**An integrative review of secondary school quantum physics curricula in Malaysia**


## ABSTRACT

As a relatively new subject in the physics curriculum of Malaysian secondary schools, quantum physics (QP) raises questions about its relevance to students and the best approach for teaching it. This paper aims to analyze the content of the QP curriculum to provide students with a meaningful learning experience and expose them to the nature of science (NOS). To accomplish this, the Malaysian standard curriculum document known as Dokumen Standard Kurikulum dan Pentaksiran (DSKP) and the textbook were analyzed through integrative review. Frameworks and perspectives identified by Stadermann and co-workers on the common trust of the QP curriculum in 15 different countries were used as a benchmark for this analysis. It is found that the QP curriculum in Malaysia focuses on the fundamental principle of understanding the quantum energy of light and its interaction with matter. However, it is also found that there are specific NOS aspects that can be highlighted to help students develop their scientific literacy. These might include emphasizing the philosophy of complementarity in explaining the wave-particle duality principle, the ultraviolet catastrophe, and the contradiction of classical physics interpretation with QP. It is suggested that the QP curriculum be improved by including these and other relevant examples to be on par with other countries. Overall, this analysis provides insight into the relevance and content of QP in Malaysian secondary schools. The proposed changes may help improve students' learning experience and provide a more comprehensive understanding of the NOS.