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Teaching Junior/Intermediate Physics Through Woodworking

Monday, May 27, 2024 5:30 PM (15 minutes)

This presentation will describe the pilot offering of a program that aims to develop both cognitive and psychomotor skills in students between the ages of 10 and 14 by exploring physics through the use of hand tools and general woodworking techniques. Weekly activity sessions taking place over a six-month period allowed students to work their way through the concepts of force, pressure, friction, torque, mechanical advantage and other topics in elementary-level physics, and culminated in each student creating a useful object of their own design. The development of lessons and activities was guided not only by student interest and the skills necessary to complete a project, but also by shortcomings in student knowledge, understanding and capability that presented themselves in each session. In this way, each new activity attempted to overcome an obstacle discovered in previous activities. This presentation will briefly describe how concerns about student safety and behaviour are addressed, as well as some of the traditional methods of manual training (or educational handwork) that help to continually inform the development of this project.

Keyword-1

Woodworking

Keyword-2

Hand tools

Keyword-3

Elementary

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Session Classification: (DPE) M3-5 Novel Topics, Teaching Technology, and Labs | Nouveaux sujets, technologie d'enseignement et laboratoires (DEP)

Track Classification: Technical Sessions / Sessions techniques: Physics Education / Enseignement de la physique (DPE-DEP)