

"Empowering Minds and Unleashing Curiosity: DIY Biotechnology for High School Students in the Age of Distance Learning"

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Abstract : Amidst the challenges posed by pandemic-induced lockdowns, traditional educational models have been disrupted. To bridge the distance learning gap, our project introduces an innovative initiative focused on teaching high school students basic biotechnology techniques. We aim to empower young minds and foster curiosity by encouraging students to create their own DIY biotechnology laboratories using easily accessible materials found at home. This abstract outlines the key aspects of our project, highlighting its importance, methodology, and evaluation approach. In response to the pandemic's limitations, our project targets the delivery of biotechnology education at a distance. By engaging students in hands-on experiments, we seek to provide an enriching learning experience despite the constraints of remote learning. The DIY approach allows students to explore scientific concepts in a practical and enjoyable manner, nurturing their interest in biotechnology and molecular biology. Originally designed to assess professional-level research programs, we have adapted the URSSA to suit the context of biotechnology and molecular biology synthesis for high school students. By applying this tool before and after the experimental sessions, we aim to gauge the program's impact on students' learning experiences and skill development. Our project's significance lies not only in its novel approach to teaching biotechnology but also in its adaptability to the current global crisis. By providing students with a stimulating and interactive learning environment, we hope to inspire educators and institutions to embrace creative solutions during challenging times. Moreover, the insights gained from our evaluation will inform future efforts to enhance distance learning programs and promote accessible science education.

Keywords : DIY biotechnology, high school students, distance learning, pandemic education, undergraduate research student self-assessment (URSSA)

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