

**CULTURALLY RESPONSIVE TEACHING IN YUKON FIRST NATION SETTINGS:  
WHAT DOES IT LOOK LIKE AND WHAT IS ITS INFLUENCE?**

[Brian Lewthwaite](#), *James Cook University*, Thomas Owen, *Auckland University of Technology*,

Ashley Doiron, *Tr'onde`k Hwe`ch`in First Nation*, Robert Renaud, *University of Manitoba*,

and Barbara McMillan, *University of Manitoba*

This study presents a pedagogical framework to inform culturally responsive teaching in a Yukon First Nations community. The paper describes the community-based processes used to develop the framework, and presents accounts from teachers who have used the framework to inform their teaching. Preliminary indications of the adjusted teaching practices' influence on student learning are presented, using qualitative data describing the changed teaching practices, and quantitative data specific to the changed practices' impact on student learning. Finally, the paper outlines the ongoing community-based research work in the Yukon context, with reference to the work's potential significance to the wider education community.

**Introduction**

Recent developments in Canada's Yukon Territory draw attention to the potential of political changes for accelerating changes in educational practice that are more responsive to Indigenous people's cultural knowledge systems and practices. In contrast to other provincial jurisdictions across Canada, treaties were historically never negotiated in the Yukon. Over the past three decades, the governments of both Canada and the Yukon have moved towards actualizing policy developments with YFNs (Yukon First Nations), called Self-Government Agreements (SGAs). SGAs, which are unique to the Yukon, are complex and wide-ranging, and

include financial compensation, land, harvesting rights, heritage resources, and operative governance structures in areas like education and justice. The SGAs have come to finalization within the last decade and set out the powers of the First Nation government to govern itself, its citizens, and its land. Self-government agreements provide self-governing First Nations (SGFNs) with law-making authority in specific areas of First Nation jurisdiction, including education. With the establishment of SGFNs, each First Nation, with the required co-operation of Yukon Education (YE), faces the challenge of reversing assimilation and regaining a sense of identity, especially within the processes that influence the education of their children.

Typical of most Aboriginal peoples, YFNs presently participate in a school system that has been drawn from the dominant culture, in their case southern Canadian school system models. Because of this, school processes and practices such as decision-making in regards to the content of curricula, pedagogical practices, and language of instruction have both intentionally and unintentionally denied the inclusion of those aspects of YFN culture that have value and are important to YFN children (see Bishop & Glynn, 1999). Motivated by the tenor of SGAs to work towards education practice more responsive to the Yukon's 14 First Nations, "culture-based education" has been more recently endorsed by YE and its Education Act as one of the foundational principles for school development in the Yukon. YE policy requires the activities of organizations in YFN communities to create, preserve, promote, and enhance YFN culture, including arts, heritage, and language in classrooms (Yukon First Nation Education Advisory Committee, 2008). This policy is based upon the principle that culture in all its expression, provides a foundation for learning and growth, and that YE should support individuals, organizations, and communities to promote, preserve, and enhance Indigenous culture (Yukon First Nation Education Advisory Committee, 2008). The educational experiences should be

reflected not only in the management and operation processes of the school but also in the curricula and programs implemented and pedagogies used in classrooms (Yukon First Nation Education Advisory Committee, 2008).

In response to these current developments and an increasing call for schools to be responsive to YFN claims, this study attempts first to determine through conversations with a YFN community what teaching practices are of learning consequence for YFN students. Second, it seeks to develop a framework for fostering improved teaching. Finally, it provides preliminary findings that show the influence of changes to teaching practices in response to this framework on student learning. In all, the study moves towards addressing the long-standing concern repeated by Battiste (2002) of the limited scope and depth of research in appropriate place-based pedagogy undertaken with and for Aboriginal communities in Canada.

### **Theoretical Framework**

This area of research is informed by two major and interconnected categories of thought: culturally responsive teaching and critical pedagogy. Culturally responsive teaching is defined as using the cultural knowledge, prior experiences, frames of reference, and performance styles of students to make learning encounters more relevant to and effective for them (Gay, 2000; Stephens, 2003; Watt-Cloutier, 2000). As suggested by Gay (2000) culturally responsive teachers teach to and through the strength of their students. The underlying premise of culture-based education is that the educational experiences provided for children should reflect, validate, and promote their culture and language. These experiences should be reflected not only in the management and operation of schools but also in the curricula and programs implemented and pedagogies used. Practitioners of culturally responsive teaching assume that students come to

school with a whole set of beliefs, skills, and understandings formed from their experience in their world, and that the role of the school is not to ignore or replace these understandings and skills, but to recognize the teaching practices and understandings within the cultural context and affirm these in formal classroom settings (Stephens, 2003; Wyatt, 1978–1979). Culturally responsive teachers and theorists do not endorse a reductionist view that there is a uniform culturally specific pedagogy that creates a “two race” binary framework (Donald & Rattansi, 1992; McConaghy, 2000). Instead theorists and practitioners suggest that culturally responsive teachers are most importantly responsive to developing the full educational potential of each student through the heightened awareness of how they can work congruently with each student and the knowledge, skills, values, norms, resources, epistemologies each represents (Costagno & Brayboy, 2010).

Culturally responsive teaching is commonly referred to as being informed by critical pedagogy. Critical pedagogy is defined as “an educational movement, guided by passion and principle, to help develop consciousness of freedom, recognize authoritarian tendencies, and connect this knowledge as a foundation for taking constructive action” (Giroux, 2010, p. 21). Critical pedagogy acknowledges the importance of being aware of the socio-political context in which schools and, ultimately, classrooms are located. The primary intent of the YFN SGAs is a response to a critical awareness of the injustice of existing social orders, including education, that have historically disenfranchised and, arguably, continue to disenfranchise YFNs and this study’s case, the classroom pedagogies perceived to influence students’ learning. In response, critical pedagogy, similar to the underlying premise of the SGAs, re-examines and, ultimately, assists in the re-construction of teacher practices in order to work towards a social order that is based upon a reconceptualization of what can and should be for students and the community they

represent. As Barnhart and Costagno (2010) assert, what is required for the Yukon is more than simply substituting one body of knowledge for another in conventional subject based curricula, it requires substantial rethinking of not only what is taught, but how it is taught, when it is taught, and who does the teaching.

### **Methodology**

The overall aim of this research was motivated by our desire to assist both Yukon First Nations and YE to better inform and benefit YFN students and their teachers through the realization of YFN aspirations for education, especially in classroom practices. With the aforementioned aim in mind, our central research questions are: What teacher-specific and learning-environment characteristics and teacher-student interaction behaviors do members of a YFN community perceive contribute to learning success in both informal and formal contexts? And, what influence does a change in teacher practices have on student learning? The research itself was motivated and invited by a YFN education director familiar with the authors' similar work in Nunavut (Lewthwaite, 2005, 2007; Lewthwaite & McMillan, 2007, 2010; Lewthwaite, McMillan, Renaud, Hainnu, & McDonald, 2010; Lewthwaite & Renaud, 2009). Her request was for us to "find out what teaching in classrooms is like that gives us the best opportunity to learn. Not just the cultural inclusion, but the way teachers interact with students and teach." The methodology for the overall research project is informed by participatory action research (PAR), especially that conducted by the authors in Inuit communities of Nunavut. In this previous and ongoing research, the collective aspirations of each Aboriginal school community (i.e., its teachers, students, parents, administrators, and supporting elders) worked as researchers in collaboration with the authors to (a) identify common goals, (b) implement strategies for

achieving these goals, (c) evaluate the effectiveness of efforts to achieve set goals, especially in regards to its influence on student learning, and, finally, (d) respond to the evaluations with further courses of action (Lewthwaite, 2005, 2007; Lewthwaite & McMillan, 2007, 2010; Lewthwaite et al., 2010; Lewthwaite & Renaud, 2009). Because this Yukon project, overall, endeavors to critically identify, challenge, and, ultimately, provide direction for the patterns of action local institutions might use in being responsive to locally identified goals, including the pedagogy in classrooms, it is believed by the First Nation to be emancipatory as well (Education Director, personal communication, August, 2008).

### **Participants and Data Collection**

#### *Phase One: Our Stories About Teaching and Learning*

The research involves two phases. The first qualitative phase (which we describe briefly to provide context to the study) focused on developing an understanding of the pedagogical practices the Yukon First Nation community perceived influenced learning. In this qualitative phase, which is detailed elsewhere (Lewthwaite, Owen, Doiron, McMillan, & Renaud, 2014), 52 interviews involving 54 community members, (43 First Nation citizens between the ages of 18 and 82 and nine past and current teachers at the local school) lasting between 20 minutes and two hours, focused on identifying teaching and learning practices characteristic of effective teaching practices. Within the experiences of the participants, we, collectively, identified common themes associated with characteristics of teaching of consequence, both in formal and informal settings (Bogdan & Biklen, 1992). In identifying these themes, we isolated those elements of the conversation that spoke directly to what we interpreted as “low-inference” as opposed to “high-inference” behaviors (Murray, 1999): that is, specific and

observable teacher behaviors that indirectly or directly help learners to learn. In all, 52 teacher practices were identified from the 54 conversations as influences on learning. These influences were communicated back to the community members individually and collectively seeking their corroboration of the findings.

*Figure 1. Pedagogical Framework for Informing Culturally Responsive Teaching*



Because the purpose of this research was to identify what participants identified as influences upon their learning, and characteristics of effective teachers, both informal and formal, we organized the themes from our data around independently identified and then negotiated and agreed upon headings. In all, we identified eight categories of thought and practice that were indicators of effective practice, all of which were influenced by teacher's beliefs about students and the community students represented. These are illustrated in Figure 1 and 33 of these practices are organized in Appendix A in what we refer to as a Classroom Teaching Inventory. What provides significant credibility to these behaviors identified by

northern students and community members is that many of these attributes are identified as highly effective teaching practices in a meta-analysis of over 800 international studies focusing on identifying what influences and causes learning (Hattie, 2009). In Hattie's (2009) identification of the most significant influences for advancing student learning, he lists teacher practices such as the provision of feedback, clear direct instruction, and high instructional quality as some of the most significant influences on learning. Although we saw correspondence between what the community was saying and the literature on attributes influencing learning, we could see many influences were specific to "place" emphasizing the context-specific nature of effective teaching practice in northern settings. As suggested by Luke (2010), enacted curriculum, including teaching practices must demonstrate links between school and the everyday realities of Indigenous peoples' life and cultures. For example, the frequent mention of the need for prolonged wait time necessary for learners to process ideas and respond, and the common reference to teachers over-talking rather than under-talking, we saw as normalized learning practices within the community and not mentioned in Hattie's meta-analysis. In brief, there was an "orthodoxy of practice" for learning in the community, and this orthodoxy was, we believed, not representative of the common practice of schooling within the dominant culture's perception of what good "teaching" entailed (Mason & McFeetors, 2007).

To foster the use of the community's narratives as a means to inform teachers of these practices, we abbreviated the accounts provided by community members into narrative "vignettes," commonly about 300–400 words long. Community members who consented authenticated the accuracy of these accounts. We organized the vignettes under the eight categories illustrated and described above into a thirty-two page booklet entitled *Our Stories About Teaching and Learning*.



*Phase Two: Teachers Adjusting Their Teaching*

The second phase of the research (which this paper focuses on) involved the first author and three non-native teachers and the students of grades 4 and 5 in the community's school. It is important to emphasize that the school, typical of all Yukon schools, is administered by Yukon Education and has, until the recent developments of the SGAs, had minimal First Nation decision-making involvement. The reported study includes only these grades and their teachers because the research focus is on gauging the influence of culturally responsive teaching on students in the intermediate years (Grades 4 through 8): years identified by the researchers as the most consequential in formulating their views as learners (Lewthwaite et al., 2010). In subsequent years, the longitudinal study extends and follows the students through Grades 6, 7, and 8, allowing us to determine the ongoing influence of culturally responsive teaching on students' learning. Two of the teachers (Anita and Caitlin) were in their first year of teaching at the school and the other (Arthur) had been a teacher in the community for 14 years. The classrooms consisted of, on average, 16 students, with approximately 32% self-identifying as First Nations. It is noteworthy teachers did not "single-out" First Nations students in this study. That is, teachers would adjust their practices for their class, not just First Nations students. As mentioned earlier we as researchers and teachers involved opposed a reductionist view that there is a uniform culturally specific pedagogy that creates a "two-race" binary framework (Donald & Rattansi, 1992; McConaghy, 2000). We hypothesized that the influence of changed practices would be of benefit to all students and that teacher observations of influences on learning attributes would be evident in the teaching intervention phase. In ongoing phases of this research, we are investigating the influence of these adjusted practices on YFN students in comparison to non-YFN students.

In this phase, the teachers enacted changes that they individually identified as needing adjustment based upon the qualities of effective practice illustrated in the community's narratives. Prior to any discussion with the teachers about culturally responsive pedagogical practices, the first author observed multiple one-hour teaching sessions for each of these three teachers. In Arthur's case, eight one hour observations of the teacher's teaching practices were observed in a variety of curriculum settings. The first author used the Classroom Teaching Inventory (CTI) (Appendix A) to document the frequency of manifestation of these practices. One week after these observations, the first author asked the teachers to independently read the collated community narratives and consider how their teaching could be more responsive to not only what was taught (that is, the content) but also, and more importantly, how the teaching unfolds (that is, the processes) and the priorities in their learning. The first author then met with the teachers for two hours to discuss their responses to the vignettes. Using the Classroom Teaching Inventory (Appendix A), these teachers identified what they perceived to be the frequency of use (on a 1–5 scale) of these behaviors prior to any adjusted teaching: that is, did they perceive these practices were “never being used” (1) through to “always being used” (5). At the heart of these discussions with teachers was assisting teachers in recognizing that they were the central players in fostering change, first in themselves by altering their beliefs about students and the cultures they represent and, then, working collaboratively towards an environment where classroom practices reflected the culture in which students and their teaching practices assisted students in their learning. In line with the literature on culturally responsive pedagogy, the authors anticipated that the community's voice would draw into question the protocols of classrooms and, in response, promote a dynamic and synergistic relationship between home and community culture and school culture (Ladson-Billings, 1995). This questioning would

ultimately and purposely “problematize” teaching by upsetting the orthodoxy of classrooms, and, by so doing, encourage teachers to ask about the nature of student and teacher relationship, their teaching, and the curriculum (Ladson-Billings, 1995). By creating this disequilibrium, we believed educators would be pushed to seek resolution of these issues to move their classrooms to become more culturally responsive in their pedagogy.

Over the course of the second semester of the school year (January to May), teachers adjusted their teaching in response to the identified areas of selected change. In most cases, the changes involved adjustments to all categories of practice. In advance of and during the teaching adjustment, the first author worked with teachers in supporting their adjusted practices, including the development of resource material that responded to students’ cultural background and complied with Yukon curricular outcomes. In the discussion associated with the adaptation of the curriculum materials, the researchers and teachers focused not only an adjustment in content inclusion but also identified what practices and learning emphases would accompany this adjusted content. During the implementation, the first author observed teacher’s practices and documented changes in their practice using the CTI. On average, this involved a total of 12 hours of classroom observation over a total of 16 classroom visits. The teachers were encouraged to consider the influence of their adjusted practices on student learning. Post-teaching discussions were seen as opportunities to engage in reflection-on-action assisting teachers in making the professional knowledge gained from their experience in the classroom an explicit part of their decision-making. To corroborate the first author’s observations, teachers independently documented their perceived changes using the CTI.

From the community conversations, we identified as researchers from the narratives and negotiated in discussion with the three teachers and the YFN chief and council, student

learning attributes of importance to gauge change in the adjustment phase. As an example, many of the interviews identified “self-belief as a learner” as a major influence on their long-term engagement and, too frequently, disengagement with school. Thus, we selected this as a learning attribute to monitor. We developed a rubric as a means to gauge students’ progress according to these various attributes. This rubric is presented in Table 2. Prior to the intervention teachers gauged student development against these criteria. Since the first author was quite familiar with each student’s learning attributes through multiple classroom observations, he independently gauged students according to this attribute rubric. As well, the teachers dialogued individually with their students at the end of the research phase using the rubrics as a means to gauge student’s perceptions of their development. Adjustments were made to the student’s rubrics based on the negotiation among the three sources of data from teacher, first author, and student input.

Table 2

*Personal Learning Attribute Rubric*

Criteria	Beginning 1	Approaching 2	Meeting 3	Consistently 4
<b>Effort</b>	Very little effort Poor & unfinished products	Inconsistent effort Partially or barely adequate completion of products	Good effort Generally completes products with care	Makes a very good, consistent effort Completes products with thoroughness
<b>Contribution</b>	Impedes the learning of others Questions/comments/ efforts often distract from learning Group work often disrupted	Rarely asks questions or offers ideas or help in class Seldom contributes to group work	Offers support, ideas and asks questions on occasion which help to clarify or solve problems Good group work skills	Offers support, ideas and asks questions in class which help to clarify and extend discussion or solve problems Very good group work skills
<b>Attentiveness</b>	Almost never on task Very little focus Does not listen when others talk and interrupts when others speak	Often not on task Inconsistent focus Listens inconsistently when others talk	Regularly on task Generally focused Listens when others talk and will on occasion have something to add Listens to remember	Consistently on task Very focused Listens when others talk and will offer additional input Listens for understanding and relevance
<b>Attitude</b>	Often disrespectful to peers and teacher Often makes inappropriate comments or questions only to challenge	Shows inconsistent respect for peers and teacher Occasionally makes inappropriate comments	Generally shows respect for peers and teacher Questions sometimes don't demonstrate respect intended	Consistently shows respect for peers and teacher On all occasions questions ideas in respectful way
<b>Self Image as a Learner</b>	Student does not demonstrate that effort, competence, and perseverance will lead to success.	Student demonstrates minimally, that effort, competence, and perseverance will lead to success.	Student frequently demonstrates that effort, competence, and perseverance will lead to success.	Student consistently demonstrates that effort, competence, and perseverance will lead to success.
<b>Problem Solving Skills</b>	Student lacks problem-solving strategies and relies totally on teacher or peer intervention.	Student relies heavily on teacher or peer intervention for problem solving strategies.	Student, peers and teacher discuss and choose appropriate problem solving strategies together.	Student independently chooses appropriate problem solving strategies.

At the end of the intervention phase, four months later, the teachers met with the first author to collaborate on identifying the adjusted practices and the influence of these adjusted practices on student learning attributes. In all cases, the interviews between and among the first author, teachers, and students were a chat (Bishop & Glynn, 1999) as they were not directed by any pre-determined interview protocol but, instead, were informal yet directed by the need for collaboration among teachers, students, and first author to construct the final story as to the influence of teaching practices on student learning. Although the conversations among teachers and the first authors were audio-recorded, the conversations with students were not. All conversations audio-recorded were transcribed. The transcripts were verified as accurate by those interviewed.

In the section that follows, we illustrate the journey of the three teachers. We focus on documenting this journey in accordance with the intent of the paper. That is, what teaching practices are indicative of good practice and of learning consequence for YFN students? Using a framework for fostering improved teaching based upon a community's identification of effective teaching practices, what is the influence of modified teaching practices in response to this framework on student learning?

## **Results**

### *Initial Conversations Around Our Stories About Teaching and Learning*

The initial conversations with teachers required them to consider their current teaching practices in response to the stories shared by community members in the document *Our*

*Stories About Teaching and Learning.* Important to the research process was the immediate positive teacher response to the community's stories about teaching and learning. As Anita mentioned:

You think sometimes that teachers are the ones that are the experts on teaching. That is what they are trained to do. You don't think about students and parents having views of teaching. You are just not brought to think anything different. These are very informed. They are well thought about.

Teachers identified that the community's commentaries provided a very thoughtful critique and a "consciousness" of the education being provided in their community. They recognized that community members' considerations about education focused strongly on the priorities and processes of schools, much more than the content. As Caitlin suggested:

I hear what they [the community] are saying. I think most think that incorporating Aboriginal perspectives is about increasing the content material to ensure more cultural inclusion. It goes much beyond that. It is about our beliefs in students and their capabilities. Not leaving them behind and isolating them from other learners. It's about how we work with students. How we teach and support them in their learning. Every student has something to offer.

Embedded within the initial conversations with these teachers were responses to the many stories from community members' perceptions that often teachers held deficit views of First Nations students. As Caitlin asserted:

I get so mad at the views people still have of First Nations people. [You hear people say] they aren't interested in school. They are unlikely to be successful in school. They aren't as intelligent. It's like if a First Nations student is successful, there's something different about that student.

It is noteworthy that these teachers' responses were indication of their propensity for adjustment and this openness to adjustment was fundamentally influenced by their beliefs about students and the community that they represented. They, in themselves, showed evidence of a

critical awareness of existing pedagogical practice (Giroux, 2010). As Bishop and Glynn (2003) assert, at the heart of many school systems' thinking is a belief or, at least, an assumption that Western ways are superior and that Aboriginal culture and specifically students may bring deficits to classrooms—not assets. Such thinking suggests that not only are students' background experience and knowledge of limited importance to promote learning, but so are their cultural foundations (Shields, Bishop, & Mazawi, 2005). Deficit thinking or theorizing, as it is called, is the notion that students, particularly low-income, minority students, fail in school because they and their families experience deficiencies such as limited intelligence or behaviours that obstruct learning (Bishop, 2003; Castagno & Brayboy, 2008; Valencia, 1997). In contrast to this, these teachers reacted strongly to the assertions made by some community members, accepting that these were, indeed, “cultural myths” sometimes voiced in the community, but not beliefs that they themselves held.

Anita's comments gave evidence of her awareness of the political and socio-cultural contexts and their importance in creating a climate of readiness for teacher change. As suggested by Villegas and Lucas (2003), her sociocultural consciousness was a pivotal disposition in fostering her responsiveness. Her awareness allowed her to see that the First Nation sought an adjustment to the practices of schools, especially in her teaching and that she sought to respond to this intention. Anita suggested:

In my first day in this community I was taken back about how clear the First Nation was about its future. It has a vision of what it wants to see happen in education and I am here to be a part of that solution. I see that as why I am here. I may be seeking some of my own personal and professional goals, but it was clear I am working with this First Nation.

Teachers responded strongly to the learning priorities that needed to inform their teaching. As Arthur suggested:

At the Grade 4 level, you are working on developing foundational skills that are necessary for students' success throughout their life, not just school. That is what the message is [in the community interviews]. We focus on development of values important to lifelong learning and being a community member. It starts here in the classroom. I really focus on developing responsible and accountable young community members. We focus on developing these qualities as well as the academics but there has to be a balance. I can see as students get older and are in the higher grades it focuses on the academics and maybe that's why students disengage.

All three teachers were challenged in their thinking about learning priorities. Kemmis (2012), education is, ultimately, about the formation of persons who in turn become a part of the collectives of communities, societies, and our shared world. Unfortunately, as Kemmis suggests, schooling can often interfere with education because schools and schooling can be suffocated by a dominating focus on curricula and assessments and students' achievement. The teachers' responses to the commentaries suggested that teachers needed to be reminded that, too commonly, education focuses on an academic rationalist orientation (Eisner, 1979) that focuses on curriculum mastery, subscribing to a need for a critique of the learning and teaching priorities of school. As Anita stated:

I think it is a tragedy that we fall into a trap of thinking that the focus of education must be on moving students through the system to get a good education. Although the focus of some of our parents is on their kids being university material that is not the priority for most parents here. We can't just measure success in terms of academic performance. I think that once we start thinking that way, that's what we begin to communicate in our teaching and that's why many students will disengage. We have to be reminded not to buy into that kind of thinking.

In response to the commentaries, in the completion of the Classroom Teaching Inventory, all teachers were able to identify behaviors that they could modify. As suggested earlier, in all cases these were primarily in the area of patterns of communication, content, and teaching practices. In Appendix A, we share as an example Arthur's self-completed CTI. In it he



identifies areas where he intended to focus on developing either in reducing the frequency of this behaviors use (-) or increasing its use (+). As corroborated by the first author's observations, Arthur had intuitively adjusted his teaching practices over several years of considered teaching in response to the learning orientations of his students and saw only a few areas where adjustment was necessary. A selected example for adjustment for Arthur was to develop content material that was more closely connected to students' lives. He wanted to adjust his teaching so it was located in local context. He wanted to improve on teaching academic ideas from resource material largely irrelevant to students' lives and to enrich learning through first-hand experience activities that had "working to end" type projects involving tangible end products.

An example of a culturally responsive "lesson" is provided in Appendix B. The curriculum focus is on understanding characteristics of sound and pitch with focus on what contributes to changes in volume and pitch. In this lesson students are first introduced to the topic through a narrative presented by a community elder. The account is adjusted, with approval by the story-teller, by the first author to make explicit the link to the attributes of sound and pitch. The narrative leads into an investigation making "moose" callers. Finally, a community elder demonstrates to students how authentic moose callers are made. As well (but not described here), the teacher duplicated the elder's practice by making "callers" out of construction paper. What we draw attention to is how many of the attributes the community identifies as characteristics of effective teaching, as illustrated in Figure 1 and Appendix B, are captured in this lesson. We focus on only some attributes here: (1) the narrative is presented as an "interrupted" story line (short paragraphs) allowing time and space for students at the end of each paragraph to consider and comment on the information in the paragraph; (2) the narrative is applicable to local context including the terminology used; (3) the narrative is supported by

visual imagery; (4) working to end type products (making callers) are the focus of the learning and assessment; (5) modeling and clear directions are an essential component of the teaching sequence; (6) students express their learning in multiple forms; and (7) community members are confirmed as contributors to the learning process.

### *Adjusting and Monitoring Practices*

As indicated previously, teachers worked with the author to adjust their practices in accordance with where they saw the need for adjustment. In the post-teaching reflective discussions, of importance to the author and teachers was noticing the influence of these adjustments on student learning attributes (Mason, 2002). Of particular importance to the teachers was developing “sensitivitiy and awareness” to the responses of students to adjustment in actions. As Anita suggested:

I can see that I probably did too much for students in the past. I like construction-type activities where students have to work to an end, but I think I haven't left enough room for them to try different things and be creative and consult with each other. I can see by leaving things a little more open-ended this requires perseverance on their part and they seem to engage and collaborate more.

As Caitlin suggested:

I know I was too casual with the explanations. It didn't take a lot of effort to model how to do something or break a procedure into steps and teach these explicitly. I wouldn't write the instructional sequence on the board. I can see I did not model as well as I should have. [By making these changes] it has had an effect. I can see now that if they were off task it was because they were frustrated or because they didn't know what was expected. By providing that extra support, that off-task behavior is minimized. I congratulate them on being more on-task and committed to their learning as well, whereas before I would have kept those words to myself.

As Arthur suggested:

I am just more aware that a student being quiet does not mean they aren't engaged. My First Nations students are, overall, the quieter ones and I just give them more space and extra time and opportunity to respond to questions or ideas. I'm more aware that even a glance at a quiet student can be enough to encourage them to offer an idea to the class. I haven't encouraged much reciprocal working together on areas like mathematics, but I can see students respond well to assisting someone if they need help. It boosts their confidence in themselves when they can assist someone in their learning.

Overall, the targets for adjustment set by the teachers were achieved. Teachers by the end of the research period were showing a more complex range of low-inference behaviors that corresponded more closely to the culturally responsive teaching preferences identified by the community. That is, they were responding to the learning styles, pattern performances, and interests (Gay, 2000) of their students and deepening and broadening their practice. In Appendix A, Arthur's self-identification of his changed teaching practice is represented. This self-identification was corroborated by the first author based upon his observations of Arthur's teaching over the adjustment sequence. The degree of adjustments that Arthur made are similar to those made by Caitlin and Anita in that the practices, overall, have moved from the rarely (R) and sometimes (S) to the often (O) and always (A) category.

### *Student Learning Attribute Changes*

Using the rubric developed to gauge student learning attributes, teachers and the first author completed the rubrics at the end of the formal research period. As mentioned previously, teachers dialogued individually with their students at the end of the research phase using the rubrics as a means to gauge students' perceptions of their personal development. Adjustments were made to the students' rubrics based upon the negotiation among the three sources—teacher,

first author, and student input. At this stage of the research process, we, as researchers, have not formally collected conversational data from students that might provide further insights into students' response to adjustments in their teacher's teaching. We have, however, encouraged teachers to be more dialogic with students about their changed practices. Hattie suggests (2009) that encouraging reciprocal student-teacher feedback is necessary to assist in identifying teaching practices to alter or maintain and make learning visible.

In Table 3 below, we collectively list the changes in the mean scores of student learning attributes across the three classes. We emphasize the limitations of these data, especially in that this intervention is not matched against a control school. As well, at this stage we do not seek to distinguish between First Nation and non-First Nation students in terms of their learning attribute gains. Most noteworthy in these data is that students showed a significant improvement in each of the six learning attributes. The attributes that students were found to show the greatest gains were in the areas of effort, self-image, and contribution. These differences were consistent throughout the sample. First, there was no difference between the three classes in terms of the gain for each attribute. Second, the gain of each attribute did not differ between FN students and non-FN (i.e., both groups gained similar amounts).

*Table 3: Mean Student Learning Attribute Scores Before and After Research Phase (N=52)*

Learning Attribute	Pre	Post
Effort	2.47 (.85)	3.48 (.69)
Contribution	2.42 (.72)	3.11 (.73)
Attentiveness	2.40 (.88)	2.91 (.60)
Attitude	2.89 (.82)	3.49 (.58)
Self-Image	2.36 (1.00)	3.17 (.70)
Problem-Solving Skills	2.32 (.87)	2.75 (.83)

*Note:* All paired differences are significant at  $p < .001$ . Standard deviations in parentheses.

Teachers were asked to comment on the data collected and the results evident. All commented on increased effort and attitude noting that students were willing to cognitively invest more in their learning. This expressed itself in student effort and attentiveness. This increase in engagement was attributable to a variety of factors. Anita attributed much of its success to the resource materials used:

I know the materials were used were more relevant to them. They could relate to the stories and wanted to add to the stories based upon their own experiences. They were more willing to present a point of view both orally and writing. It showed itself in their effort and commitment to learning. I think these qualities have always been there for my students, but they were just more noticeable through the nature of the activities. My changed practice gave room to their expression.

Caitlin attributed it to the opportunity to work reciprocally:

When they can draw upon each other's strengths it lengthens the time they will stay committed to a task. If they are required to always work independently and can't work collaboratively, they will disengage. Providing the opportunity for them to seek out help, rather than just wait for my assistance makes a big difference in keeping them engaged.

Arthur referred to the importance of communication skills and teaching practices:

I have always been quite focused on my communication skills. I try to keep instructions and explanations audible, simple, and sequential. Things [instructions for example] are written on the board. I pride myself on having a well-structured classroom. I have focused more on making learning sequences clear and uncomplicated. I try not to waste words [undertalk rather than overtalk]. I try to ensure my explanations are supported by my actions [by modeling]. I try to ensure there is enough waiting time to ensure everyone catches the idea and knows what to do. I think the on-task behavior and time spent on learning is improved because of this.

Of importance to the teachers was identifying how they noticed changes in their class as they made adjustments to their teaching. As Caitlin suggested:

An alteration of a practice such as clearly described procedures and modeling what is required instead of just giving lots of words to describe what is required, just makes more sense to students and to me. I am aware of the need

for clear and direct instruction and that clear and direct instruction is not simply about words. Taking the time to work through a procedure and allow students time to organize their thoughts around what is required makes such a difference in the learning sequence. I find students much more deliberate in their work and that comes from me being more deliberate in my teaching. It just has to be much more purposeful.

As Anita suggested:

Making clear the learning goals is so supportive for students. Rather than them working blindly, it draws attention to what is important. I make the learning intentions clearer. I identify the barriers or the obstacles that make learning difficult. If I come alongside them we can talk about specific areas that we have identified in advance. It just becomes more intentional.

In all, teachers affirmed that through the semester they had sharpened their awareness of influences on student learning attributes. All commented that the systematic manner in which they had reflected on their teaching in accordance with the community's comments about effective teaching practices had encouraged their ongoing critique of their teaching. As well, the teachers asserted that this research effort was "confirmatory" in that the teachers identified a sense of satisfaction in responding to the expressed concerns and requests of the community in the *Our Stories About Teaching and Learning* document. As asserted by Noddings, these teachers were confirming the community in their adjusted practice:

When we confirm someone, we identify a better self and encourage its development. To do this we must know the other reasonably well. Otherwise we cannot see what the other is really striving for, what ideal he or she may long to make real. Formulas and slogans have no place in confirmation. We do not posit a single ideal for everyone and then announce "high expectations for all." Rather we recognize something admirable, or at least acceptable, struggling to emerge in each person we encounter. The goal or attribute must be seen as worthy both by the person trying to achieve it and by us. We do not confirm people in ways we judge to be wrong (Noddings, 1998, p. 192).

In all, teachers were able to identify through the process taken a very clear picture of what practices the community was identifying as contributors to students' success as learners.

What is noteworthy in this study is that the teachers involved held positive views of their students and the community and were open to adjusting their practices as teachers. In the introduction of this paper we emphasized that this research project is underpinned theoretically by the constructs of culturally responsive teaching which has as its foundation critical pedagogy. These teachers were open to using the cultural knowledge, prior experiences, frames of reference, and performance styles of students to make learning encounters more relevant to and effective for them (Gay, 2000; Stephens, 2003). These teachers wanted to teach to and through the strength of their students. As well, through their experiences we believe they have become critically aware of the classroom pedagogies perceived to influence students' learning. They have been open to re-examining and re-constructing their practices in order to work towards a social order based upon a reconceptualization of what can and should be. As Arthur said:

Although I can see that these behaviours (from Figure 1 and Appendix 1) are indicative of my practice, it is really about my mindset. I wasn't like this always, but I have adjusted my teaching over time to better help students here learn. I believe that my mindset needs to be very open. I need to understand my students, each one individually and to do this, takes time. I need to understand my students—not just their interests. I am constantly trying to adapt my practice to integrate to assist them in their learning. I feel as though you need to be adapting to the needs both socially and intellectually of *each* student. I believe that the mindset of a responsive teacher needs to be exactly that—responsive. If it isn't working, I am doing it wrong. One student not learning or being disengaged is the barometer of how I am doing. You need to be in control of your teaching and to make learning happen for your students. You can teach but can your students learn? I need my students to learn that learning is my bottom-line and I believe I need to respond to their needs to do that. I believe responsive teachers are motivated because they like to learn, and in turn they want to see their students learning. They are not afraid to question their teaching. Responsive teaching allows students to feel like they are being cared for but also being challenged to learn and take ownership of their learning.

Arthur makes clear that although we might be able to see in his practice those behaviors that are characteristic of responsive teachers, responsive teaching is foremost an

attitude of mind. When students are regarded as culturally located individuals having the capacity to learn and are, individually and collectively, worthy of respect, adjusting practices to foster their learning is not something demanded by external authority; instead, it becomes an action of willingness.

### **Summary**

The purpose of this study has been to report on the first phase and the preliminary outcomes of the second phase of a research and development project focusing on culturally responsive teaching in YFN settings. We started this paper by emphasizing the significance of the political events that have occurred more recently in Canada's Yukon Territory. With the establishment of SGFNs, each YFN with the required co-operation of YE, faces the challenge of reversing assimilation and regaining a sense of identity especially through the education provided for children. Noddings (2004) asserts that the obligation of schools is to be responsive: to listen attentively and respond as positively as possible to the legitimate expressed concerns of students and the communities they represent. The information in this study suggests evidence of responsiveness of three teachers to the voiced concerns of a YFN community, concerns that reflect a critical awareness of the education and schooling process of their community. Responding to these voiced concerns is the imperative for the school involved, and these teachers provided some preliminary indication of the influence of this response on student learning attributes.

The narrative accounts of the community began as starting points for engaging teachers in reconsideration of their teaching practices. We believe that these oral accounts challenge many of the fundamental structures, practices, and content of Yukon education. For the three teachers



involved in this study, we believe that because of the recent political changes associated with the SGAs, they possessed a socio-cultural awareness and commitment to acting as agents of change in teaching responsively. They were open to re-examining and re-constructing their practices to work towards a social order consistent with the community's aspiration. They were committed to working for the benefit for their students and were open to adjusting to the teaching practices exposed by the community's stories about teaching and learning. They were open to a substantial rethinking of not only what is taught, but how it is taught (Barnhardt & Kawagley, 2010).

Based on our long-standing and ongoing work in Canada's northern schools, we do not believe that these three teachers are typical of all northern teachers. Many are not open to such re-conceptualization. As we have stated previously, teachers are commonly characterized by conflicting understandings in the significant linguistic, cultural, and world-view differences between the dominant national society and the minority Indigenous community. We anticipate that the community's voice as documented through the narratives and the primacy of the SGAs are essential in drawing into question the protocols of mainstream classrooms and, in response, promotion of a dynamic and synergistic relationship between home and community culture and school culture (Ladson-Billings, 1995). This questioning will ultimately and purposely "problematize" teaching, upset the orthodoxy of classrooms, and encourage teachers to ask about the nature of student and teacher relationships, their teaching, the curriculum, and schooling (Ladson-Billings, 1995). By creating this disequilibrium, educators will be pushed to seek resolution of these issues to move their classrooms to become more culturally responsive as they employ a culturally preferred pedagogy prompted primarily by an awareness of the socio-political changes required at the community and classroom level.

In our ongoing research, we are monitoring students' learning attributes as they progress through the intermediate years. We parallel this research with similar activity in other northern Indigenous communities seeking to determine if there is a significant difference in the influence of responsive teaching on Indigenous and non-Indigenous students. In line with what Castagno and Brayboy (2008) assert, we seek to provide some conclusive evidence to ascertain the influence of culturally responsive teaching on students' academic performance. As well, we seek to determine which practices have the most significance on student learning attributes. Based on the outcomes of this study, early indicators suggest that adjusted beliefs and practices have consequence for student learning and, potentially, more significantly, a community because of the confirmatory nature of listening and responding in action to the voiced concerns of the community involved.

## References

- Battiste, M. (2002). *Indigenous knowledge and pedagogy in First Nations education: A literature review with recommendations*. Ottawa: National Working Group on Education. Retrieved from [https://www.truworld.ca/\\_\\_shared/assets/Battiste\\_2002\\_Indigenous\\_Knowledge\\_and\\_Pedagogy23663.pdf](https://www.truworld.ca/__shared/assets/Battiste_2002_Indigenous_Knowledge_and_Pedagogy23663.pdf)
- Barnhardt, R., & Kawagley, A. (2010). *Alaska Native education; Views from within*. Fairbanks: Alaska Native Knowledge Network.
- Bishop, R. (1996). *Collaborative research stories: Whakawhanaungatanga*. Palmerston North, NZ: Dunmore.
- Bishop, R. (2003). Changing power relations in education: *Kaupapa Maori* messages for “mainstream” education in Aotearoa/New Zealand. *Comparative Education*, 39, 221–238.
- Bishop, R., & Glynn, T. (1999). *Culture counts: Changing power relations in education*. Palmerston North, NZ: Dunmore.
- Bishop, R., Berryman, M., Tiakiwai, S., & Richardson, C. (2003). *Te Kōtahitanga: The experiences of year 9 and 10 Māori students in mainstream classrooms* (Report to the Ministry of Education). Hamilton, NZ: Ministry of Education. Retrieved from [http://www.educationcounts.govt.nz/\\_\\_data/assets/pdf\\_file/0017/7532/tekotahitanga](http://www.educationcounts.govt.nz/__data/assets/pdf_file/0017/7532/tekotahitanga)
- Bogdan, R. C., & Biklen, S. K. (1992). *Qualitative research for education: An introduction to theory and methods* (2<sup>nd</sup> ed.). Boston: Allyn and Bacon.
- Castagno, A., & Brayboy, B. M. (2008). Culturally responsive schooling for Indigenous youth: A review of the literature. *Review of Educational Research*, 78, 941–993.
- Chisholm, S. (1994). Assimilation and oppression: The northern experience. Education and the Aboriginal adolescent. *Education Canada*, 34(4), 28–34.
- Clifton, R. A., & Roberts, L. W. (1988). Social psychological dispositions and academic achievement of Inuit and non-Inuit students. *The Alberta Journal of Educational Research*, 34, 332–343.
- Donald, J., & Rattansi, A. (1992). Introduction. In J. Donald & Rattansi (Eds.), *“Race,” culture and difference* (pp. 1–10). London: Sage.
- Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

- Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains, NY: Longman.
- Giroux, H. (2010, October 27) Lessons from Paulo Freire. *Chronicle of Higher Education*.
- Goulet, L. (2001). Two teachers of Aboriginal students: Effective practice in sociohistorical realities. *Canadian Journal of Native Education*, 25, 68–82.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.
- Kemmis, S. (2012, April 24). *Contemporary schooling and the struggle for education*. Bob Meyenn Lecture, Charles Sturt University, Albury.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal*, 32, 465–491.
- Lewthwaite, B. E. (2005). “It’s more than knowing the science”: A case study in elementary science curriculum review. *Canadian Journal of Mathematics, Science and Technology Education*, 5, 170–186.
- Lewthwaite, B. E. (2007). From school in community to a community-based school: The journey of an Aboriginal principal. *Canadian Journal of Educational Administration and Policy*, 64, 1–23.
- Lewthwaite, B. E., & Mason, R. (2012). Special issue on advocacy for change in mathematics and science education. *Canadian Journal of Mathematics, Science and Technology Education*, 12, 1–6.
- Lewthwaite, B. E., & McMillan, B. (2007). Combining the views of both worlds: Perceived constraints and contributors to achieving aspirations for science education in Qikiqtani. *Canadian Journal of Mathematics, Science and Technology Education*, 7, 355–376.
- Lewthwaite, B. E., & McMillan, B. (2010). “She can bother me, and that’s because she cares”: What Inuit students say about teaching and their learning. *Canadian Journal of Education*, 33, 140–175.
- Lewthwaite, B., McMillan, B., Renaud, R., Hainnu, R., & McDonald, C. (2010). Combining the views of “Both Worlds”: Science education in Nunavut piquisiit tamainik katisugit. *Canadian Journal of Educational Administration and Policy*, 98, 1–71.
- Lewthwaite, B.E., & Renaud, R. (2009). Pilimmaksarniq: Working together for the common good in science curriculum delivery and development in Nunavut. *Canadian Journal of Mathematics, Science and Technology Education*, 9, 154–172

- Lewthwaite, B.E., Owen, T., Doiron, A., McMillan, B., & Renaud, R. (2014). Our stories about teaching and learning: A pedagogy of consequence for Yukon First Nation settings. *Interchange*, 44, 105–128.
- Luke, A. (2010). Will the Australian curriculum up the intellectual ante in primary classrooms? Retrieved from <http://eprints.qut.edu.au/32392/>
- McConaghy, C. (2000). *Rethinking Indigenous education: Culturalism, colonialism and the politics of knowing*. Flaxton, Austral.: Post Pressed.
- Murray, H. G. (1999). Low-inference teaching behaviors and college teaching effectiveness: Recent developments and controversies. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research: Vol. 15* (pp. 323– 345). New York: Agathon.
- Noddings, N. (1996). The cared-for. In S. Gordon, P. Brenner, & N. Noddings (Eds.), *Caregiving: Readings in knowledge, practice, ethics, and politics* (pp. 21–39). Philadelphia: University of Pennsylvania Press.
- Noddings, N. (2002). *Educating moral people*. New York: Teachers College Press.
- Shields, C., Bishop, R., and Mazawi, A, (2005). Pathologizing practices: The effect of deficit thinking on education. New York: P. Lang.
- Smith, G. H. (1997). *The development of Kaupapa Māori theory and praxis*. Auckland, NZ: Department of Education, University of Auckland.
- Smith, L. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. Dunedin, NZ: Zed Books.
- Smith, M. K. (2004). Nel Noddings, the ethics of care and education. *Encyclopaedia of informal education*. Retrieved from [www.infed.org/thinkers/noddings.htm](http://www.infed.org/thinkers/noddings.htm)
- Stephens, S. (2003). *Handbook for culturally responsive science curriculum*. Fairbanks: Alaska Science Consortium and the Alaska Rural Systemic Initiative. Retrieved from <http://www.ankn.uaf.edu/publications/handbook/>
- Valencia, R. (Ed.). (1997). *The evolution of deficit thinking: Educational thought and practice*. New York: Routledge.
- Villegas, A. M., & Lucas, T. (2003). *Educating culturally responsive teachers: A coherent approach*. Albany: State University of New York Press.
- Watt-Cloutier, S. (2000). Honouring our past, creating our future: Education in Northern and remote communities. In M. B. Castellano, L. Davis, & L. Lahache (Eds.), *Aboriginal education: Fulfilling the promise* (pp. 114–128). Vancouver: University of British Columbia Press.

Wyatt, J. D. (1978–1979). Native involvement in curriculum development: The native teacher as culture broker. *Interchange*, 9, 17–28.

Yukon First Nations Advisory Council. (2008). *Helping students succeed: Vision, goals, and priorities for Yukon First Nations education*. Whitehorse: Author.

Appendix A:

Classroom Teaching Inventory (CTI)

Grade: 8 Date: April 23<sup>rd</sup>

There are \_\_\_\_\_ items in this questionnaire pertaining to strategies and actions commonly used by teachers. They are statements to be considered in the context of the class you teach. Think about how well the statements describe your teaching in this class.

Indicate your answer on the score sheet by circling:

- N if you *never* use this strategy in your teaching;
- R if you *rarely* use this strategy in your teaching;
- S if you *sometimes* use this strategy in your teaching;
- O if you *often* use this strategy in your teaching;
- A if you *almost always* use this strategy in your teaching;

Indicate if you would prefer for this action to be used more (+), less (-) or remain the same (0).

If you change your mind about a response, cross out the old answer and circle the new choice.

1. What is taught is connected to students' lives.	N	<del>R</del>	S	<del>O</del>	X	<del>+</del>	0	-
2. Students show their learning in various ways, not just in written form.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
3. High expectations for student performance are communicated.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
4. As a class, we identify common learning goals.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
5. Instructions and explanations are abbreviated.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
6. Visual images are used to communicate ideas.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
7. Stories are shared that are relevant to students.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
8. Hands-on experiences are used to provide concrete example.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
9. Time is given for students to respond to questions or during discussion.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
10. I converse with individual students about things that interest them.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
11. Students are encouraged as they work towards learning goals.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
12. There are expected routines associated with student and teacher behavior.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
13. The tasks carried out in class encourage perseverance.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
14. Students are given time to think things through in their own mind.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
15. A variety of ways are used to get across ideas.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
16. Local examples including people are used in teaching.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
17. Connections are made between new learning and previous learning.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
18. What is to be learned is clearly communicated.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
19. Students are provided with many opportunities to master skills.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
20. Students work together on tasks.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
21. Students show their learning by sharing with a partner or a group.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
22. Students are asked to volunteer answers rather than being asked directly.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
23. I check to see if students grasp ideas before moving on to the next topic.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
24. Students are encouraged to seek assistance from others.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
25. Feedback is provided as students work on tasks.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
26. We celebrate our successes as learners.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
27. Students are given repeated opportunity to master skills.	N	<del>R</del>	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
28. I give students lots of examples to help assist students in their learning.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
29. I get students to work together and help others on activities & problems.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
30. Students are assisted with their work as they request assistance.	N	R	S	<del>O</del>	<del>X</del>	A	<del>+</del>	0
31. Students receive feedback about their performance as they complete tasks.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
32. Tasks carried out encourage student creativity and independent thinking.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0
33. Lessons are paced to allow students time for task completion.	N	R	<del>S</del>	<del>O</del>	<del>X</del>	A	<del>+</del>	0

O before  
X after

## Appendix B:

### Calling Moose: A story told by Rita Drugan of Dawson City

We were hunting moose up the Dempster Highway during rutting season. This is when the moose are very active because they are mating. We had driven off the Dempster and were along the Klondike River. My husband, Dick Field, got out of the truck and went into the bush and I followed him. He said this was an area where there were often moose and he had seen sign of moose.



He started to call the moose. He used a rolled up piece of birchbark that looked like a bugle or trumpet. I saw him cup his hands to call before, but he said this way the sound was louder. It had more volume. He then started to call. It was a very low sound. It wasn't a grunt but it was a groaning deep sound. He was trying to impersonate a cow moose.

In the distance of the bush we could hear something coming through the bush. Dick told me to go back to the truck because he said that the bull moose can be dangerous during rutting season. He then told me to go real fast.

I started to run back and pretty soon I was really scared because I could hear the moose thundering through the bush. It was trying to get me!

I finally got to the truck and was trying to open the door to jump in. Just then I heard the crack of a gun. I looked behind me and there was the moose falling to the ground just a few steps behind me. Dick had shot the moose. The bull moose had come right up to where we were just because he was calling.

He used to practice moose calling at home and would teach his children to call moose. I think there was a different call for different times in the season. I think you can also call moose by rubbing an axe handle against a tree. I am not sure what that does but I hear it works.

This is a website where you can hear different kinds of moose calls.

<http://www.sherryfelix.com/Creatures/Moose/Moose.htm>



## **Making a "Moose" Caller**

### **What you need:**

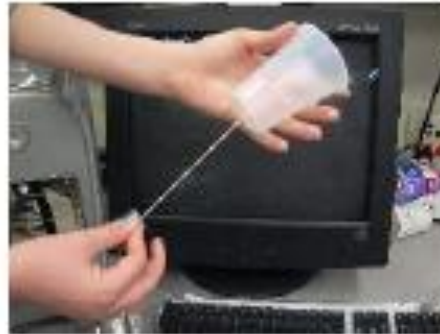
Different kinds of containers such as disposable plastic cup (best) or paper cup or coffee can.

Different kinds of string, about 2 feet (60 cm) long. Try cotton string, nylon twine and dental floss. Try thin and fat, waxed and unwaxed, wet and dry string, even try shoe laces. Thick string and a long can work the best.

Something sharp and round to punch a hole in the cup.

Something to keep the string from pulling out if a knot doesn't work (you might not have to do this, but you will if the string is thin like dental floss or with a paper cup). You can use a button, washer, matchstick or toothpick or twig.

### **What you do:**



### **Step 1**

Punch a small hole in the middle of the bottom of the cup--just big enough for the string to fit through--and push the string through the hole.

### **Step 2**

There are two ways to attach the string to the bottom of the cup. Tie the end to the matchstick or toothpick. This is more work but better because you don't have to be as careful about yanking too hard. Alternately, tie a very big knot on the end of the string that goes through the cup, to keep it from pulling through the hole. Loop it several times to make the knot fat.

### **How to use the "moose" call.**

Usually, you will need to wet the string. Wetting it serves the same purpose as the rosin applied to bowed string instruments. You might want to try waxed dental floss. Hold the cup in one hand and the string--near the cup--between thumb and forefinger. Pull. You should hear a noise, and it should be loud.

### Making and Testing a Moose Caller

Draw pictures of at least 3 different callers you make and describe using the words volume and pitch what kinds of sound they make. Notice how the sound changes when the cup size and type of string or cup material change. You may wish to compare your sounds to this person's sound  
<http://www.youtube.com/watch?v=3FqfozVkrul>

Picture of the Caller	What Kind of Sound Did it Make?

Picture of the Caller	What Kind of Sound Did it Make?

Picture of the Caller	What Kind of Sound Did it Make?

### Making a Real Moose Caller

Draw the steps Mr. Henry used to make the moose caller.

What have you learned from Mr. Henry? Write a letter to Mr. Henry telling him what you have learned.