Lab to School - Best Practice

1. Title of the Practice

"LAB TO SCHOOL: Bridging the Gap Between Advanced Scientific Learning and School-Level Education"

2. Objectives of the Practice:

- **To Enhance Understanding of Basic Physics Concepts:** Provide school students with hands-on experience to strengthen their understanding of fundamental physics concepts.
- **To Encourage Scientific Curiosity:** Inspire and cultivate an interest in science among students through practical demonstrations.
- **To Facilitate Knowledge Transfer:** Utilize the advanced knowledge and skills of M.Sc.and B.Sc Physics students to benefit younger students in the community.
- **To Promote Interactive Learning:** Move beyond theoretical learning to an interactive, demonstration-based approach that enhances student engagement.

3. The Context:

The "LAB TO SCHOOL" program is an initiative by the Department of Physics and Electronics at Government College (A), Rajamahendravaram, aimed at improving science education in local schools. The program addresses the gap in practical science education at the school level, where students often lack access to advanced laboratory facilities and demonstrations that are crucial for a deeper understanding of scientific principles. By bringing college-level laboratory experiments to schools, the program aims to make science more accessible and exciting for school students.

For the academic year 2023-24, the program was conducted at Kantepudi Rama Rao Municipal High School, Ganesh Nagar, Rajahmundry, from 25th July 2024 to 27th July 2024. The primary participants were IX and X class students, with demonstrations conducted by M.Sc. Physics students from Government College.

4. The Practice:

Over three days, The Department of Physics conducted a series of experiments and demonstrations that covered essential physics concepts. The key experiments included:

1. **Demonstration of Wave Concept:**
    - **Objective:** To illustrate the properties of waves, such as frequency, amplitude, and wavelength.
    - **Experiment:** Using a model wave creator , the students demonstrated how waves propagate, interact, and reflect, helping school students visualize wave behavior.
2. **Periscope:**

    - **Objective:** To explain the principle of reflection of light.
    - **Experiment:** The construction and use of a simple periscope were demonstrated, showing how light can be redirected using mirrors to see objects not directly in view.
3. **Wind Turbine Model:**
    - **Objective:** To introduce the concept of renewable energy and the working principle of wind turbines.
    - **Experiment:** A laboratory-scale wind turbine model was used to demonstrate how wind energy is converted into electrical energy, emphasizing the importance of sustainable energy sources.
4. **Solar Cell Characteristics:**
    - **Objective:** To explain how solar cells convert sunlight into electricity.
    - **Experiment:** Students were shown how to measure the output of a solar cell under different lighting conditions, illustrating the efficiency and practicality of solar energy.
5. **Various Light Experiments:**
    - **Objective:** To explore the properties of light, including reflection, refraction, and diffraction.
    - **Experiment:** Multiple setups, such as prisms, lenses, and diffraction gratings, were used to demonstrate how light behaves under different circumstances.

Each experiment was followed by a Q&A session, allowing school students to clarify their doubts and engage actively in the learning process. Both M.Sc. B.Sc students along with the staff provided detailed explanations and guided the school students through the experiments, ensuring a comprehensive understanding.

5. Evidence of Success:

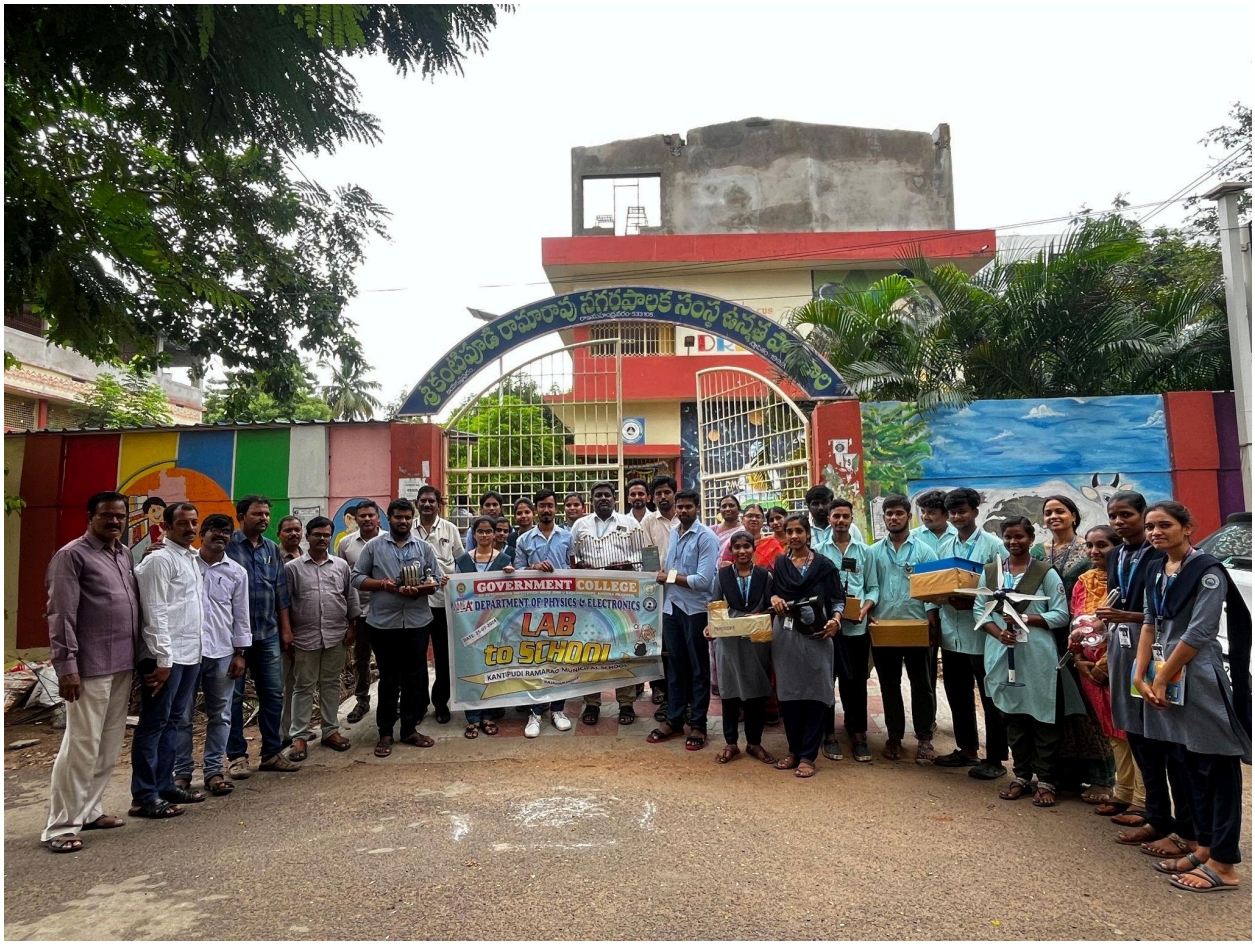
The success of the "LAB TO SCHOOL" program was evident through several indicators:

1. **Student Engagement:** The school students showed high levels of interest and participation throughout the program. Their active involvement in the experiments and curiosity during the Q&A sessions indicated a deepened understanding and enthusiasm for physics.
2. **Positive Feedback:** Teachers and administrators at Kantepudi Rama Rao Municipal High School provided positive feedback, noting that the demonstrations significantly enhanced the students' grasp of concepts that were previously challenging.
3. **Improved Academic Performance:** A follow-up assessment showed that students who participated in the program performed better in their subsequent physics exams, particularly in topics covered during the demonstrations.
4. **Increased Interest in Science:** Several students expressed a newfound interest in pursuing science in their higher education, directly attributing their inspiration to the "LAB TO SCHOOL" program.

Conclusion:

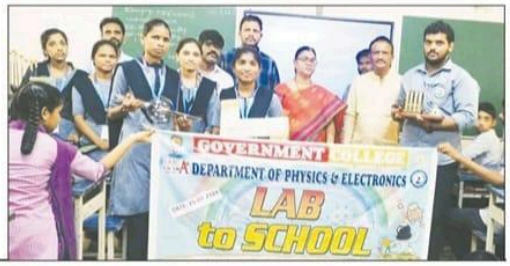
The "LAB TO SCHOOL" program successfully met its objectives of enhancing science education at the school level by bringing advanced physics concepts into the classroom. The hands-on approach not only

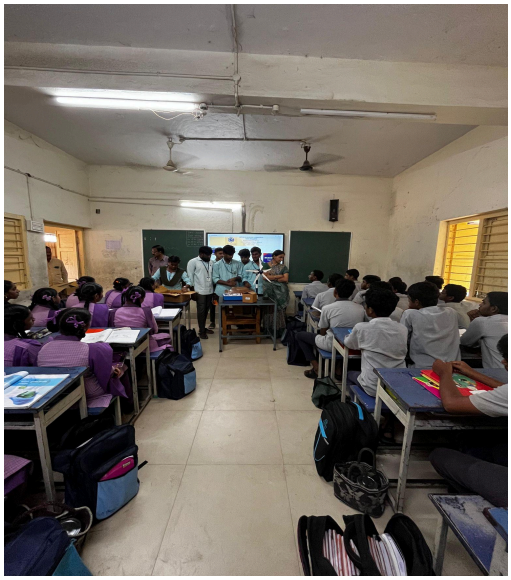
improved students' understanding but also sparked their interest in scientific exploration. The program's success has set a strong precedent for future initiatives, encouraging continued collaboration between the Department of Physics and Electronics at Government College and local schools. The program exemplifies how higher education institutions can play a crucial role in community development by making quality education more accessible and engaging for younger students

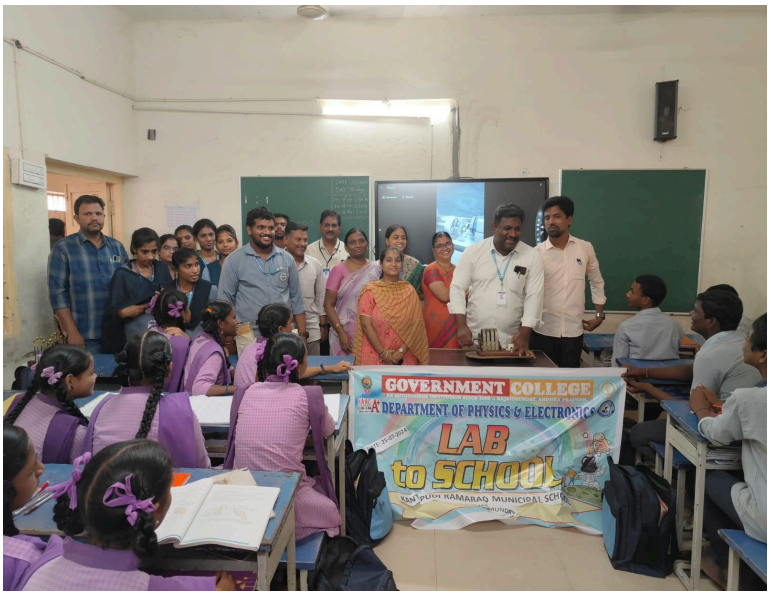


ప్రయోగాత్మక బోధన శాస్త్ర విజ్ఞానంపై ఆసక్తి పెంచుతుంది: కోమల లక్ష్మి

రాజమహేంద్రవరం (న్యూ డిజిటల్): పాఠశాల స్థాయిలో విద్యార్థులకు శాస్త్ర విజ్ఞానం పట్ల మక్కువ పెంచేందుకు 'లాబ్ టు స్కూల్' కార్యక్రమం నిర్వహిస్తున్నట్లు ప్రభుత్వ డిగ్రీ అటానమస్ కళాశాల ఫిజిక్స్ హెడ్ ఆఫ్ ది డిపార్ట్మెంట్ కోమల లక్ష్మి పేర్కొన్నారు. నగరంలోని కంటిపూడి రామారావు మునిసిపల్ కార్పొరేషన్ ఉన్నత పాఠశాలలో గురువారం ఉదయం లాబ్ టు స్కూల్ కార్యక్రమంలో భాగంగా వివిధ సైన్స్ పరికరాలు ఉపయోగించి పాఠాన్ని బోధించారు. భౌతిక శాస్త్ర సూత్రాలు, అనువర్తనాలు.... ఈ విధానం వల్ల విద్యార్థులకు సులభంగా అవగాహన అవ్వడమే కాకుండా మరిన్ని శాస్త్రీయ ఆలోచనకు మార్గం సుగమం అవుతుందన్నారు. కార్యక్రమంలో ఆర్ట్స్ కళాశాల భౌతిక శాస్త్ర విభాగం అధ్యాపకులు వెంకటేశ్వర్లు, సునీల్, బాషా, ఇతర అధ్యాపకులు, కంటిపూడి రామారావు ఉన్నత పాఠశాల ప్రధానోపాధ్యాయుడు పులుగుర్త దుర్గాప్రసాద్, సైన్స్ ఉపాధ్యాయులు పాల్గొన్నారు.



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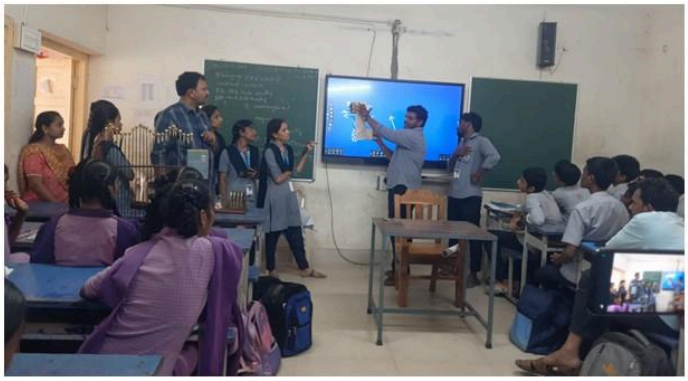

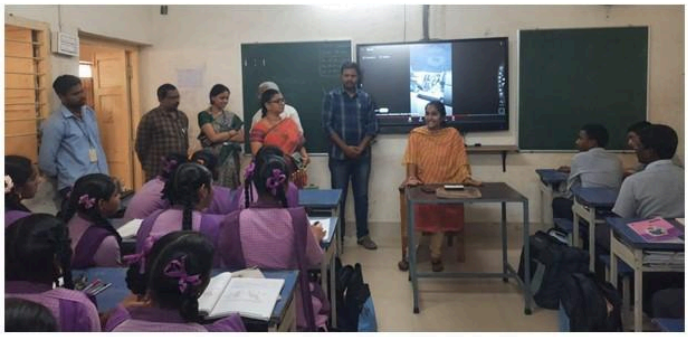

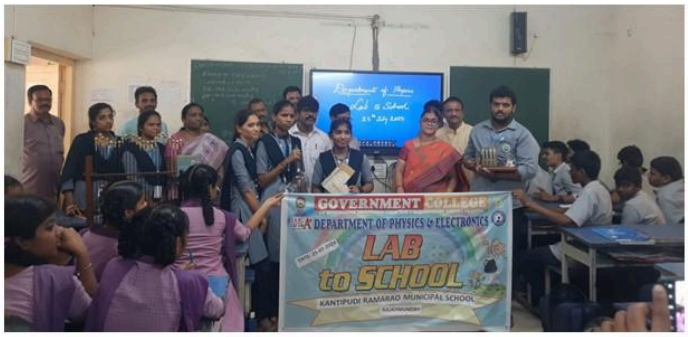
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