Canadian Association of Physicists
Association canadienne des physiciens et physiciennes

Contribution ID: **3667** Type: **Oral (Non-Student) / Orale (non-étudiant(e))**

WITHDRAWN Case Studies: Connecting Classroom With Real World

Monday 19 June 2023 11:45 (15 minutes)

Multiple choice questions are a common teaching and evaluation tool supporting Peer Instruction (PI) pedagogy in large-enrolment introductory physics classes across Canadian universities. Unfortunately, the multiple-choice format limits the opportunities for the students to formulate their own ideas. In addition, such questions often over-simplify the phenomena presented. Case studies based on open-ended and more realistic scenarios can provide a viable additional option for student collaborations in the classroom and beyond. This talk will present an example of such activity –a case study exploring the air resistance and the concept of the terminal velocity. Air resistance is the topic that is often ignored in the introductory physics curriculum, despite being virtually unavoidable in real life. The case study explores the topic through the analysis of a real event: a historic 2012 fall from the stratosphere in which the skydiver broke the world records for the highest "freefall"and the highest manned balloon flight, as well as becoming the first person to break the sound barrier in "freefall". The students were provided the set of data of the skydiver's speed versus time and were asked a series of questions about the flight requiring them to analyze the data provided. While the full effect of such case studies on conceptual learning still needs to be formally evaluated, it is already clear that they have a potential to increase the students' engagement with the material.

Keyword-1

case studies

Keyword-2

air resistance

Keyword-3

terminal velocity

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Session Classification: (DPE) M1-5 DPE I | DEP I (DEP)

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