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What quantum topics and concepts should be included in an ideal secondary school quantum physics curriculum?

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The integration of quantum physics (QP) into secondary school curricula is a growing area of interest in physics education, yet there is little consensus on which topics to include. To address this gap, we conducted a three-round Delphi study involving a total of 175 experts (physics teachers, physics education researchers, quantum physics experts). The participants provided insights into why QP should be taught, identified key topics, and determined appropriate instructional levels (mathematical, conceptual, or awareness-level) for secondary school students. Using an entropy-based consensus measure, we derived a set of topics with high agreement, contextualized within the Competence Framework for Quantum Technologies (CFQT) and tailored for secondary education. These findings contribute to the development of a realistic and community-informed QP curriculum.

Education level

Age 15-18 (Secondary education)

Physics topic

Quantum mechanics

Research focus

Other

Research method

Mixed method (qualitative & quantitative)

Organizing preference criteria

Physics topic

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