SASEE: Science Attitudes & Self Efficacy Evaluation

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A common goal of educators is to make meaningful connections between science concepts and daily life, bringing relevance to science. Brooklyn College’s GK-12 initiative, City-as-Lab, utilizes the city’s parks and other outdoor spaces as laboratories and sources of relevant scientific investigations for five New York City public schools participating in the Small School Initiative. GK-12 Fellows bring their individual research expertise into the classroom, including the disciplines of psychology, archaeology, biology, chemistry, geology, and physics. Additionally, psychology Fellows are collaborating on a multi-school study exploring the effects of place-based and inquiry-based learning. The Science Attitudes & Self Efficacy Evaluation (SASEE) compares student efficacy in science, student attitudes toward science, and student environmental attitudes between classrooms with and without a GK-12 presence. Using SASEE, the psychology Fellows have uniquely integrated their work into the classrooms to create a unifying investigative collaboration between themselves, the physical science Fellows, the participating GK-12 teachers, and students in answering the simple question: What is the effect of the City-as-Lab on students in the science classroom?

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Mark Kanner’s work in environmental physics gives him a solid background to contribute to projects in the classroom involving physical processes. For instance in the Teacher’s Preparatory the urban gardening to help students design and test different types of cold storage for growing crops. The process of designing an apparatus gave the students ownership of the project and helped them understand the potential of cold storage to expand their interest in science.

As a graduate student of chemistry, Rachele Rudi, has integrated her knowledge of chemistry into community-based classroom activities, as well as her year-long projects. She has designed a project where students learned about the practice of GIS by examining and synthesizing data. An example is an assignment for Brooklyn students by determining the long-term capacity using the EU’s (European Union) (Wasted Exploitation) Volume in the first several months. Students also learned about the causes of air pollution, as well as ways through which they can decrease air pollution by making changes to their daily lives to decrease harmful change to student attitudes of science and science relevancy.

Michael Magee has integrated social and cognitive psychology in the classroom, leveraging local knowledge from the field of human geography to create a unifying investigative collaboration between themselves, the physical science Fellows, the participating GK-12 teachers, and students in answering the simple question: What is the effect of the City-as-Lab on students in the science classroom?

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As part of our initiative to promote and increase science interests in students, Kendall Estes has incorporated a variety of experiential learning projects into the classroom at BASE High School. Drawing from his research in social cognition, he has worked closely with students to design and implement experiments ranging from local preferences to emotion induction & moral judgments to behavioral economics. Kendall uses this research to demonstrate the breadth and scope of science-appropriate topics to students in humanities science subjects by making the content relevant.

Anna Petrovicheva’s research on interaction between plants and a pathogen, Apiolesia apiole, Fasciatus, the cause of Carya gall disease, brings knowledge of both botany and microbiology. Both of these have been included in her work with BASE students through teaching them microbial techniques in AP Biology and Living Environment, and a longer project on soil biology and biogeochemical processes in the soil. These lessons fuelled the interest students to do outside research and engage in discussion on the topic outside the lesson time.

Kim Handle has integrated her knowledge of paleoecology several cross-class research projects in an Urban Ecology integrated skills and class revolving around local ecology issues and urban sustainability. Research knowledge from the field of local resource conservation and sustainability. In the help to bring relevancy to their work in the classroom & foster a greater sense of community social justice.

Nick DiFrancesco has integrated skills and knowledge from the field of social psychology into his Teacher’s Preparatory; the project have involved several local research centers and sustainability. We do attempt to appeal to broader student interests in science. Nick has engaged students with questions of public health, social justice, and community ownership to make them more aware of their choices and actions to evoke an awareness and attitude shift on their part.

As a graduate student of chemistry, Reena Rahi, has integrated her knowledge of chemistry and its role in the community into weekly classroom activities, as well as into year-long projects. She has designed a project where students learned about the practice of GIS by examining and synthesizing data. An example is an assignment for Brooklyn students by determining the long-term capacity using the EU’s (European Union) (Wasted Exploitation) Volume in the first several months. Students also learned about the causes of air pollution, as well as ways through which they can decrease air pollution by making changes to their daily lives to decrease harmful change to student attitudes of science and science relevancy.

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