

Nature-Based Learning in Higher Education

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Overview

Why Nature-Based Learning?

Examples of Nature-Based Learning Experiences

Faculty Nature-Based Learning Group

Assessment

What's Next?

Session Discussion



Benefits of Spending Time in Nature

- ❖ Decreased stress
- ❖ Increased subjective emotional well-being
- ❖ increased attentional functioning
- ❖ Promotes cognitive development/functioning
- ❖ Increased happiness
- ❖ Increased positive social interactions
- ❖ Decreased anxiety
- ❖ Improvements in mental health

Nature in Higher Education

Campus and building design

Domestic/international travel offerings

Elective courses

Residential programs

Green spaces

Field trips

Freshman orientation programs

Science/environmental education

Mental health (eco-therapy)





Nature in Higher Education

Although the benefits of nature-based experiences such as outdoor physical exercise have been widely noted, urban community college students are rarely offered such programs as part of their college experience.

Suburban and rural areas where students often live on campus

Most community colleges do not offer residential housing for their students.



Nature in Higher Education

Commuting students are often off campus during the evening or on weekends and they are less likely to “perceive their campuses as places to heal from whatever is plaguing them” (Rakow & Eells, 2019, p.69).

Urban community colleges should seek to find ways of incorporating nature and nature-based experiences into the infrastructure of the college so that students are not required to travel or spend a significant amount of time outside the class to gain the benefits of these experiences.



Nature-Based Learning

“Nature-based learning, or learning through exposure to nature and nature-based activities, occurs in natural settings and where elements of nature have been brought into built environments, such as plants, animals, and water (Jordan & Chawla, 2019, p.2).

- increased well-being
- academic achievement
- pro-environmental behaviors and attitudes
- improved cognitive functioning
- increased attention and motivation
- improved social relationships
- decreased stress



Eco-Art Workshop

Pilot Study (1)-Introducing Students to Human Services Related Fields (PLO)

Learn about the fields of art therapy and eco-therapy

Select an item(s) from nature that you can relate to or has meaning to you

- self-representation, signify a memory, or be a symbol for your future

Create a piece of art based on this item(s)

Describe the item(s) you selected and why you selected it.

Describe your art piece.

What is the title?

What was the process of creating your art piece like for you?

How did nature influence this experience for you? Explain.

How could nature-based experiences or the idea of ecotherapy be incorporated into your life? Your work with clients or students?

My collage is a tree without leaves and a bleeding golden eye, because I feel people want be to be perfect, but I have to get rid of the pain to look beautiful on the outside. The blue in the collage represents the rain and the ocean, which is somewhere I can feel at peace. The swirls and shells are because I love to dance and I love nature.

LIFELESS TREE



Animal Assisted Therapy Workshop

Pilot Study (1)-Introducing Students to Human Services Related Fields (PLO)

- NY Therapy Animals
- Learn about the field and populations served
- Role played scenarios

Feedback

Feedback found that responses fell into one of three themes (Kras, 2021)

(1) **General satisfaction with experience**

- reported benefits of participating in the activity such as having fun, meeting new people, or learning something new.

(2) **Opportunity for self-expression**

- theme demonstrated the participant's personal connection to reflection on the experience

(3) **Awareness of stress-reduction**

- demonstrate a participant feeling less stress or more calm or peaceful

Pilot Study (2)-Central Park Zoo

Ethnographies of Work is a first-year social science course that focuses on understanding workplace culture through ethnographic research.

COURSE LEARNING OUTCOME

Show enhanced understanding and practice of responsible and ethical work habits gleaned from ethnographic accounts of people at work in their research sites.

COURSE LEARNING OUTCOME

Demonstrate the ability to use diverse ethnographic methods (e.g., crafting pertinent research questions, conducting fieldwork with observations, an interview, and the recognition and analysis of artifacts) and concepts to research and compose a reflective, multifaceted analysis of the experience of individuals working in specific occupations.



Pilot Study (2)-Central Park Zoo

(1) What do you think it is like to have a career working with animals?

(2) What type of career options are out there for people who want to work with animals? and

(3) Is this a type of career you would like to pursue? Why or why not?

Develop a research question that would guide their research at the zoo.

-Two-part experience

Pilot Study (2)- Central Park Zoo

KNOWLEDGE GAINED ABOUT "THE WORLD OF WORK"

"TO BE HONEST, WHEN I SAW HOW MUCH THE ZOOKEEPERS LOVE THEIR JOBS IT MADE ME REALIZE HOW MUCH I SHOULD BE SETTING GOALS FOR MYSELF."

ENJOYMENT OF INTERACTING AND LEARNING ABOUT ANIMALS

"IT WAS AMAZING, I LOVE SEEING ANIMALS,"

HAVING FUN DURING THE EXPERIENCE

"THIS EXPERIENCE WAS SO MUCH FUN AND VERY NOSTALGIC. IT REMINDED ME HOW MUCH MY CHILDHOOD WAS SO FUN AND REALLY ENGAGING."

"FOR YOUR FUTURE CLASSES, I THINK MORE TRIPS WOULD BE SO FUN FOR YOUR STUDENTS."



Demonstrate an understanding of clients and the problems they face (food deserts) (CLO)

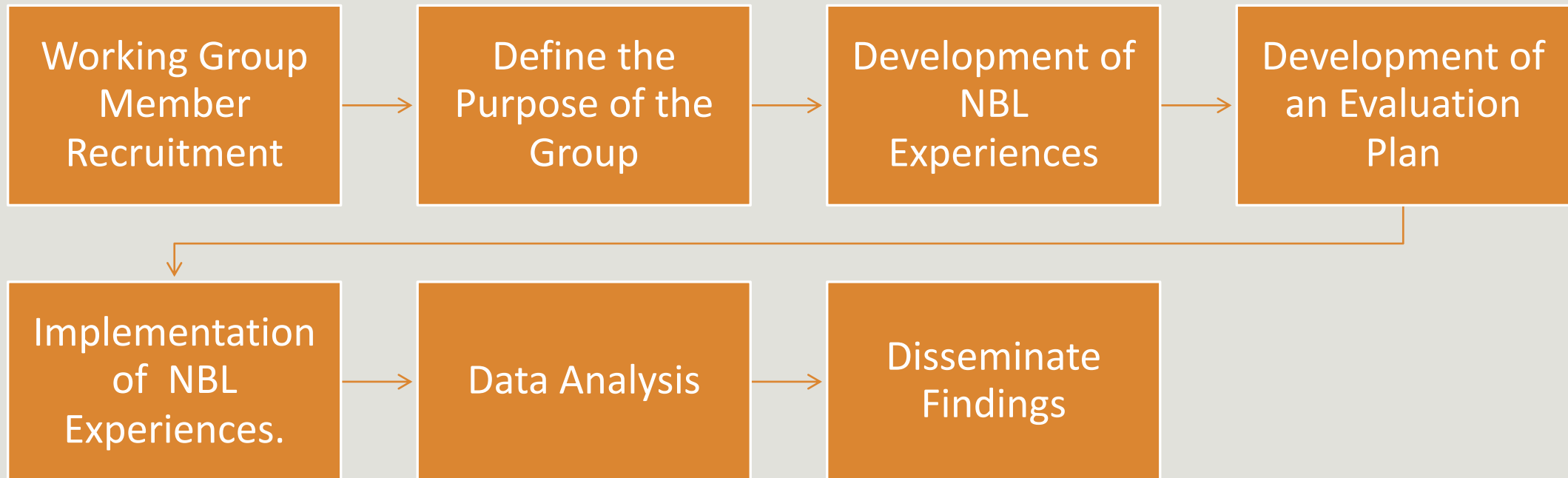


Greenmarket Visit-Union Square



NBL Faculty Group

(Kolb, 2014; Rakow & Eells, 2019; Wall's 2014)



RESEARCH
QUESTIONS

How might NBL and classroom-based instruction complement each other?

How does nature exposure impact learning for urban community college students?

Timeline for Implementation

Spring	Fall	Spring	Summer
<p>Spring/Summer 2022</p> <ul style="list-style-type: none">• Working group member recruitment• Define the purpose of the group• Development of an evaluation plan• Development of nature-based learning experiences	<p>Fall 2022</p> <ul style="list-style-type: none">• Development of nature-based learning experiences• Implementation of nature-based learning experiences• Data analysis	<p>Spring 2023</p> <ul style="list-style-type: none">• Implementation of nature-based learning experiences• Data analysis	<p>Summer 2023</p> <ul style="list-style-type: none">• Data analysis• Disseminate findings

Assessment

Feedback about NBL experience and how it impacted student learning (Students)

Feedback about implementing a NBL into courses (Faculty)

Feedback about the framework to pilot NBL across disciplines





Student Feedback

Participating in a nature-based learning experience was enjoyable for me.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Participating in a nature-based learning experience increased my engagement in the lesson.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Participating in a nature-based learning experience increased my understanding of the lesson being taught.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Please describe how participating in a nature-based learning experience was like for you.

Please describe how participating in a nature-based learning experience impacted your learning.

Do you think incorporating nature-based learning into course curriculum is important? Why or why not?

Is there anything else you would like to add about the nature-based learning experience you participated in or nature-based learning experiences in general?

Faculty Feedback

What benefits did you experience implementing a nature-based learning experience in your course?

What challenges did you experience implementing a nature-based learning experience in your course?

Participating in a nature-based learning experience was enjoyable for your students.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Participating in a nature-based learning experience increased student engagement in the lesson.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Participating in a nature-based learning experience increased student understanding of the lesson being taught.

Disagree-Somewhat Disagree-Neither Agree or Disagree-Agree-Strongly Agree

Please describe how developing and implementing a nature-based learning experience was like for you.

Is there anything else you would like to add about nature-based learning experiences in general?



Next Steps/Discussion

References

Berman, M. G., Jonides, J., & Kaplan, S. (2008). The cognitive benefits of interacting with nature. *Psychological Science, 19*(12), 1207-1212. doi: 10.1111/j.1467-9280.2008.02225.x

Camasso, M., & Jagannathan, R. (2018). Improving academic outcomes in poor urban schools through nature-based learning. *Cambridge Journal of Education, 48*(2), 263-277.

Chawla, L. (2018). AATC keynote address: Nature-based learning for student achievement and ecological citizenship. *Curriculum & Teaching Dialogue, 20*(1/2), xxv-xxxix.

Cornell Health. (2019). *Nature RX*. Retrieved from <https://health.cornell.edu/resources/health-topics/nature-rx>

Cooley, S., Burns, J., & Cumming, V. (2015). The role of outdoor adventure education in facilitating groupwork in higher education. *Higher Education, 69*(4), 567-582.

Dustin, Furman, Bricker, Cederquist, & Schumann. (2017). The relevance of campus outdoor recreation programs to higher education: A university of utah example. *Journal of Outdoor Recreation, Education and Leadership, 9*(1), 3-9.

Ellerton, S., Di Meo, C., Pantaleo, J., Kemmerer, A., Bandziukas, M., & Bradley, M. (2015). Academic service learning benefits diverse, urban community college students, *Journal for Civic Commitment, 23*, 1-17.

References

Finnicum, P., & Zeiger, J. B. (1998). Managing stress through outdoor recreation. *Parks & Recreation, 33*(8), 46.

Heuser, B. (2007). Academic social cohesion within higher education. *Prospects, 37*(3), 293-303.

Howell, A. J., Dopko, R. L., Passmore, H.-A., & Buro, K. (2011). Nature connectedness: Associations with well-being and mindfulness. *Personality and Individual Differences, 51*(2), 166-171. doi: 10.1016/j.paid.2011.03.037

Hu, S. (2010). Scholarship awards, college choice, and student engagement in college activities: A study of high-achieving low-income students of color (Report). *Journal of College Student Development, 51*(2), 150-161.

Ibes, D., Hiram, I., & Schuyler, C. (2018). Greenspace ecotherapy interventions: The stress-reduction potential of green micro-breaks integrating nature connection and mind-body skills. *Ecopsychology, 10*(3), 137-150.

Jordan, C., & Chawla, L. (2019). A coordinated research agenda for nature-based learning. *Frontiers in Psychology, 10*, 766.
<https://doi.org/10.3389/fpsyg.2019.00766>

Kras, N. (2021). Exploring the benefits of ecotherapy-based activities at an urban community college. *Community College Journal of Research and Practice, 45*, (2), 117-123.

Kras, N. (2021). Nature-based learning at an urban community college: A case study at the Central Park Zoo. *Community College Journal of Research and Practice*. Published online <https://www.tandfonline.com/eprint/ZXABEVDFAJMRJPNKR5HW/full?target=10.1080/10668926.2021.1931557>

Matsumura, J. (2016) Ecotherapy as a tool for mental wellness. *The Vermont Connection, 37* (12), 103-110.

My Open Country. (2021). 19 physical and mental benefits of being outside. Retrieved from <https://www.myopencountry.com/benefits-being-outside/>

Nisbet, E., Zelenski, K., & Murphy, J. (2011). Happiness is in our nature: Exploring nature relatedness as a contributor to subjective well-being. *Journal of Happiness Studies, 12*(2), 303-322.

Ottosson, J., & Grahn, P. (2005). Measures of restoration in geriatric care residences: The influence of nature on elderly people's power of concentration, blood pressure and pulse rate. *Journal of Housing for the Elderly, 19*(3/4), 227-256.