</table>

* The responses were added up and then compared.

Question fourteen asked teachers if they would benefit if someone would show them some of the different environmental education materials available. All of the teachers responded that yes they would benefit.

Question fifteen asked teachers if they would attend another environmental education inservice if it were offered. Again all of the teachers responded yes they would attend another inservice if it were offered.

Question sixteen asked teachers if they would share environmental education materials/concepts with other teachers. All of the teachers responded that they would share the materials with other teachers.

Question seventeen asked teachers to rate their overall attitude about teaching

Table 11. Teachers overall attitude about teaching environmental education *

<table>
<thead>
<tr>
<th>Neutral</th>
<th>Negative</th>
<th>Very Negative</th>
<th>Very Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>78%</td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.
environmental education materials/concepts. The results in table 11 shows that seventy-eight percent of the teachers have a very positive attitude and twenty two percent have a positive attitude about teaching environmental education materials/concepts.

Question eighteen asked teachers to add other comments about incorporating instruction about the environment into your teaching. There were only two comments made and they were “thanks for helping us with infusing environmental education materials” and “your doing a great job keep up the good work”.

Evaluate the effectiveness of the inservice with the use of a post survey. Use the results of the post survey to revise environmental education materials and continue the inservice on a yearly basis.

A second survey was given out during the spring of the 2001-2002 school year. It took some persistence but all teachers that attended the first inservice completed a second survey. There are a lot of data involved with this survey; the evaluation will concentrate on the attitudes, values, and time spent teaching about the environment. Following is the results from that survey.

Table 12 shows the result of question one. Overall there was a small change in the perceived importance for ten of the eleven subject areas from pre to post survey. Seven dropped in importance, and three increased in importance. The largest change occurred in extra curricular clubs. It dropped in importance by six points. Of all the subjects ranked by teachers reading ranked most important followed by science, math, and then environmental education.

Question two of the survey analyzed the number of times the teacher took their students outside. During the school year the number of times decreased from forty nine
times to thirty times. The average the number of times teachers took students outside decreased.

Table 12. Change in subject importance ranked by teachers from pre and post surveys*

*Each teacher gave a number value between one and five for each subject. Each number value was assigned a numerical number. Then the numerical numbers were added and compare.

Question three analyzed the types of subjects taught outside. Table 13 shows these data. The subject that was taught most frequently outside was science. The subject that was taught the second most frequently outside during the year was environmental education.

Table 13. Compared subjects teachers taught outside between pre and post surveys*

*The number of responses for each subject taught outside was totaled and compared.

The results for question four were exactly the same for both surveys.

Collectively the teachers said they perceived their principals attitude about teaching
outside the building was equal or thirty-three percent for encouraging, neutral and
discouraging (see table 3).

Question five looked at the number of times teachers took field trips. The total
number of field trips was sixteen, which decreased from twenty. The range of times that
an individual teacher took students ranged from zero to six with the average number of
times 1.78.

Question six asked teachers when they took their students on field trips if they
took them to indoor sites or outdoor sites. Seventy one percent of the teachers took their
students to outdoor sites and twenty nine percent to indoor sites. The number of indoor
trips increased throughout the year and outdoor trips decreased.

Question seven focussed on what prevented teachers from taking field trips
during the school year and things that worried teachers about taking field trips. The
second survey revealed an increase in the things that prevented field trips and in the
worries about field trips. The two main reasons that prevented teachers were the
distance of field trip and too much else to get done, respectively.

Table 14. Compared items that prevented teachers from taking field trips *

<table>
<thead>
<tr>
<th>Prevented Field trip</th>
<th>Survey 1</th>
<th>Survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance of field trip</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Too much else to get done in classroom</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cost of the field trip</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Not enough information about where to go</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Principal’s attitude</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Student trips not pertinent to the subject</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Attitudes of other teachers</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Availability of resource people</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hard to arrange with other teachers</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Liability worries</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Problems getting transportation</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Safety of the children</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

*The responses were added up, compared and put in order of most important from post survey.
The two main worries were attitudes of other teachers and cost of field trips. Tables 14 and 15 show the data collected from both surveys.

Table 15. Compared items that worried teachers about taking field trips *

<table>
<thead>
<tr>
<th>Worries about Field trip</th>
<th>Survey 1</th>
<th>Survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes of other teachers</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cost of the field trip</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Hard to arrange with other teachers</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Principal’s attitude</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Distance of field trip</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Liability worries</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Problems getting transportation</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Safety of the children</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Too much else to get done in classroom</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Not enough places to go</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

*The responses were added up, compared and put in order of most important from post survey.

Question eight on the survey asked teachers how often they taught environmental education materials/concepts. The results of the survey showed that every teacher that took part in the inservice taught environmental education at least one time during the year. Teachers did not report teaching as many environmental education concepts in the second survey as on the first survey. Table 16 shows the results of this question.

Table 16. Compared number of times teachers taught environmental education outside *

<table>
<thead>
<tr>
<th>Times Environmental Concepts taught</th>
<th>Survey 1</th>
<th>Survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Never</td>
<td>1 to 3</td>
<td>4 to 6</td>
</tr>
<tr>
<td>7 to 10</td>
<td>11+</td>
<td></td>
</tr>
</tbody>
</table>

* The responses were added up and then compared.

Questions nine, ten, eleven, and seventeen use appendix G (average teacher response) as a reference.
Question nine asked teachers how comfortable they felt about teaching environmental education concepts. Table 17 shows the responses of the teachers surveyed. The average response for survey 1 and survey 2 was 1.33. This value falls between comfortable teaching environmental education concepts and very comfortable teaching environmental education concepts.

Table 17. The total comfort level of teachers when teaching environmental education between the pre and post survey *

*Each response was given a numerical value then added and compared.

Question 10 of the survey asked teachers to relate how successful they felt that the students learned the environmental education concepts they taught. Table 18 shows the responses of the teachers surveyed.

Table 18. The total teacher’s success level when teaching environmental education between pre and post survey *

*Each response was given a numerical value then added and compared.

The average response for Survey 1 was .89 and survey 2 was 1.11. This value increased between the surveys. The average response for survey 1 and 2 occurs between
feeling successful about students learning environmental education concepts and very successful about students learning environmental education concepts.

Question eleven asked teachers to rate how easy it is for them to infuse environmental education materials. Table 19 shows the responses of the teachers surveyed. The average response for Survey 1 was 1.00 and survey 2 was 1.11. This value increased between the surveys. The average response for survey 2 occurs between feeling that it easy to infuse environmental education concepts and very easy to infuse environmental education concepts.

Table 19. The total ease at which teachers infuse environmental education from the pre and post survey

<table>
<thead>
<tr>
<th>Teacher Ease of Infusing Environmental Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Very Easy</td>
</tr>
<tr>
<td>Easy</td>
</tr>
<tr>
<td>Neutral</td>
</tr>
<tr>
<td>Hard</td>
</tr>
<tr>
<td>Very Hard</td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.

Question twelve asked teachers to tell how many different subject areas they infuse environmental education materials into. Table 20 shows the responses of the teachers surveyed. The average total number of subject areas infused with environmental education decreased slightly during the school year, but eighty nine percent of the teachers surveyed infused environmental education materials into more than one subject area.

Question thirteen asked teachers to identify the easiest subject area to infuse environmental education materials. This section of the survey asked teachers to write in
Table 20. Compared number of subjects teachers infused environmental education from pre to post survey *

<table>
<thead>
<tr>
<th>Number of Subjects EE infused</th>
<th>Survey 1</th>
<th>Survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Four</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Five</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six (+)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The responses were added up and then compared.

the response. The responses for both surveys were identical with the exception of one teacher. This teacher taught two different classes; in the fall he taught Architecture and the teacher identified this as the easiest class to infuse environmental education. Then when post survey was handed out in the spring he listed photography as the easiest class to infuse environmental education and this was the class he was currently teaching.

Table 21 shows the results from this question.

Table 21. Classes individual teachers selected as easiest to infuse environmental education compared from pre to post survey *

<table>
<thead>
<tr>
<th>Subject easiest to infuse EE</th>
<th>Survey 2</th>
<th>Survey 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>English/Language Arts</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Architecture</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Aquatics</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Geography</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Organic Chemistry</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Taxidermy</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Photography</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

* The responses were added up and then compared.

Question fourteen asked teachers if they would benefit if someone would show them some of the different environmental education materials available. All of the teachers responded that yes they would benefit.

Question fifteen asked teachers if they would attend another environmental education inservice if it were offered. Again all of the teachers responded yes they would attend another inservice if it were offered.
Question sixteen asked teachers if they would share environmental education materials/concepts with other teachers. All of the teachers responded that they would share the materials with other teachers.

Question seventeen of the survey asked teachers what their overall attitude about teaching environmental education materials/concepts. Table 22 shows the responses of the teachers surveyed. The average response for Survey 1 was 1.78 and survey 2 was 1.33. This value decreased between the surveys. The average response for survey 2 occurs between feeling positive about their attitudes when teaching environmental education concepts and very positive about their attitudes when teaching environmental education concepts.

<table>
<thead>
<tr>
<th>Teachers Attitude</th>
<th>Survey 1</th>
<th>Survey 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Each response was given a numerical value then added and compared.

Question eighteen asked teachers to add additional information about incorporating instruction about the environment into your teaching. There were no remarks that were important for this project.

Question nineteen asked teachers if they infused any of the materials they received form the environmental education inservice. Forty four percent of the teachers that attended the inservice did infuse some of the environmental education materials into their classroom. Of the teachers that did not infuse environmental education materials...
materials forty percent indicated that they were planning on infusing the materials later in this school year or in the following school year.

<table>
<thead>
<tr>
<th>Curriculum Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Activities from KEEP</td>
</tr>
<tr>
<td>- Various aquatic activities</td>
</tr>
<tr>
<td>- Various food web and food chains</td>
</tr>
<tr>
<td>- Compost columns</td>
</tr>
</tbody>
</table>

Question twenty asked teachers to identify the materials that they infused into their classroom. Table 23 lists these results.

Question twenty-one asked teachers the best time for them to attend another in-service. Seventy eight percent of the teachers said that the best time for an inservice was in the beginning of the school year and twenty two percent said the middle of the school year was best.
CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this project was to develop and implement an annual environmental education inservice to evaluate: the attitudes, values, and time spent teaching about the environment of teachers at the Hortonville Area School District. A goal of this project was to create an inservice that allows teachers the opportunity to learn more about environmental education and the materials that they could use in their classroom. The entire process has been interesting and rewarding. It was also given me a lot of insight from teachers and what they need to be successful at implementing any materials that are related to environmental education. Below are my conclusions of the inservice and my recommendations for the next inservice.

Conclusions

1. Teachers at the Hortonville Area School District think science, math, reading, and environmental education are the most important subjects to teach students. Because teachers feel environmental education is important, the amount of environmental education infused in the curriculum will increase each year an inservice is held.

2. Teachers expressed that it was easy for them to infuse environmental education materials. Especially when it was in the subject area they taught.

3. All the teachers involved in the inservice expressed an interested in attending another inservice and willingness to share materials with other teachers. Because of this there is a need to continue the inservice to allow teachers to attend more inservices and to share the materials with their colleagues.

4. Overall there was a negative that was identified from the inservice. The number of times teachers took students outside decreased during the school year. One reason that could account for this is when the second survey was given that there was still a significant amount of school remaining and some teachers may have recorded only the days that they went outside. There may have been days they were planning on going out but not recorded them.
Recommendations

1. Incorporate activities that are specific for outdoor use. A large percentage of HASD’s teachers use the outdoors when taking fieldtrips. Teachers expressed an interest in getting materials that would help them when they do go outside. If the teachers have activities for them to use it will increase the amount of environmental education being taught at HASD.

2. Inservice teachers of the same grade levels together. Have an inservice for the elementary, the middle school, and the high school. It was difficult to conduct an inservice with all three levels present. The teachers didn’t mind, but I lacked time to cover some areas in detail. More focus could occur on content and how to implement the materials if the different levels had different inservice.

3. I recommend having lots of hands-on activities for the teachers to do. All the teachers that participated in my inservice said that this was most helpful. They really enjoyed the activities and the discussions that followed. They said that this was valuable for them to get student’s participating and learning what the activities were intended to teach.

4. Get teachers to sign up early, then pick activities that are specific for each of their subject areas. This way the teachers will have materials that they can use in their classrooms. I did this with my inservice and it worked well. In the future I am going to focus on the specific areas, like architecture or geography. If I had more activities in the specialty areas it would increase the chance of infusing environmental education district wide.

5. One of the things I found out from this project is teachers have a lot of confidence in teaching. They also have a lot of confidence in teaching environmental education. They felt they were successful that students learned the concepts taught and are interested in learning new concepts. What they need is someone to help them find materials because they lack the time. I recommend that an inservice be conducted at least once a year. Many of the teachers that attended the inservice still are asking me to conduct another one. The more teachers are presented with environmental education materials the more likely they will use them.
BIBLIOGRAPHY


# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
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<td>Pre Survey</td>
<td>37</td>
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<tr>
<td>B</td>
<td>Schedule For Inservice</td>
<td>39</td>
</tr>
<tr>
<td>C</td>
<td>Post Survey</td>
<td>40</td>
</tr>
<tr>
<td>D</td>
<td>Web Site Information</td>
<td>42</td>
</tr>
<tr>
<td>E</td>
<td>Average Teacher Response</td>
<td>43</td>
</tr>
</tbody>
</table>
Appendix A

Pre Survey

Name: ___________________________ Grade level you teach ________

Subject areas you teach ________________________________________________________

Are you male or female ________ Age ________ Class size ________

How long have you been teaching ________________ Type of Education _BA_ BS _MS in ________

1. Rate the following according to importance in a student’s education. While all may be important, assume that there is not enough time or money to do all of them. What priority would you give each in relation to the others? (1 Very important, 2 Quite important, 3 Moderate importance, 4 Not too important and 5 Unimportant.)

_ Music education _ Extra curricular clubs _ Art education

_ Science education _ Reading education _ Literature education

_ Math education _ Environmental education _ Consumer education

_ Vocational education _ Sports

2. “How many times per year do you take your students outdoors on the school site to teach about the environment?”

0 1 2 3 4 5 6 more than 6

3. If you do go outside, what subject area(s) do you cover?

_Art _Physical Education _ Social studies _Environmental education _ Music

_Science _Language Arts _Mathematics _Other __________________

4. What do you perceive is your principal’s attitude about teaching outside the building?

_Strongly opposed _Discouraging _Neutral _Encouraging _Very encouraging

5. How often do you take a field trip with your class?

0 1 2 3 4 5 6 more than 6

6. Where do you take them? _ Mostly outdoor areas _ Mostly indoor areas
7. Please indicate which of the following factors either prevent you from taking field trips or worry you greatly if you take them. (Put a P for prevent and W for worry)

- Problems getting transportation
- Hard to arrange with other teachers
- Availability of resource people
- Too much else to get done in classroom
- Not enough information about where to go
- Other (Please Describe)

- Liability worries
- Principal’s attitude
- Attitudes of other teachers
- Not enough places to go
- Student trips not pertinent to the subject
- Your health
- Safety of the trip
- Cost for the trip
- Distance
- Not enough places to go
- Cost for the trip
- Distance

8. How often do you teach environmental education materials/concepts?

- Never
- 1—3 times per year
- 4—6 times per year
- 7—10 times per year
- 11+ times per year

9. Please indicate how comfortable you feel when teaching environmental education concepts?

- Very comfortable
- Comfortable
- Neutral
- Uncomfortable
- Very uncomfortable

10. When you teach environmental education concepts, how successful do you believe you are that students learn the concepts you taught?

- Very successful
- Successful
- Neutral
- Unsuccessful
- Very unsuccessful

11. Please rate how easy it is for you to infuse environmental education materials into the classroom.

- Very easy
- Easy
- Neutral
- Hard
- Very hard

12. How many different subject areas do you infuse environmental education materials into?

- 1
- 2
- 3
- 4
- 5
- 6+

13. Which subject is the easiest to infuse with environmental education materials?

14. Do you think you would benefit if someone would show you some of the different environmental education materials available to you?

- Yes
- No

15. Would you attend another environmental education inservice if it were offered?

- Yes
- No

16. Would you share environmental education materials/concepts with other teachers?

- Yes
- No

17. What is your overall attitude about teaching environmental education materials/concepts?

- Very positive
- Positive
- Neutral
- Negative
- Very negative

18. What other remarks would you like to make about incorporating instruction about the environment into your teaching?”
Appendix B

Schedule for Inservice

1. Introduction
2. History
3. Standards (examples)
4. Importance / Relevance
5. Internet
6. Activities
7. Resources

What is Environmental Education?
Specify what students should know and be able to do in relation to the Environment.

Awareness
-to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems

Knowledge
-to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems

Attitudes
-to help social groups and individuals acquire a set of values and feelings of concerns for the environment and motivation for actively participating in environmental improvement and protection

Skills
-to help social groups and individuals acquire skills for identifying and solving environmental problems

Participation
-to provide social and individuals with an opportunity to be actively involved at all levels in working toward resolution of environmental problems.

History

Tbilsi Declaration—Intergovernmental conference on EE

Two Hats—defined many of the myths of EE

Tragedy of the commons—destruction of common environmental areas.
Appendix C

Post Survey

Name: ____________________ Grade level you teach ______

Subject areas you teach _______________________________________

Are you male or female ___ Age ______ Class size ______

How long have you been teaching _____________ Type of Education ___BA ___BS ___MS in ______

1. Rate the following according to importance in a student’s education. While all may be important, assume that there is not enough time or money to do all of them. What priority would you give each in relation to the others? (1 Very important, 2 Quite important, 3 Moderate importance, 4 Not too important and 5 Unimportant.)

__ Music education __ Extra curricular clubs __ Art education

__ Science education __ Reading education __ Literature education

__ Math education __ Environmental education __ Consumer education

__ Vocational education __ Sports

2. “How many times per year do you take your students outdoors on the school site to teach about the environment?”

0 1 2 3 4 5 6 more than 6

3. If you do go outside, what subject area(s) do you cover?

__ Art __ Physical Education __ Social studies __ Environmental education __ Music_

Science __ Language Arts __ Mathematics __ Other ________________

4. What do you perceive is your principal’s attitude about teaching outside the building?

__ Strongly opposed __ Discouraging __ Neutral __ Encouraging __ Very encouraging

5. How often do you take a field trip with your class?

0 1 2 3 4 5 6 more than 6

6. Where do you take them? __ Mostly outdoor areas __ Mostly indoor areas

7. Please indicate which of the following factors either prevent you from taking field trips or worry you greatly if you take them. (Put a P for prevent and W for worry)

__ Problems getting transportation __ Liability worries __ Your health

__ Hard to arrange with other teachers __ Principal’s attitude __ Safety of the children

__ Availability of resource people __ Attitudes of other teachers __ Cost of trip

__ Too much else to get done in classroom __ Not enough places to go __ Distance

__ Not enough information about where to go __ Student trips not pertinent to the subject

__ Other (Please Describe)
8. How often do you teach environmental education materials/concepts?

Never 1—3 times per year 4—6 times per year 7—10 times per year 11+ times per year

9. Please indicate how comfortable you feel when teaching environmental education concepts?

Very comfortable comfortable neutral uncomfortable Very uncomfortable

10. When you teach environmental education concepts, how successful do you believe you are that students learn the concepts you taught?

very successful successful neutral unsuccessful very unsuccessful

11. Please rate how easy it is for you to infuse environmental education materials into the classroom.

very easy easy neutral hard very hard

12. How many different subject areas do you infuse environmental education materials into?

_1 2 3 4 5 6+

13. Which subject is the easiest to infuse with environmental education materials?

________

14. Do you think you would benefit if someone would show you some of the different environmental education materials available to you?

yes no

15. Would you attend another environmental education inservice if it were offered.

yes no

16. Would you share environmental education materials/concepts with other teachers?

yes no

17. What is your overall attitude about teaching environmental education materials/concepts?

very positive positive neutral negative very negative

18. What other remarks would you like to make about incorporating instruction about the environment into your teaching?

19. Did you infuse any of the materials you received from the Environmental Education inservice into your classroom.

yes no

20. If yes what materials did you use?

21. When would the best time that your would be able to attend another inservice.

Beginning of the School year Middle of the school year End of the School year
Appendix D

Website Information

The following was the web page that was used to help advertise the inservice.

Welcome To The Official Site Of The
Hortonville Area School District
"Home of the Polar Bear"
246 N. Okl St.
Hortonville, WI 54944
Gregory A. Joseph Ph.D. District Administrator

Title: Infusing Environmental Education

Presenter: Scott Resch, High School Science Teacher

Date: Thursday, September 27, 2001

Time: 3:45 - 4:45 p.m.

Location: High School Science Room E121

Description: Teachers will participate in various activities and will be provided with many other activities that can be used with their classes. Although this presentation will focus on learning activities designed for elementary instruction, relevant activities for middle and high school levels can also be provided for those who are interested. So that the appropriate materials can be compiled for each participant, please register with Pauline O'Keefe, curriculum secretary (paulineokeefe@hasd.org or 779-7901/ext 5516), on or before Monday, September 24th.
Appendix E

**Average Teacher Response**

The following is an explanation of survey questions that refer to feelings/emotions of teachers.

Each of the questions that teachers responded to a feeling/emotion a point value was given to the emotion. The point value that was given was 2 for the most positive feeling/emotion, 1 for the next most positive, 0 for neutral, -1 for a negative feeling/emotion, and -2 for the most negative feeling/emotion. The next step was to determine the total number of responses by teachers for each feeling/emotion. Then the total number of responses was multiplied by the point value given to the feeling/emotion. The new value or scored value was total and divided by the number of teachers surveyed. This number was the average feeling/emotion of the teachers. The average feeling/emotion was then compared between survey 1 and survey 2. See example below.

<table>
<thead>
<tr>
<th>Survey 1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Point Value</strong></td>
<td><strong>Emotion</strong></td>
<td><strong>Response</strong></td>
<td><strong>Scored value</strong></td>
</tr>
<tr>
<td>2</td>
<td>Very Successful</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>Successful</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>0</td>
<td>Neutral</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>-1</td>
<td>Unsuccessful</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>-2</td>
<td>Very Unsuccessful</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total =</strong></td>
<td><strong>9</strong></td>
<td><strong>8</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average Response =</strong></td>
<td><strong>.89</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Point Value</strong></td>
<td><strong>Emotion</strong></td>
<td><strong>Response</strong></td>
<td><strong>Scored value</strong></td>
</tr>
<tr>
<td>2</td>
<td>Very Successful</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>Successful</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>0</td>
<td>Neutral</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>-1</td>
<td>Unsuccessful</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>-2</td>
<td>Very Unsuccessful</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total =</strong></td>
<td><strong>9</strong></td>
<td><strong>10</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average Response =</strong></td>
<td><strong>1.11</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The total scored value is divided by total response to give the Average Response.

Once an Average Response is determined for Survey 1 and Survey 2 a comparison can be made.