

NASA NICE Climate Change Education: Best Practices for Incorporating Climate Change Pedagogy

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Research

Abstract

In this research initiative, the 2013-2014 NASA NICE workshop participants will present best educational practices for incorporating climate change pedagogy. The presentation will identify strategies to enhance instruction of pre-service teachers to aligned with K-12 science, technology, engineering, and mathematics (STEM) standards. The presentation of best practices should serve as a direct indicator to address pedagogical needs to include climate education within K-12 curriculum.

Some of the strategies will include inquiry, direct instructions, and cooperative learning. At this particular workshop, we have learned about global climate change in regards to how this is going to impact our life. Participants have been charged to increase the scientific understanding of pre-service teachers education programs nationally to incorporate climate education lessons. These recommended practices will provide feasible instructional strategies that can be easily implemented and used to clarify possible misconceptions and ambiguities in scientific knowledge. Additionally, the presentation will promote an awareness to the many facets in which climate change education can be beneficial to future learners and the general public. The main scope is to increase the amount of STEM knowledge throughout the nations scientific literacy as we are using the platform of climate change.

Federal entities which may include but not limited to National Security Agency and the Department of Homeland Security and Management will serve as resources partners for this common goal of having a more knowledgeable technological savvy and scientific literate society. The presentation will show that incorporating these best practices into elementary and early childhood undergraduate programs will assist with increasing an enhance scientific literate society. As a measurable outcome have a positive impact on instructional effectiveness of future teachers. Their successfully preparing students in meeting the standards of the Common Core Initiative will attempt to measure across the curriculum uniformly.



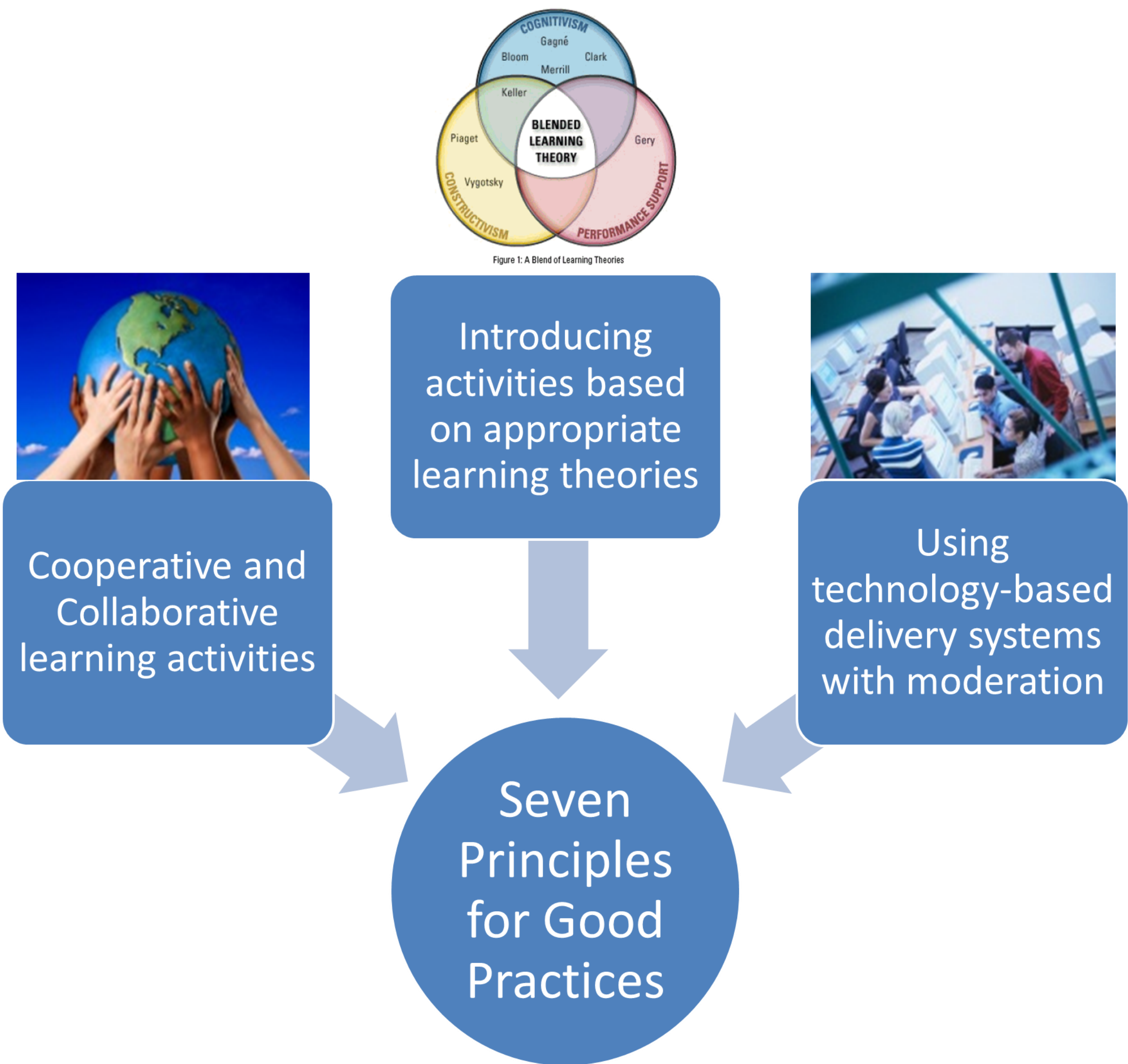
Best Practices for Learning Assistance

The participants identified several best practices in educational research literature for effective theory and pedagogy guided by emerging educational theories (Arendale, 2010) that seemed appropriate for integrating climate education learning of preservice college students. The best practices identified by Arendale (2010) come from national studies that suggest fifty best learning assistance practices for effective theory and pedagogy. The learning assistance best practices utilized in the development of integrating climate education learning among preservice college students in creating lessons for K-12 curriculum (Arendale, 2010).

The learning assistance practices are organizational and administrative decisions, essential program components, critical instructional practices, important personnel practices, rigorous evaluation procedures, and necessary institutional practices, policies, and culture (Arendale, 2010).



Three Critical Pedagogical Approaches



The NASA-NICE researchers will adapt the critical instructional practices of best learning assistance practices that focused on three specific pedagogical approaches (Arendale, 2010).

References

- Arendale, D.R. (2010). Best practices and models in learning assistance. *ASHE Higher Education Report* 35(6), 87-104. Retrieved from Academic Search Premier database.
- Chickering, A.W. & Gamson, Z.F. (1999). Development and adaptations of the seven principles for good practice in undergraduate education. *New Directions for Teaching and Learning*, 80, 75-81. Retrieved from Academic Search Premier database.

Seven Principles for Good Practices in Undergraduate Education

This research endeavor of incorporating climate change pedagogy has adopted the critical instructional practices as one of the learning assistance practices to enhance climate change instruction of aligned with common core state standards and science standards (Next Generation Science Standards) of K-12 science, technology, engineering, and mathematics. Chickering and Gamson's (1999) seven principles for good practice in undergraduate education support the three pedagogical approaches during implementations.

