Lego Spike: Teaching Essential Coding Concepts

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PROJECT GOAL

This study targets individuals with no programming experience, using LEGO Spike sets to provide a hands-on learning experience. Our goal is to spark interest in technology by creating an interactive environment that encourages exploration, making programming more accessible to a broader audience.

WHAT IS TAP?

The Technology Ambassadors Program (TAP) was created to spark an interest in information technology within the community using fun and interactive technology workshops. TAP aims to engage a broad audience by developing projects that are simple enough to be understood by a wide range of participants, including both those with prior knowledge of information technology and complete beginners.

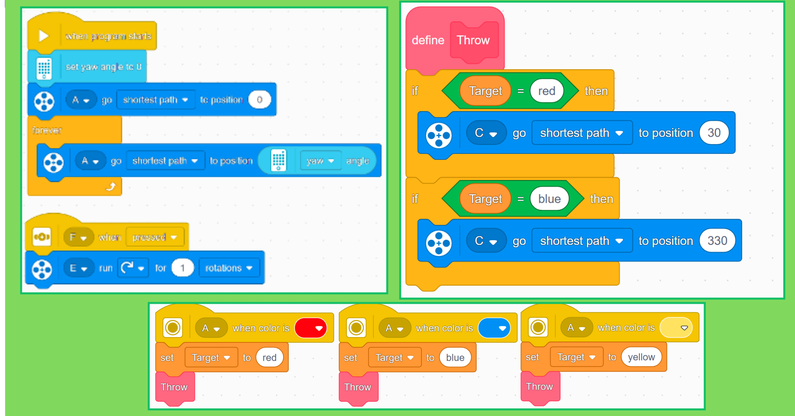
PROJECT DESCRIPTION

This project introduces essential coding concepts through a hands-on workshop in which participants build and program models. Through this playful approach, we hypothesize that students will learn fundamental programming skills like loops, conditionals, and variables, gaining a solid foundation in coding and robotics.

WORKSHOP

We are using LEGO Spike Sets to build a simple launcher, which will be programmed and utilized in engaging carnival-style games. This hands-on project allows participants to interact directly with the technology while learning core coding concepts. Our main educational objective is to teach fundamental programming concepts, specifically variables, conditionals, and loops, in a practical and approachable way.

CODE EXAMPLES

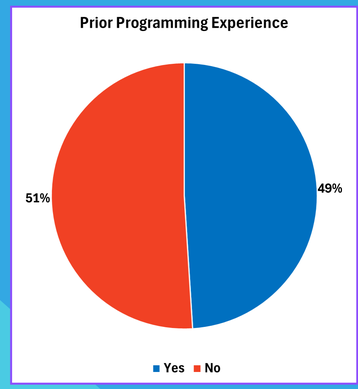


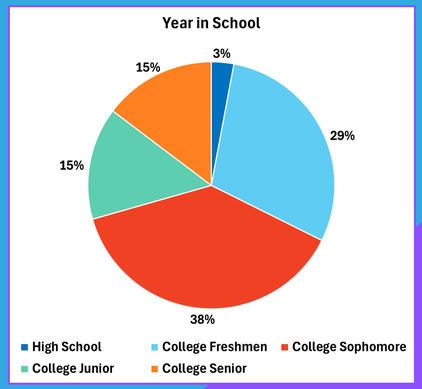
RESULTS

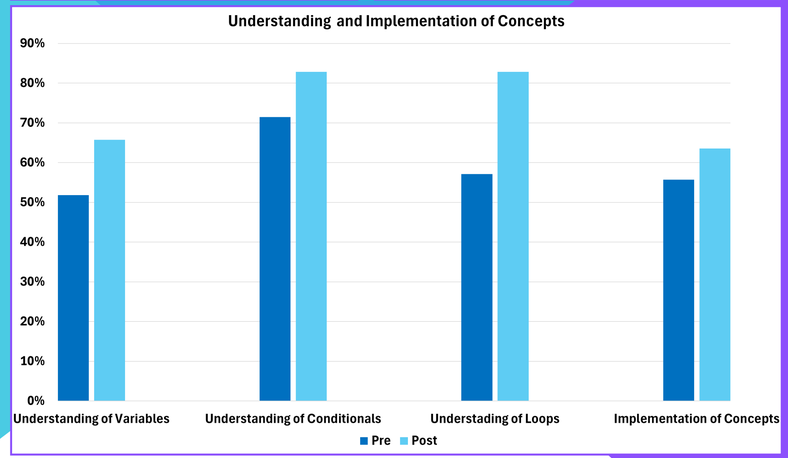
Demographics and Pre-Survey:
The workshops were presented to students from beginner-level IT classes, resulting in a participant pool with different levels of programming experience. Students had various levels of proficiency in basic coding concepts like variables and loops, and how to apply them. Most expressed interest in learning new technology and building coding skills.

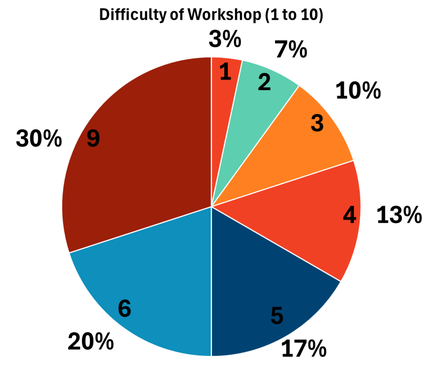
Post-Survey and Conclusion:
Post-survey results indicated improved understanding of coding fundamentals, especially loops and conditionals. Participants found the workshop engaging and generally rated it as easy to follow. Hands-on activities were well-received, though some suggested adding more demonstrations and varied LEGO builds. Overall, the workshop effectively boosted foundational coding skills and increased interest in programming among attendees.

DATA









ACKNOWLEDGMENTS

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