

Education, Resilience, and Scenarios: Creating Capacity for Community-Based Observations through Youth Engagement

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Schools are governance

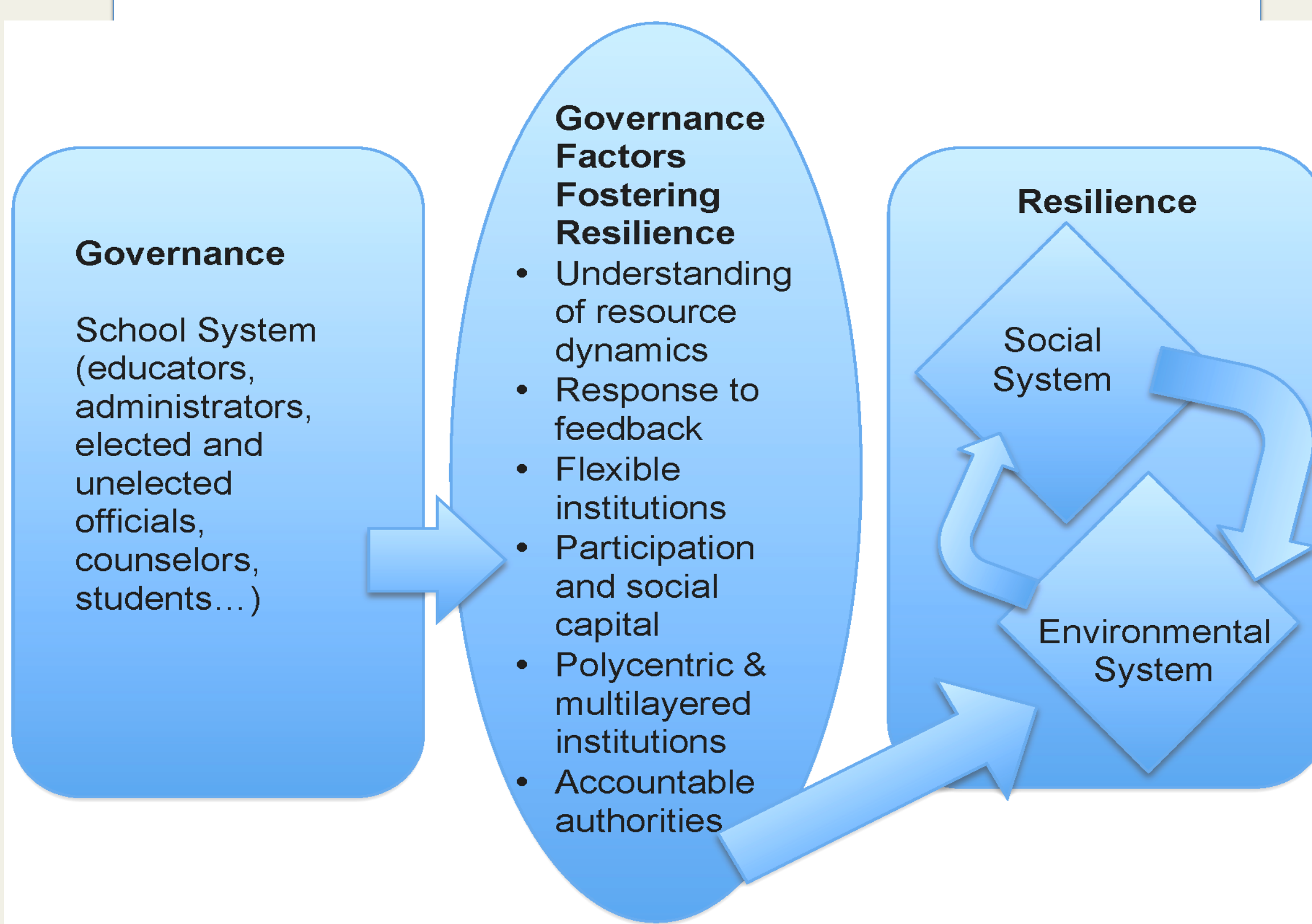
Abstract

Education and learning possess powerful potential in affecting future resilience and community-based monitoring. This research focuses on examining the connections and feedbacks between social-environmental systems (SEs), resilience, and compulsory education. We suggest scenarios development as a way to link local-scale interest in change to education and monitoring of key variables for resilience. SEs have been problematized as frequently having a poor fit between environmental change and policy solutions. This has led to discussion and debate over the role of schools in addressing local knowledge, environmental changes, and community priorities. In Alaska and other Arctic countries, the role of public schools in improving this fit has been largely overlooked. This research explains that as extensions of governments, public schools offer an opportunity to create better linkages between societies and environments through governance. Secondly, at the individual level, education is a vital component of resilience, but such education must embrace multiple perspectives in its curriculum in order to honor and access the diversity offered by local, traditional ecological knowledge and Western methods. Scenarios are inherently transdisciplinary processes that integrate different knowledge perspectives as participants consider what matters the most and what is most uncertain in the long-range future. We report research results from two linked scenarios projects. The Northern Alaska Scenarios Project (NASP) drew resident expert participants from the North Slope and Northwest Arctic Boroughs and the Arctic Future Makers project (AFM) that completed a scenarios exercise with high school students from across the Northwest Arctic Borough.

K-12, compulsory schooling, is governance

Evidence-based requirements for resilient outcomes can be used to build foster resilience in educational practices. Variance on these six key variables within a school system can result in higher or lower resilience in its social environmental system.

(D.Cost 2015, *Ecology and Society*)



Resilience through education

Education can foster resilience

School as a form of governance has often been detrimental to those peoples who have been marginalized and colonized. How, when thinking about school as a form of governance, can it be transformed to better fit the needs of those it serves and continues to govern?

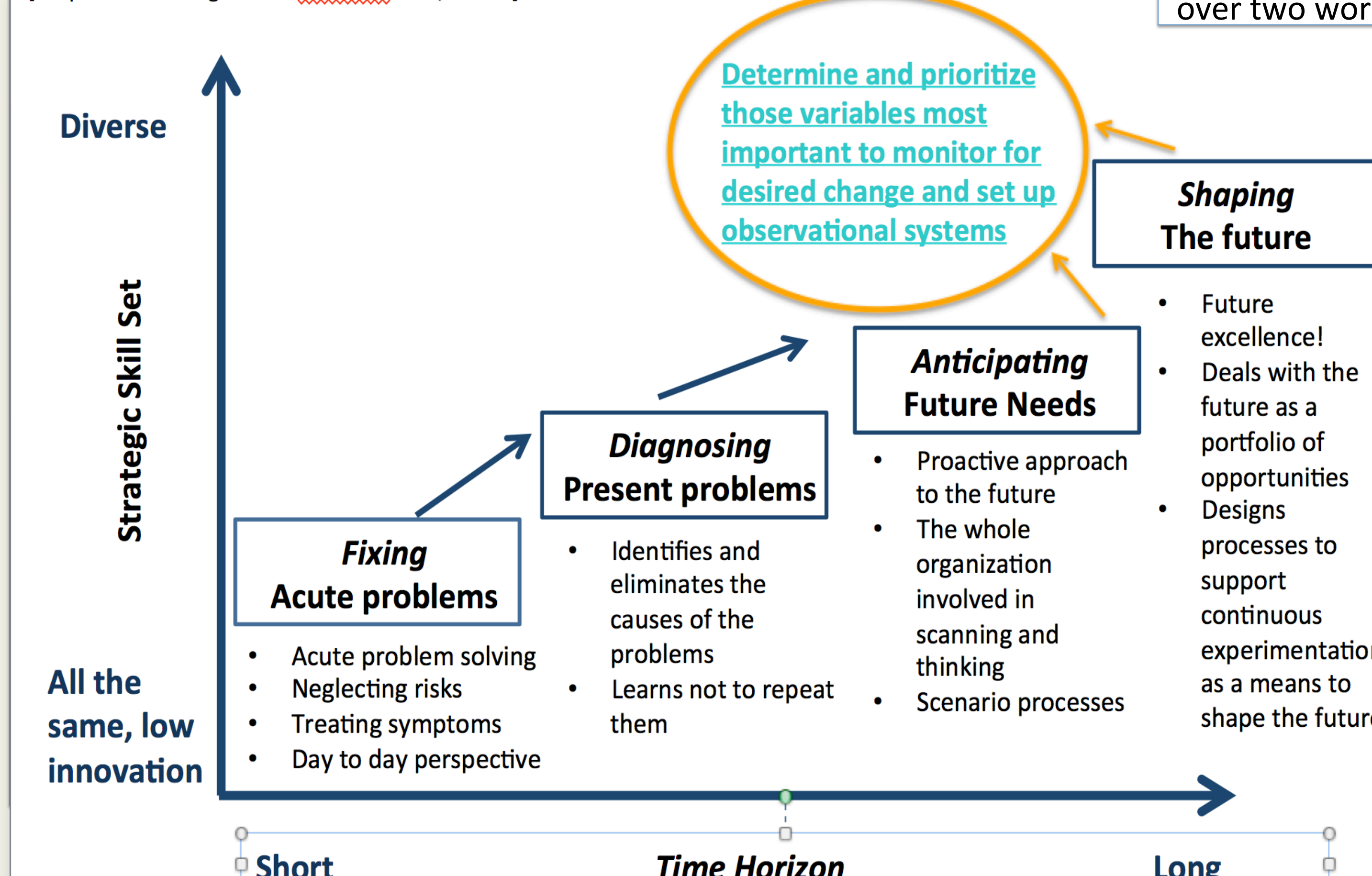
Schools can facilitate students' capacity to understand complexity and respond with flexibility to challenging situations at the individual level. They also can develop students' capacities to envision and imagine alternate futures through the use of simulations and scenarios to explore possible outcomes across all disciplines employing collaboration and technology. This in turn can enhance community resilience because of the vital role played by rural schools. Research demonstrates that schools can be and have been the heart of community activism, action, and collaboration. Because schools in rural Alaska have often been in place for decades, have some dedicated funding, persist in providing routinized schedules, have the backing of multiple levels of government, they can serve as community touchstones that offer stability in a rapidly changing social-ecological environment. Schools offer an approach of governance that has the power of action in communities.

Holistic learning in Scenarios

Participatory scenarios embrace multiple forms of knowledge

A scenario exercise is not planning or decision-making. It is a process of asking "what if?" that enables the participants to imagine multiple futures and establish what matters most for a path to the future. It forms a foundation for understanding uncertainties that can inform planning and decision-making in the future. Instead of passively adapting to whatever comes, scenarios can help individuals, governments, and organizations to actively and creatively shape the future of governance. We report on two projects in which arctic resident experts participated in an iterative scenarios process.

[adapted from Lindgren and Bandhold, 2009, 15&27]



Arctic Future Makers

Who will inherit the Arctic?

The Northern Alaska Scenarios project (NASP), funded by the National Science Foundation, has worked with dozens of resident experts from the North Slope and Northwest Arctic Boroughs in three workshops (February, July, and February 2015-2016) to develop scenarios tied to the focal question "What is required for healthy sustainable communities by 2040?" Arctic Future Makers grew out of a parallel grant from the Northwest Arctic Borough Science Commission to replicate, in a manner appropriate for high school, a two-day scenarios workshop. Working with the leadership and students of the Northwest Arctic Borough School District (NWABSD), a subset of the NASP team facilitated scenarios development in Kotzebue with high school students including students from every borough village (23-24 February 2016). The overarching learning outcome for the students was to provide a futures-thinking framework for them to imagine and develop stories surrounding what they thought community health and sustainability meant and how it could be tracked over time.

Why do the ideas of youth matter?

The AFM research goal is to understand the priorities of Arctic rural youth in relation to health and sustainability of their communities because they are a group often overlooked and yet vital to maintain the cultural, economic, and social knowledge related to the future of their community's well being. For the students specifically we wanted to learn their own priorities for the future and to foster in them a sense of what they want for themselves and their community in 2040 and begin to think about how to get there.

Key Factors for healthy sustainable communities in 2040

From an initial brainstorming of nearly 100 key qualities, characteristics, needs, and things, the students discussed and voted on key factors they felt must be present in their future Arctic communities. Twelve arose as the most significant to them. The next column shows the list created by the adult resident experts over two workshops.

High School Students

1. The arts
2. Alternative energy
3. Local decision-making in government to government communications
4. Good jobs
5. Scholarships and access to education
6. Outdoor activities
7. Beautiful land/clean environments
8. Good and accessible healthcare
9. The right to bear arms
10. Inupiaq values
11. Subsistence
12. Sea ice

Northern Alaska Scenarios

Key factors adult resident experts

1. Inupiat Values
2. Land management and ownership
3. Subsistence security
4. Sustainable energy
5. Participation in the regulatory process
6. Interaction of levels of governments
7. Substance abuse and related crime
8. Intersectional community engagement
9. Preparation of teachers and school administrators
10. Climate change at the global and regional scale
11. Access to quality healthcare
12. Transmission and recognition of traditional knowledge
13. Demographics
14. Cost of living
15. Pan-Arctic collaboration
16. Tribal governance
17. Access to and affordability of housing
18. Local determination
19. Language proficiency
20. Local access to education for college, career, and livelihood readiness
21. Access to markets

Preliminary Conclusions NASP and AFM

As you can see above a suite of key factors is tied to "fate control" – the ability for these northern boroughs and their peoples to engage in productive conversations with political officials and managers that reflect local knowledges. There must be capacity for participation and collaborative decision-making. While climate change matters, the majority of Arctic residents are confident in their ability to adapt. What they want are the educational, health, and economic and energy systems appropriate to their region to enable them to diversify and expand on their skills to adapt in different aspects of their lives.

Often in village and rural communities, where climate, environmental, and socioeconomic changes are having the greatest effects, public schools could be a haven for innovation and deliberation as a stable, functional, social institution. Although currently mostly externally controlled, schools can become co-managers in a community's future, rather than reactive forces to standardized policies from remote locations.

These lists are only a portion of the work done. The participants and UAF team have developed scenarios from the key factors and their future projections and we have collected suites of indicators for planning monitoring strategies. In addition, both NASP and AFM used survey methodology to collect and catalog data from participants. Our first commitment is to the integrity of the data collected and its return to our participants and the boroughs. Full reports and academic papers should be available for the public by August 2016. Please feel free to contact us!

