



Sharing Our Pathways

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A newsletter of the Alaska Rural Systemic Initiative

Alaska Federation of Natives ♦ University of Alaska ♦ National Science Foundation ♦ Annenberg Rural Challenge

Year Two Initiatives Bring Exciting New Challenges

by Dorothy M. Larson

The Alaska Native Rural Education Consortium met in Anchorage on November 18–19, 1996. We had excellent attendance at the meeting with memorandum of agreement (MOA) partners, regional and village representatives, State Department of Education representatives, other agency and organization participants, elders and staff. Visitors included other National Science Foundation project coordinators interested in learning about the Alaska RSI initiatives. Updates and status reports were provided by the co-directors Larson, Kawagley and Barnhardt for both the Alaska Rural Systemic Initiative and the Alaska Rural Challenge projects.

Informative reports from each of the MOA partners demonstrate that many things are happening in each of the five cultural regions—much more than we would have dreamed of a year ago when we began the project. It has been a truly remarkable year with all the activities, the progress, the positive involvement of the elders, communities, MOA partners and

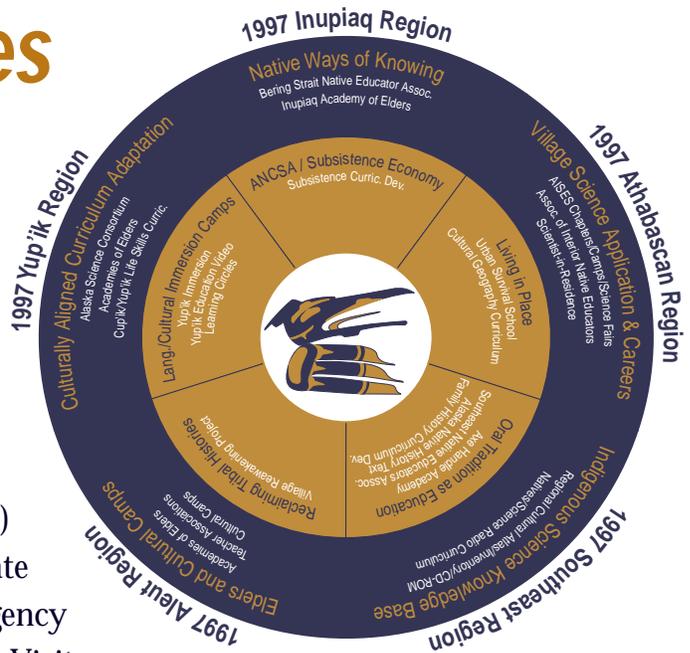
others who are interested in becoming involved.

With the Alaska Rural Challenge up and running, we would like to take this opportunity to introduce Harold Napoleon, coordinator for the Reclaiming Tribal Histories initiative. Harold will be working in the Aleut region with Moses Dirks, Aleut regional coordinator. Harold is no stranger to

rural Alaska, hailing from Hooper Bay. Welcome aboard, Harold!

Time was spent in regional working groups to plan and strategize for the Year Two initiatives. The regional coordinators had a tremendous amount of work to accomplish and did an excellent job in coordinating the initiatives within their regions, establishing Elders Councils, working with a diverse group within their own regions and working with one another collaboratively as a team. The consortium meeting, attended by the staff and MOA partners of the project, is extremely important in the imple-

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mentation of the Year Two initiatives, to get a reading on the status of Year One initiatives and how to transition from one initiative to another. We applaud the elders for their involvement, patience and wisdom as we see how indigenous knowledge and practices can be appropriate in this age of technology and information. We are looking forward to continuing our quest to make that knowledge an integral part of the teaching and learning for rural students—especially in math and science.

Guest speakers included Sharon John, science teacher at the Kanangaq Program at West High School in Anchorage, and Mark John, a graduate student at the University of Alaska Anchorage who spoke on how he is able to use his skills as a traditional hunter, gatherer and fisherman in and around the city.

Prior to the consortium meeting, many of the elders and partners were available to participate in the working groups which were formed to discuss topics such as Indigenous Curriculum Frameworks, Cultural and Intellectual Property Rights, Native Educators Network and the Regional Cultural Atlases. The group feels an urgency to discuss and develop a policy statement which will guide our work as it relates to the cultural and intellectual property rights on the information, stories and other sensitive areas that can impact the work

that we are involved in.

Year Two will begin on January 1, 1997 so that the two projects, the Alaska RSI and the Alaska Rural Challenge, are synchronized on a calendar year and the initiatives will be concurrent. This next year the staff will be working a twelve-month year rather than the ten-month year.

On behalf of the co-directors, I would like to express thanks to all the consortium members for their active participation. It is their involvement that will insure the success of the Alaska RSI and Alaska Rural Challenge. Thanks to our dedicated staff: regional coordinators Amy Van Hatten, Barbara Liu, Moses Dirks, Elmer Jackson and Andy Hope and Gail Pass, Shirley Moto and Harold Napoleon in Anchorage. We also extend our thanks and appreciation to Paula Elmes, Lolly Carpluk, Linda M. Evans, Dixie Dayo and Jeannie O'Malley-Keyes in Fairbanks. A special thanks to the many elders involved with the Alaska RSI projects across the state. Without this team of hardworking, professional individuals, we would not be able to continue to keep up the pace and to accomplish the work outlined in the initiatives.

We were recently informed by Dr. Gerald Gipp, NSF Program Officer, that the funding for Year Two initiatives has been approved. We look forward to continuing and establishing a new partnership for 1997. ♦

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Teaching and Learning Across Cultures: Strategies for Success

by Ray Barnhardt

The following is the first of three excerpts from an article addressed to teachers who are seeking guidance on how to best enter a new cultural/community/school setting and make a constructive contribution to the education of the children in that setting. The remaining excerpts will appear in next two issues of Sharing Our Pathways.

You have just been hired to teach in a cultural setting with which you have had little if any previous experience. How can you enter into and learn about that community in a manner that will maximize your chances of making a positive contribution to the educational experiences of the students with whom you will work? There are no simple prescriptions in response to that question, but there are strategies you can draw upon to guide you into a new teaching situation and help you adapt your teaching practices to better serve the unique educational needs of that cultural community. The compilation of tips and advice that follows is a distillation of the experiences of many educators who have learned to adapt their work to the physical and cultural environment in which they are located. Although the author's experiences have been drawn mostly from work in Native villages in rural Alaska and are those of a non-Native educator, the issues will be addressed in ways that are applicable in any setting involving people from diverse cultural backgrounds.

While a condensed version of such a complex subject runs the risk of over-simplification and misinterpretation, it is offered here as a starting point for an on-going journey of personal exploration and cross-cultural sensitization that each of us as educators must undertake if we are to relate to people from other cultural backgrounds in a respectful and constructive manner. When we learn to relate to each other and teach in a culturally considerate way, we benefit not only those with whom we work, but we benefit ourselves as well. We are all

cultural beings, and accelerating changes in the makeup of the world around us makes that fact an increasingly obvious and inescapable aspect of our daily existence. How then can we take culture into account in our work as educators?

How do you enter a new cultural community?

First impressions count! The way you present yourself to people in a new community will have a lasting impact on how they perceive and relate to you, and consequently on how

you perceive them. This is especially true in a small village where everyone lives in close proximity to one another, but it is also true in the context of classrooms as micro-communities. The first thing to remember is that many other teachers have come and gone before you, so students and parents have developed their own ways of making sense out of their relationships with strangers. While this may be a new experience for you, it is not for the host community. The background and perspective you bring to the situation, particularly in terms of cross-cultural experience, will have a major bearing on how you present yourself in a new setting. If you have taught previously in a comparable community, or are yourself from a similar cultural background (e.g., a Native teacher), you will have relationships and experiences to build upon when you enter the new community that a beginning teacher without that prior experience will not have available. For the purpose of making these limited observations as useful as possible, the emphasis here will be on the latter situation, where the teacher is assumed to be starting from scratch in a new cultural situation.

The biggest challenge you face is getting to know people on their own terms and letting them get to know you as a person, rather than just as a "teacher." The tendency for people who make their living off the printed word is to turn to the nearest library or bookstore when confronted with a new situation about which they lack information. While it may be useful to acquire some basic factual information about your new cultural home beforehand, most of what you need to

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know about the people and community you will be working with is probably best acquired firsthand, with minimal influence from someone else's perceptual filters. The fewer prior conceptions and the less cultural baggage that you carry into the situation, the more likely that you will be able to avoid jumping to superficial conclusions, leaving you free to learn what it takes to make a constructive entry into the local flow of life.

There are many layers of shared understandings in any cultural community, and for an outsider to even begin to recognize that the deeper layers exist requires a considerable openness of mind and a great deal of time and effort. Our first impressions of a new culture are usually formed in response to the more obvious surface aspects that we can see, hear, and relate to our own prior experience, so it is important to withhold judgment and defer closure on our interpretation of behavior and events as long as possible. Once we arrive at a conclusion or form an opinion, we begin to rely on that explanation for guiding our subsequent behavior and hesitate to assimilate new information that may lead to a deeper understanding. The resulting myopia can contribute to numerous problems, including inappropriately low expectations regarding student abilities.

You can minimize the potential problems outlined above and accelerate your immersion into a new cultural community in a number of ways. If the opportunity exists, one of the most useful steps you can take is to get involved in the community as early as possible, preferably before you assume the role of teacher. Let people get to know you as a person first, and this will have enormous payoff in everything that you do as a teacher. If possible and appropriate, get involved in the community where your students live early enough to join in traditional summer activities, so you

can get to know people on their terms and begin to see life through their eyes. This will enable you to make your lessons much more meaningful for your students, and it will open up avenues of communication that will be beneficial to everyone involved.

If you are looking for a place to live, consider how your housing and life style will set you off from, or help you blend into the community. While housing that sets you apart from the community may be convenient (when available), you pay a price in terms of your relationship to the rest of the community. Whenever possible, choose immersion over isolation, but don't forget who you are in the process. You will be more respected for being yourself (assuming you are considerate and respectful) than for

“going Native.” Seek advice from the practitioners of the culture in which you are situated, and always convey respect for their ways, recognizing that you are a guest in someone else's community. If you encounter situations of apparent social breakdown and dysfunctionality, be especially careful to exercise discretion and obtain the views of others before you take any precipitous action.

The most important consideration when entering a new cultural community is keeping an open mind and accepting people on their own terms. A little attention to how you present yourself in the beginning can make a big difference in your relationships for the remainder of your stay in the community. First impressions do count! ♦



Alaska First Nations Research Network

by Angayuqaq Oscar Kawagley

Mokakit—to strive for wisdom. What a singularly appropriate word that our Canadian relatives share with us, the Alaska Native people. With the goals and objectives of the Alaska Rural Systemic Initiative and Alaska Rural Challenge, it is timely that Alaska Native educators, teachers, teacher aides, bilingual teachers, parents and elders establish a chapter of Mokakit called the Alaska First Nations Research Network (AFNRN).

The objectives of Mokakit are:

- to foster higher education among First Nations,
- to promote and enhance individual and group research initiatives,
- to review and highlight current research information,
- to organize and host conferences related to Mokakit concerns,
- to conduct workshops and seminars in research methodology,
- to provide a resource base for First Nations communities,
- to maintain an inventory of research studies in Native education,
- to identify critical areas for research in Native education

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which are not being addressed and

- to encourage Native graduate students to address these areas in their research theses and dissertations.

The objectives are certainly those to which we subscribe. As we embark on pathways to Native education, to include Native languages, ecosophy, spirituality and lifeways, and seek ways to incorporate English and the various disciplines from the Western world to the newly developed courses of study, calls for such an organization. Ecosophy is the seeking of wisdom from the ecological system in which one finds oneself. Nature is the university of the universe. Ellam Yua has placed many models of knowing within it, all we need to do is seek with mind and soul to get a sense of knowing and letting it work in our lives. For example, we get a message of wonder from the raven—it is never bored and it is constantly exploring its surroundings. Water has the ability to take the form of its container and yet has the potential of awesome power. From it, we learn patience and the practice of soft power. The objectives as recounted above are qualitative and comprehensive. They will help in setting ways to assess the change processes in Native language acquisition and learning of Native ways of creating identity, developing uniqueness, seeking natural models of knowing and getting a sense of accomplishment. Educators who are trained in research must begin to develop partnerships with teachers, aides, parents and elders in doing research. We realize that trained researchers are not the only ones capable of doing noteworthy and useful research. On behalf of Mokakit and AFNRN, I encourage anyone interested in education to join as we need all the expertise that is out there. ♦

AISES Corner (American Indian Science and Engineering Society)

by Claudette Bradley-Kawagley

Congratulations! The University of Alaska Fairbanks AISES Chapter has won the Zanin Award for the Most Outstanding Chapter of the Year 1996 at the 18th National AISES Conference in Salt Lake City, November 14–17, 1996. Ten UAF students attended:

Sasha Atuk, Fairbanks
 Mark Blair, Kotzebue/Detroit
 John Henry, Stebbins
 Jason Huffman, Huslia
 Shay Huntington-McEwen, Galena
 Kim Ivie, Fairbanks
 Carleen Jack, Stebbins
 Patience Merculief, St. Paul
 Mike Orr, Bethel
 Stefan Rearden, Bethel

Oscar Kawagley spoke about the Alaska Rural Systemic Initiative on the Traditional Knowledge and Science Panel during the concurrent sessions at the conference. He attended a book signing at the career fair for his book, *A Yupiaq Worldview: A Pathway to Ecology and Spirit*. During the precollege teacher meetings Oscar gave a talk on Native ways of knowing and Claudette Bradley-Kawagley spoke on tessellation patterns in mathematics. In addition, four teachers from the Arctic Region AISES Professional Chapter attended the conference:

Bernadette Alvanna-Stimpfle, Nome
 Edna Apatiki, Gambell
 Arva Carlson, Barrow
 Debra Webber-Werle, Noatak

Everyone enjoyed the conference with its informational workshops, large banquet dinners and many inspirational speeches.

The Arctic Regional AISES liaison teachers attended a workshop in Nome, November 8–10, 1996. Teachers wrote lesson plans for AISES precollege chapter/clubs. Chip McMillan of UAF School of Education will write a manual with the lesson plans and summary of the talks on Native Science. This manual will be distributed to every school in the Inupiaq region.

The teachers planned for the science fair projects to begin in the spring. The data collection will occur during the summer months and students will assemble their display boards in the fall.

The science fair will take place in a village of the Northwest Arctic School District November 20–22, 1997. The science fair will have an opening ceremony with Native dancing. The elders council will judge the projects as well as the teachers and scientists. Students will have two sets of awards: one given by the elders and one given by teachers and/or scientists. We hope students will have many projects dealing with issues of Native science and village science application. ♦

Alaska Native Science Commission Update

(Excerpts taken from the Status Report for AFN Convention 1996)

Highlighted Activities

1. Project & grant awards received by the Alaska Native Science Commission (ANSC) include:

- a. Social Transition in the North: Two multi-year projects to oversee completion, collect data and archive materials from Alaska and the Russian Far East.
- b. Alaska Native Science Commission: A three-year project to begin implementation of the goals and objectives of the ANSC and to develop plans for creating an independent organization.
- c. Arctic Contaminants Science Plan: A joint project of the University of Alaska Anchorage, Institute of Social & Economic Development and ANSC to augment Native involvement in assessment of impacts of contaminants on subsistence food harvests.

2. Inter-agency agreements between ANSC and agencies such as the Arctic Research Commission, Arctic Research Consortium of the United States, National Oceanic & Atmospheric Administration and Environmental Protection Agency are in process to address issues of information, communication, opportunities, funding, cooperation and compatible goals.

3. Considerable effort has gone into developing ties with scientific and Native organizations involved in Arctic research. These linkages include the National Science Foundation, Environmental Protection Agency, Department of the Interior, Office of Naval Research, State Department of Fish & Game, Inuit Circumpolar Conference, National Research Council, National Marine Fisheries, State Department of Education, State Department of Health & Social Services, U. S. Arctic Network, Bureau of Indian

Affairs, Indian Health Service, American Public Health Association, International Union for Circumpolar Health, Exxon Valdez Oil Spill Trustee Council, Canadian First Nations, Alaska Rural Systemic Initiative, Eskimo Walrus & Whaling Commissions, North Slope Borough, RuralCAP, Harbor Seal Commission, Sea Otter Commission and the Indigenous People's Council on Marine Mammals.

4. The ANSC has conducted and participated in numerous conferences, meetings, panels and classes throughout Alaska, circumpolar countries and the U.S. to publicize the concept and creation of the Alaska Native Science Commission.

Structure

The ANSC solicited nominations from Native corporations and villages

throughout Alaska to form the Board of Commissioners. The names of the seven commissioners will be released by AFN shortly and represent the following groups:

- Alaska Native Education (2)
- Arctic Research Commission
- Elder
- Natural Resource Manager
- Scientist
- Teacher

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Village Science

by Alan Dick

Being creative produces a natural high. There is an enlightenment, a stimulation, an invigoration that comes from birthing an idea, a book, a teaching unit or a new adaptation of an old tool. For quite a while I was addicted to that high, and I couldn't do things according to the existing standard. I always had to try something new.

My first fishwheel was a total embarrassment. I left it in the water in the falltime knowing that it would drift with the ice in the spring.

The river raised, set the fishwheel on top of the bank and then the ice broke, leaving the fishwheel behind. I had to look at it for three more years until a merciful breakup removed the reminder of my addiction to ingenu-

ity. Another time I built a boat. I wanted to see how a boat would run if it were very long and narrow. It paddled nicely, but when I put a small motor on it, I had to lay on the floor to pull the starter rope since it was so tippy. Once it got going, it was stable, but my heart pounded for several hours after I slowed down again to

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land. I decided that it was definitely unsafe so I let it drift thinking that someone would make a campfire with it in a driftwood pile someday. Two days later I heard a boat land in front of our cabin. Someone returned the boat thinking that they were doing me a favor. My addiction to ingenuity caught up with me again. I should have taken more time talking with people who understood boats or should have burned the thing. There have been other boats, stoves, sleds, houses and projects that had similar fates. I built a boat in Telida that had wings. I snuck to the river on the day of its maiden voyage, but the whole village appeared on the bank when I pushed out for its trial. I planned to skim on top of the water, even in shallow places, with the wide wing of my wing-boat. I had seen it many times in my mind. My wife suffered the embarrassment of being in the boat with me as we spun around and around in circles. We were barely able to move upstream. We growled at each other a bit, not loud enough for the villagers to hear, but strongly enough to vent—her mortification at being seen in such a boat, and me that my dream was refusing to enter reality.

When I was told the theme of this newsletter is to acknowledge existing materials that are successful, I had many positive examples in mind, but was overcome by a compulsion to honesty. Some of my greatest visions worked well in the realm of imagination and balked when they encountered the scientific reality. Recently, I went through the warehouse of the local school district. I found many works, the dust of which has collected dust. Those materials were generated by people no less sincere than we are. They too had a vision and enthusiasm. Why aren't the materials in use? With some, the ideas were great, but the formatting was poor.

With others the graphics left too much to be desired. With others the teachers' editions were not teacher friendly, and with others they seem to have been generated with a different spirit or vision.

We are not the first ones to recognize the need for relevant curriculum and methods. However we must learn from those who have gone before us or we too will produce dust collectors. The test for a student is the scoring of the teacher-produced questions. Our test is whether our works continue to travel by themselves.

Some previous works perished

because their timing was wrong. They were gems before their time. I believe that some of the works with the thickest accumulation of dust have the greatest lessons. I have personally abandoned my addiction to innovation to want whatever is best for students, regardless of the source. Everything we need is already available from the minds of the elders, from the work of the past and the energies of those currently creating. We must gather it in the right way, the right spirit, and in the right time. Now is that time. ♦

Funds for Professional Development Available from SMCNWS

The Science and Math Consortium for Northwest Schools has \$45,000 available to provide partial funding for Alaskan projects that

- ▶ represent part of a sustained, systemic effort to improve math and science education
- ▶ will provide high-quality training for teachers and other educators
- ▶ include strong follow-up, dissemination and evaluation components and
- ▶ are in line with state and local standards for math and science.

Applications must be submitted by teams of two or more educators and are due on February 3, 1997. If you have not received application materials, and are interested in applying, please contact Stephanie Hoag at 463-4829 or 463-3446 (fax).

SMCNWS can also assist with planning, coordination, follow-up and evaluation of professional development activities. Note: As of publication date of this newsletter, funding is available for the Spring semester only.

KIDS 2000 Distance Education Courses

The Professional Education and Training Center at the University of Alaska Southeast (UAS) is offering KIDS 2000 distance education courses this spring. The courses' focus on standards in math, science and other subjects. Students in the courses will develop standards-based interdisciplinary teaching units to use in their classrooms. The units will be published and shared.

These courses would provide an excellent opportunity for Native and non-Native teachers to team up and produce culturally relevant curriculum materials with guidance and college credit available from UAS. The registration deadline for the courses was January 13 but if you want more information call 465-8748. ♦

Aleut Region

by Moses L. Dirks

The Aleut region of the Alaska Rural Systemic Initiative (Alaska RSI) has been active the last several months. In September two elder council meetings were held in the region, one in Kodiak and the other in Unalaska.

During our meetings, the elders in the Aleutian and Kodiak regions were asked which area of indigenous science they wished to concentrate on for fulfilling the Indigenous Science Knowledge Base initiative for this year.

Following are the areas of cultural knowledge that the elders thought to be important to focus on for the first year's initiative:

1. weather forecasting
2. navigation skills and survival
3. foods-preparation and preservation
4. building and design (barabaras, baidaikas)
5. edible plants

Once a final determination was made by the Aleut elders' councils, the memorandum of agreements (MOA) partners were asked to assist in developing a program compatible with goals of the elders. The University of Alaska Fairbanks Oral History department and the Kodiak Area Native Association were involved.

William Schneider and David Krupa of the Oral History department are presently helping us design the program for a regional cultural atlas on a CD-ROM for the region.

Once completed, users of the database will be able to click on topics of interest and either a) hear elders discuss topics or b) go to an annotated bibliography concerning the topic. Included will be photos to give users an idea of the area and maps have been drawn up and scanned into the database to orient users as well.

Kodiak Elders Council met again in

November to review what was completed thus far on the regional cultural atlas. No significant changes were made by the elders council to the CD-ROM atlas. Funding restrictions and lateness of the start of the project hindered efforts to have the regional atlas reviewed by the Aleutians Elders Council. The regional cultural atlas is scheduled to be made available by the end of 1996.

The success of this project comes not only from the participating elders in our region, but also from the efforts of people who took the time to prepare written transcriptions from tapes of the elders conferences held in Kodiak and Unalaska. Thanks go to Kathy Turco for recording the elders sessions, Barbara Svarny Carlson for transcribing the Unalaska (Aleut) elders conference tapes and Sabrina Sutton of the Kodiak Area Native Association for transcription of the Kodiak elders' conference tapes. Recognition and thanks go to those who compiled the bibliographic resources presently available that reflect the topic areas identified by elders' councils for the Alutiiq region: Dr. Nancy Yaw Davis, Elizabeth Williams and Connie Hogue. In the Aleutian Island region, Raymond Hudson, Suzi Golodoff and Sherry Ruberg provided assistance in the bibliographic search.

The Aleut Region is getting ready for 1997 and its new initiative entitled Elders and Cultural Camps. Our plan is to work with regional organizations and school districts to form partnerships in the Aleut region. We are also

hoping to form Aleut/Alutiiq Native Teachers Associations that will, in turn, help develop a program together with elders in the Aleut region. Teachers and elders will assist in curriculum development through this program. Regional elders who specialize in indigenous life and survival skills will be consulted as mentors and teachers in conducting cultural teachings and activities in the camps. Subjects from butchering seals, preparing fish and buildings barabaras will be some of the topics we intend to develop. The product will be a video documentation of elders' camp activities as well as school curriculum to be used in the Aleut region. This will be made available for future integration in schools once it is completed. If you know of anyone who is interested and has the facilities to work with us in conducting camps in this initiative, please contact me at the Alaska Federation of Natives.

New to the program this coming year also is the Annenberg Rural Challenge (ARC). This project will provide the opportunity to focus on the social studies area and will optimize the Alaska RSI program goals of implementing additional aspects of Native ways of knowing into the school curricula. The 1997 initiative for the ARC will be Reclaiming Tribal Histories. Harold Napoleon will be contacting local governments in the Aleut Region to determine which communities might be interested in participating in this initiative. Please contact Harold or me at the AFN office if you are interested in learning more about this project.

We have started our rounds in visiting school districts and regional organizations to solicit interest in the Aleut region. The following preliminary contacts have been made thus far: Aleutian/Pribilof Islands Association, Kodiak Area Native Association, Kodiak Island Borough School

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District, Afognak Native Corporation and the University of Alaska Fairbanks Rural Education Department. All preliminary visits have been positive and helpful in the effort to de-

velop Native Ways of Knowing in the Aleut region.

If there are any questions, comments or suggestions concerning the Alaska RSI or the ARC projects, please don't hesitate to call on me. ♦

Cultural Innovation at Netsvetov

by *Ethan Petticrew*

Aang-aang! Exciting and new things are happening at Atka's Netsvetov School. The staff, community and school board are busy creating a curriculum that is radically different from the traditional American approach to education. Through this revision of curriculum, we thoroughly believe that we are creating an atmosphere in which our students can excel at their own pace in both western and Unangan education. Although this is an arduous task, the size of the school makes it somewhat simpler than if it were a large school setting. There are twenty-two students from K–12. The staff consists of three certified teachers (two are Aleut), one bilingual teacher and a secretary who is adept at handling bilingual classes and also teaches a reading group everyday. Through the cooperation of these individuals we are able to give the students a strong background in education, combined with traditional Unangan practices and values.

The highlight of our school is the dance group which was started several years ago. This group, *Atxam Taligisniikangis*, has made great leaps in the last year. It has built pride in our cultural self-esteem, created a greater awareness of what it is to be Unangan, revived ancient rituals and dances, and has spawned a hunger to learn as much about our ancestors as possible in this day and age by our students. The group has performed in many places around the state, and is

constantly getting requests and invitations to perform all over the country. In the past, we have performed for Alaska Federation of Natives, the Metropolitan of the Russian Orthodox Church and last year we were selected to represent all of Alaska at the Arctic Winter Games. Each student at the school is required to take this class daily. It has replaced "traditional" physical education (P.E.) classes at the school. Students who want to do other P.E. activities are encouraged to attend open gym night. This is radically different than other schools who make Native dancing an extra curricular activity. Students attend dance class daily with enthusiasm. In fact, if the class is canceled for reasons related to scheduling, then our students are disappointed and on

the verge of revolution. The group not only uses ancient dances, but also creates dances from traditional stories and from every day life in our islands. The use of the old stories in our dances has created a greater understanding of the natural and supernatural world as seen by our ancestors—something that was overlooked and scorned as useless by the Western educators of the past. Needless to say, dancing is back and very strong in the Aleutians. Now we are committed to revising our entire curriculum to reflect the practices and philosophy of our ancestors. The revival of dancing at Netsvetov School has overflowed into all other subject areas.

The Unangan language class is currently engaged in building an *ulasux*. This is a traditional Aleut sod house. The applications for applying knowledge learned in the construction of this house are vast and not only do the students learn the Aleut terms for every part of the house, but it can also be tied into Aleut and Western math. It is wonderful to see the students so excited about learning language and, finally, math. This house will serve a number of purposes when it is finished, some of which are the launch-

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Atxam Taligisniikangis members back row: Jimmy Prokopeuff, Crystal Swetzo, Ethan Petticrew and Debbie Prokopeuff. Front row: Tina Golodoff, Larisa Prokopeuff, Louise Nevzoroff, Lucinda Nevzoroff, Mary Swetzo and Nancy Zaohne. Not shown are Sally Swetzo, Jason Dirks and Annlillian Nevzoroff.

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ing and training area for the *iqyax* (kayak) project. This project will be completed within the next two years. Students are also looking forward to the day when we can hold a traditional dance in the house.

In the past few years the school has also had a number of important cultural projects which took place. These include Aleut bentwood hunting hats, beaded headdresses and drum-making. All of these activities have incorporated traditional patterns and measurements with Western-style math. The primary grades spent a good part of last year studying the old patterns in both the traditional regalia and beadwork. We believe that this activity truly helped our students in understanding the concept of patterns, which made the transfer to Westernized math patterns much easier. Last year's high school history class spent a majority of their time studying traditional Aleut society. Topics included: Aleut tribes, social structure, kinship, laws and consequences, environmental factors, life cycles, gender roles and traditional religious beliefs. In the future we will be having school-wide classes in gut skin-sewing, sealskin pants sewing and construction of an *iqyax*.

As a result of immersing our students in a strong cultural program and seeing the educational benefits and positive results, we are moving forward and committed to improving instruction in all areas of our curriculum. This has brought us to our present position in revising curriculum.

Currently, we have begun work on our science curriculum. We have just finished aligning our benchmarks and standards with state and federal standards. The next step for us will be to define materials and activities in which to attain these goals with our students. It is our desire to incorporate the knowledge of elders in designing these activities and materials,

so that we have a balance of Western and traditional Aleut influences. We hope to implement our science curriculum in the fall. This spring we will begin to revise our math curriculum in the same manner. Over the next three years we are hoping to have our entire curriculum revised and fully implemented in the daily learning of our students. This is a slow process, but then again, Western education

has taken years to undo the educational practices developed by our ancestors over thousands of years. In the future, we hope our students will be better able to understand our unique cultural values and to make wise decisions in a modern world with all of its challenges. After all, when we look through the eyes of our ancestors perhaps our vision will be clearer. ♦

Athabaskan Region

by Amy Van Hatten

The amazing Alaska Rural Systemic Initiative staff, partners and, more importantly, the elders have made this an exciting year for me. In my opinion they gave restitution to what our elders have been saying for a very long time about nature and the beauty of it.

You will read in other articles about spirituality, harmony, sharing, love for others, coordination for mutual benefits and many priceless efforts made by Alaskans. Your eyes will follow sentences that are written to tell a story with an unknown voice to you but well known by someone as they remembered it. To me, it isn't just the echo of my parents' and grandparents' voices, but I can certainly identify with a portrayal of a more serene, pleasant way of life.

"Long before I wrote stories, I listened to stories. Listening for them is something more acute than listening to them. I suppose it's an early form of participation in what goes on. Listening children know stories are there. When their elders sit and begin, children are just waiting and hoping for one to come out, like a mouse from its hole."

—Eudora Welty, *One Writer's Beginning*, 1983

This is a story I see as a mutual relationship between the beavers' lifestyle and the Alaska RSI people. Beavers are important both spiritually and economically to the Athabaskan people. I wanted to list some comparisons. Read it like you would be looking at the flip side of a coin.

Have you ever heard the expression "busy as a beaver"? It is a true aphorism especially for beaver mammals in late summer and early fall. That is when they get ready for winter.

Beavers probably got that reputation because they can gnaw at a tree until its down and store it for future use without much delay. Their survival is dependent on it. Through the Alaska RSI program our future generation is dependent on our joint admirable interests and vision for integrating indig-

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enous knowledge with western knowledge.

By nature beavers play an important role in ecology. Their behavior influences the local environment as they change the streams and sloughs into ponds by building dams. Their dams create an important habitat for themselves and for other animals—invertebrates, birds, etc. Today, from diverse backgrounds, we are pooling resources and building on our goals and objectives for our approach to rural educational systems. While networking for a historical change, we should not ignore one system or cast one out, but integrate them, using oral traditions with textbooks, not just textbook to textbook.

Beavers are admirably suited for their habitat. Our rural elders are best suited as our guides, mentors and councils since they have experienced living with nature which we lack, to a certain degree, at the moment.

Beavers have sharp teeth, like chisels. Our elders have sharp minds and wisdom of the environment, animals and human nature.

Beavers have extended family responsibilities and are family oriented. Like them, we recognize the importance of treating one another as equals, extending a helping hand, and providing additional environments for learning, laughing and living a productive life.

Beavers are busy, busy, busy in late summer and early fall. Like them, we are gathering data, recording, and documenting elder cultural activities.

Beavers use their tail for balance. Like them, we know who to lean on and who can support our efforts in breaking new ground until we are strong enough to stand on our own.

Beaver tails are made up of fat. That storage can be used to sustain the beaver until food becomes available during scarce times. Like them, we store information that we gather

so it can be used extensively beyond the year 2000. It is important information that will overlap from time to time, from one area to another.

Young beavers, after several years, head up or down stream to find mates, build dams and a lodge of their own. As Alaska RSI participants, we adopt new partners through MOAs and other initiatives that reinforce synergistic processes as a whole.

Beaver lodges usually include an older, mated pair, young from the previous year and young of the current year living and working together. We are closely connected to encourage trying our new ideas while relating to people from the outside.

Beavers are interesting and unusual animals, like some people.

Beavers start families all over again. Like us. Welcome to our big family! Thank you. ♦

Alaska's First Tribal School

by Patricia Wade

Chickaloon Village's Ya Ne Dah Ah School is Alaska's only Tribal school. It began four years ago when Elder Katherine Wade decided that the old ways would soon be lost if she didn't teach them to the children.

During the first summer, we held our school on Saturday afternoons. Katherine began to teach the Athabaskan language, ancient legends (called *ya ne dah ah*), history, culture and beadwork. It was lots of fun and when falltime rolled around, the children decided, along with the parents, that they would rather go to a tribal school than back to public school.

We asked the Bureau of Indian Affairs (BIA) for assistance, but all they did was condemn our dilapidated, old building. So we went ahead on our own, with volunteers for teachers, and put the children on correspondence courses.

We have had as many as nine students in grades ranging from kindergarten to 11th. The morning hours are spent working on regular correspondence schoolwork.

The afternoons are devoted to cultural activities. Students are currently making Athabaskan dolls. Some of their activities include field trips into the woods to identify different markings, lessons in environmental caretaking of the land, our family tree and

how we're all related, *ya ne dah ah* stories, and singing the old Indian songs while dancing and drumming. They have also made up some new Indian songs using Athabaskan words.

During the last ten or fifteen minutes of the school day, the students do janitorial work, washing dishes, sweeping, mopping and dusting.

I work with the students on Tuesday afternoons to keep them updated on all of the activities of our tribe. As potential future Chickaloon Village leaders, they are benefiting from the Ya Ne Dah Ah School teachings.

They are taught to respect the elders, the earth and each other. The *ya ne dah ah* stories have wonderful lessons and morals. Some of the characters are so outrageous they make perfect examples of someone you definitely don't want to act like!

Although Alaska's only tribal school runs on a shoestring budget, it has been very successful in giving our children an opportunity to receive their education in a friendly, warm atmosphere where they are allowed to have pride in their heritage. ♦

Inupiaq Region

by Elmer Jackson

I will begin this report by introducing the next Alaska RSI initiative for the Inupiaq region on Native Ways of Knowing. The initiative will run through December 31, 1997. The following are memorandum of agreements between the Alaska Federation of Natives and the organizations in the Inupiaq region.

Northwest Arctic Borough School District (NWABSD), North Slope Borough School District (NSBSD), Bering Straits School District (BSSD), and Nome City School District (NCSB) will host a district-wide subsistence curriculum development workshop that produces curriculum resources reflecting subsistence practices of the region and utilizing indigenous knowledge and the way of teaching. They will also participate in the regional Academy of Elders in which they and the Native educators will work on the development of indigenous curriculum resources for use in the schools.

Ilisagvik College will participate in the development of a prototype curriculum framework based on Inupiaq cultural precepts and principles that will be shared with the other districts in the Inupiaq region. They will provide support for the documentation of Inupiaq Ways of Knowing. Ilisagvik College will also assist in supporting the activities of the North Slope Inupiaq Educators Association, which will provide guidance for the implementation of an Inupiaq Academy of Elders, drawing on the support of the Ciulistet Yup'ik teachers and the Association of Interior Native Educators.

Kawerak, Inc. will provide support for the documentation of Inupiaq Ways of Knowing and Teaching that can serve as the basis for the teaching of all subjects in the schools. They will participate in the development of a prototype curriculum framework

based on Inupiaq cultural precepts and principles that will be shared with the other districts in the Inupiaq regions. Finally they will assist in the establishment of a Bering Strait Native Educators Association that will provide guidance for the implementation of an Academy of Elders drawing on the support of the Association of Interior Native Educators.

The BSSD will also utilize the Native educators to assemble and document Siberian Yup'ik and Inupiaq curriculum resources that can be utilized to bring indigenous knowledge and perspective into the school curriculum.

The American Indian Science and Engineering Society (AISES) chapters are coming to a reality in the Inupiaq region. Thanks to those who have committed their time for the Alaska RSI project. When you begin planning, fundraising, etc., local governments such as the traditional councils or IRA councils, city governments and search and rescue organizations are always willing to donate money to support school functions. Start planning your science project for the science fair to be held somewhere in the Inupiaq region. Our elders will assist in the judging of the science fair projects.

AISES project coordinator, Claudette Bradley-Kawagley and teacher liaisons attended the 1996 AISES conference held in Salt Lake City, Utah. We will read their reports in the next issue of *Sharing Our Pathways*. I will give you an update on the progress of the AISES chapters and the Scientist-in-Residence program. If you have any questions or concerns, call me at (907) 475-2257.

Happy New Year! ♦

Making the Old Way Count

by Wm. Clark Bartley

The history of the development of Inupiaq mathematics in the schools of the North Slope Borough School District has been a kind of spontaneous explosion of energy, beginning in one small school on a remote island in the Arctic Ocean and reverberating across the North Slope. It has been a phenomenon that was both unplanned and unexpected. It is a story of discovery that has brought with it the energy to catapult Inupiaq mathematics into international attention, and within just over two years since its inception, it is being taught in classrooms across the North Slope—from young children in the Early Child-

hood Education (ECE) Immersion program in Barrow, Alaska to adults in college classes. Students from Point Hope to Barter Island have actually been discovering how to do math a different way, based on the genius of their traditional Inupiaq counting system.

Prior to the invention of the Kaktovik Inupiaq numerals, the numbers of the Inupiaq language were falling into disuse and, except for the lower numbers, were being forgotten. The Inupiaq counting system had almost become a relic from the past even for the most fluent Inupiaq speaker.

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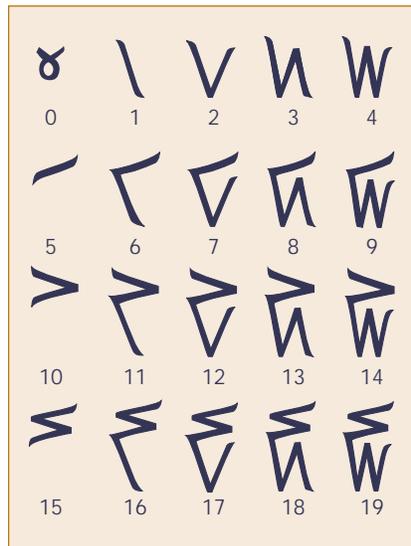
ers. Consequently, there are Inupiaq speakers who have had only a rudimentary understanding of their own traditional number system.

The Kaktovik Inupiaq numerals began as an ordinary math enrichment activity at Kaveolook Middle School on Barter Island, but because of the remarkable simplicity of the system, it has caught on as a way of expressing, in symbols, the numbers of the Inupiaq language. It has gained recognition not only on the North Slope and in Alaska generally, but it has also gained attention nationally as well as internationally. In early September of 1994 at Harold Kaveolook School, students were exploring base-2 numbers in their middle-school math class. Some students mentioned that Inupiaq, their Eskimo dialect, has a base-20 system. They then decided to try to write the Inupiaq numbers with regular Arabic numerals, but found there were not enough symbols to write the Inupiaq numbers.

Upon creating ten extra symbols, the students found that the new symbols were difficult to learn and remember. They discussed the problem and tried different approaches. Finally they hit upon a system that was conceptually simple and reflected the Inupiaq oral counting system. After fine-tuning their new numeral symbols, the students then began to do simple addition and subtraction problems with them. To their amazement, they discovered that their numerals had a number of distinct advantages. It was easier to add and subtract with them than with Arabic numerals. Often the numerals almost gave the students the answer.

The students enjoyed the challenge of converting decimal numbers into the base-20 Kaktovik Inupiaq numerals. As they tried to convert increasingly larger numbers, they found that conversion was easier using counters with place value. This idea was then

extended into a form of a base-20 abacus. The students discussed the ideal structure of their abacus, got beads from the art teacher, experimented and finally built abacuses in the school shop. Since that time, they have found that because the base-20 Inupiaq abacus represents numbers in a similar way to their new numerals, it is easy to work with the abacus not only to convert, but also to add, subtract, multiply and even to di-



vide. Their Inupiaq abacus has become an important component of math education using the Kaktovik Inupiaq numerals. Inupiaq mathematics, to the extent that it now exists as a scholastic discipline, was born as a twin, on the heels of the Kaktovik Inupiaq numerals. As the students began to perform mathematical operations with their numerals more and more, they discovered that the symbols were powerful enough to be manipulated as symbols. It is as though the symbol itself is a kind of graphic math manipulative.

When the class began to experiment with division, they did it the same way they did when dividing decimal numbers. However, a few students noticed that part of the process can be simplified because of the visual

nature of the numerals they invented. Soon they had figured out how to do long division almost as though it was short division. Quite frequently, as students work with the numerals they have discovered shortcuts in math that cannot be done so easily with the Arabic numerals.

In the spring of 1995, the North Slope Borough Board of Education invited the students from Kaveolook School to fly to Barrow to present and explain their invention. Those who attended that presentation were impressed with the exciting educational possibilities opened up by this system. It is a system which is a direct reflection of the way one counts in Inupiaq. The underlying genius of the Inupiaq language has been crystallized in these numerals, making them useful for practical purposes.

As the 1995–96 school year began in August, the ECE immersion class in Barrow and the Inupiaq language classes in Wainwright and Point Lay began introducing the numerals into the classrooms. Teachers in other grades at the elementary school, the middle school, and even the high school in Barrow began introducing the system to their students. Ilisagvik, the local college, began introducing the numerals and their use to students across the North Slope by adding Inupiaq mathematics into its curriculum and its catalog and compressed video classes. By this time, a great deal had been discovered about the practical potential of the Kaktovik Inupiaq numerals, and the students and their teacher had managed to collect a great deal of material about other Arctic and Native American counting systems. The numerals have also been used exclusively (to the exclusion of Arabic numerals) in an ECE immersion program in Barrow and a complete textbook is being developed in the Inupiaq language to teach math, using the numerals, in the first-grade immersion classes. ♦

Southeast Region

by *Andy Hope*

I spent most of the month of November attending a series of workshops and meetings and in related year-end close-out activities. Here are some workshop highlights.

November 6–8, Juneau: Curriculum workshop with Richard and Nora Dauenhauer of Sealaska Heritage Foundation and Jackie Kookesh, a Tlingit math/science teacher. A Tlingit math curriculum guide will be produced as a result of this workshop. The math guide will be supplemented with a Tlingit country map and traditional Tlingit, Tsimshian and Haida calendars. The map will include surrounding First Nations and a comprehensive listing of traditional tribes and clans within each of the respective nations. Jackie Kookesh is the main author of this publication, with help from the Dauenhauers and myself. Illustrations will be produced by Jackie Kookesh and Harold Jacobs. The guide will be published in late December.

November 12–13, Data collection workshop, Sitka: This workshop was facilitated by Jana Garcia, a Haida archivist (email: jan@accessone.com). A detailed report on this article is available. Write to me at UAS, 11120 Glacier Highway, Juneau, Alaska 99801.

Among the workshop recommendations:

- ▶ Design and implement a survey tool to identify and describe Southeast Alaska Native curriculum materials and collections.
- ▶ Compile the information together with a bibliography of published resources.

Special attention should be taken to ensure accuracy of information, particularly regarding availability (access and use). I will be participating in a follow-up teleconference with Bill

Schneider and Jana on December 12 to further discuss the issue of access and use of materials on traditional Native knowledge. This will be a continuing major issue in each of our regions as we move through this project.

November 14–15, Alaska RSI Coalition, Juneau. This meeting was organized and hosted by Peggy Cowan, science specialist at the State Department of Education. Participants included a wide spectrum of representatives from organizations around the state who are working

with school districts to make their math or science education activities more appropriate for Native students. One workshop highlight was the presentation of the Alaska Math/Science Frameworks Indigenous section “Native Ways of Knowing and the Curriculum.” It provides a framework to help districts design compatible learning systems that allow for and support multiple worldviews. See volume 1, issue 5 of the *Sharing Our Pathways* newsletter for an article by Peggy Cowan on the frameworks. During the Alaska RSI Coalition meeting, I was able to meet with Sidney Stephens of the Alaska Science Consortium (ASC) to discuss completion of the Tlingit chapter of the ASC Native Uses of the Seas and Rivers handbook. This handbook will be published in the next few months, and will include contributions from teachers throughout Southeast Alaska. ♦

Angoon Elementary School

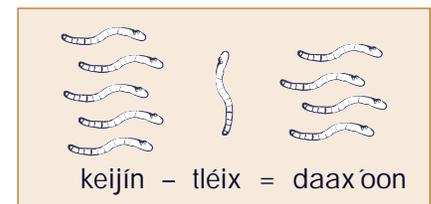
Mary J. Duncan

Hello Readers! I teach second grade at the Angoon Elementary School. We have eighty-eight students K–6. I have been working hard integrating Tlingit language and culture into our science and math curriculum. One activity I have taught is Tlingit numbers using addition and subtraction problems. The students learn how to say the Tlingit numbers one through ten, then we use the numbers to create number sentences. These are the Tlingit numbers:

- | | |
|-------------|-----------------|
| 1. tléix | 6. tleidooshu |
| 2. déix | 7. dax. adooshu |
| 3. násk | 8. nas'gadooshu |
| 4. daax'oon | 9. gooshuk |
| 5. keijín | 10. jinkaata |

The students write four addition and four subtraction problems. The number sentences will vary. Here are examples of the number sentences:

tléix + déix = násk
 keijín - daax'oon = tléix
 gooshuk + tléix = jinkaata
 nas'gadooshu - tleidooshu = déix



Once the students have their number sentences completed on paper then we will make a Tlingit Math Book. They write the number sentences and draw objects above each number, so that you can tell what the number is just by looking at the objects. This is one way to reinforce the language so that they hear it all the time. The finished product will be sent home so that the students can teach their relatives. ♦

Yup'ik/Cup'ik Region

by Barbara Liu

The Yup'ik/Cup'ik regional coordinator report will begin with an overview of our first year initiative, Yup'ik/Cup'ik Ways of Knowing. Then I will explain how our new regional initiative will be involved. Finally, I will be closing with a sample of culturally aligned curriculum being carried out in one of the Lower Kuskokwim School District (LKSD) sites.

We must remember since the inception of this project, the Yup'ik/Cup'ik elders and teachers are the key players in contributing to the development of curriculum content. It involves the Yup'ik/Cup'ik language expertise to adapt the math, science and other content areas within the State and district school standards.

The Bristol Bay Campus (BBC) and LKSD have had supplemental meetings according to its MOA with the elders and teachers in 1996. Most recently, four Native teacher delegates from LKSD and three Kuskokwim Campus instructors participated as observers at a subregional meeting sponsored by BBC, October 25–27 in Dillingham. Elders and teachers of Dillingham City and Southwest Region schools participated in the three-day weekend meeting with participants from New Stuyahok, Ekwok, Kolignak, Manoktak, Dillingham, Aleknagik and Togiak.

During the meeting in Dillingham, the Ciulistet Research Team provided techniques for teachers in developing thematic content with participating elders' knowledge. The theme for both regional meetings presented by the Ciulistet Research group focused on specific regional geography, i.e. traditional travel routes between the Kuskokwim and Bristol Bay and traditional place names situated around the above villages.

Our initiative for 1997 is Culturally Aligned Curriculum Adaptation.

This initiative asks educators to create a climate of exchange that can

Culturally Aligned Curriculum Adaptation in Kasigluk

Akula Elitnaurvik's "Yup'ik Studies Program" in Kasigluk has been seriously working on culturally aligned curriculum adaptation for the past six years. Kasigluk's local model is a product of district strategic planning. The school and community believe in carrying out their mission statement that, "Yup'ik identity is reinforced by fostering an appreciation, respect and understanding of the Yup'ik culture and values from the past to understanding changes during the present . . ." (quoted with permission from Akula Elitnaurvik). In order to provide quality education for Akula students, key players in developing local teaching knowledge are Akula's teachers and elders. Mr. Bill Ferguson, Principal at Akula, encouraged this work to build from within, adjusting weekly student contact time from five full days to four and a half days by adding slightly longer class schedules every day except Friday. This made it possible for staff and elders to meet Friday afternoons to begin developing local knowledge for their curriculum.

This past year I had an opportunity to observe a Friday afternoon at

happen between the school and community. This requires some planning time in school including community resources in order to develop locally culturally adapted lessons.

The Department of Education (DOE) and Alaska RSI will work with models underway in many classrooms within our region. Peggy Cowan with DOE will be planning regional meetings with educators from Lake & Peninsula, Dillingham City Schools, Southwest Region, Yupiit, Lower Yukon and St. Mary's School Districts as funds allow for covering travel and expenses.

Akula school. I saw approximately ten community elders sit in a circle with staff—non-speakers alike. They have displayed the desire to continue gathering and developing local knowledge, establishing an appropriate scope and sequence with thematic unit plans for Akula's K–12 content areas. This process of developing and implementing a local curriculum involves dedicated work and is continuing for Akula school. On behalf of Alaska RSI Yup'ik/Cup'ik region, *quyana* Akula staff for sharing your work. Akula School is in the village of Kasigluk which is located in western Alaska, about twenty miles west of Bethel. The new village of Kasigluk is predominantly Yup'ik with a population of approximately 500. ♦





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Welcome Dixie Dayo

Dixie Dayo was recently hired as a program assistant for the Alaska Native Knowledge Network. Dixie is originally from Manley Hot Springs and will be working in Fairbanks at the Harper Building. She can be contacted at 474-5086; her e-mail address is fnmd1@aurora.alaska.edu.

Dixie has worked a number of years for Bean Ridge Corporation (the Alaska Native Claims Settlement Act village corporation of Manley Hot Springs), the Manley Village Council and as an operating engineer dispatcher/equipment coordinator. Dixie Dayo has a B.A. in rural development from the University of Alaska Fairbanks but says that her most valuable education has been her Indian education

taught to her by Aunt Sally Hudson; two Mom's, Judy Woods and Elizabeth Fleagle; older brothers, Robert and Darryl Thompson and many others who have taken the time to explain the traditional Native way of thinking, working and seeing.

"It is exciting being employed with a project where I am able to fulfill my goal of learning about ALL the unique Native cultures in Alaska." ♦

Best wishes to Bill Pfisterer on his retirement after 31 years of dedicated service to the education of our youth and teachers. Congratulations Bill!

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