

Native Language Use in Learning Environmental Science: Yellowstone and Altai Contrasting Mountain Systems



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Conceptual Framework

Ethnocultural Pedagogical Content Knowledge

- Ethnocultural pedagogy
Pedagogical content
Genetic relationships among Indigenous people
Sacred places and rites
Identity shaped by landscape and movement
Native Language
Indigenous Research
- Relationship
 - Reciprocity
 - Respect
 - Relevance
 - Responsibility

CONCEPTUAL		Planning Working Questions and Addressing Needs		METHODOLOGICAL	
Level	Focus	Level	Focus	Level	Focus
WHOLE/VIEW	ETHNO Pedagogical and Cultural Sustainability	People	How do we connect to a community? How do we connect to a community? How do we connect to a community?	Method	How do we connect to a community? How do we connect to a community? How do we connect to a community?
PELOSONY	Historical Native Traditions - Sites of National Land Science and - Reporting	Plan	How do we connect to a community? How do we connect to a community? How do we connect to a community?	Value	How do we connect to a community? How do we connect to a community? How do we connect to a community?
THEORY	Native Science & Values - Government and Non-Government - Education and Education	Learn	How do we connect to a community? How do we connect to a community? How do we connect to a community?	KNOWLEDGE CLAIMS	How do we connect to a community? How do we connect to a community? How do we connect to a community?
PROCESSES	Learning Science Learning - Ecological Content - Student Science - Collaborative Research	Transformations	How do we connect to a community? How do we connect to a community? How do we connect to a community?	DATA	How do we connect to a community? How do we connect to a community? How do we connect to a community?
CONCEPTS	Learning (person, social, cultural, experiential, place-based) Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based	Values	How do we connect to a community? How do we connect to a community? How do we connect to a community?	Observations	How do we connect to a community? How do we connect to a community? How do we connect to a community?
TECHNIQUES	Learning (person, social, cultural, experiential, place-based) Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based	Interviews	How do we connect to a community? How do we connect to a community? How do we connect to a community?	Field Notes	How do we connect to a community? How do we connect to a community? How do we connect to a community?
TECHNIQUES	Learning (person, social, cultural, experiential, place-based) Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based Native Science, social, cultural, experiential, place-based	Library	How do we connect to a community? How do we connect to a community? How do we connect to a community?	Library	How do we connect to a community? How do we connect to a community? How do we connect to a community?
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Project Research Questions

What is the role of native language in learning environmental science in contrasting Yellowstone and Altai mountain systems?

Student Research Questions 2014

- What are the similarities and differences in sacred sites, especially mountains?
- What are the ecological and cultural similarities and differences between Yellowstone and Altai system?
- What plants are similar and different and how are they used?
- How has life changed in relation to changes in climate?
- What are common native stories and how are they related to ecological and cultural factors?

Yellowstone and Altai Sites

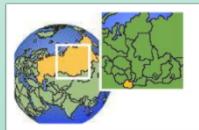
Yellowstone National Park
Glacier National Park
Reservations

Altai & Katunsky Zapovedniks
Uch Enmeck; Ethnocultural Nature Park
Ukok Plateau

Yellowstone and Altai People

Blackfeet
Chippewa Cree
Crow
Assiniboine
Gros Ventre
Sioux
Northern Cheyenne

Tubalars
Teleuts
Shors
Telengits
Uryanhaits
Oirots



Methodological Framework

Indigenous Research Methodologies

Value Claims

Knowledge Claims

Results 2014

- Tea and native plants
- Learning endemic plants in informal settings, family
- Sacred places; spirit and nature
- ancient, people who know,
- Boats at top of surrounding mountains
- Flooding as result of glaciers

Relationship of grazing practices to sustainability and sacred nature of land

Protection of sacred sites; parks, etc.

Data Acquisition Methods

- Audio and video recordings
- Interviews/conversations
- Observations
- Field notes
- Library resources

