

Nature of Science: A Comparative Analysis of the High School Physics Textbooks in Indonesia and Korea

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Abstract

Over the past two decades, the goal of supporting students and teachers in developing views on the Nature of Science (NoS) has been increasingly central to the vision and discourse goals for global physics education reform. Understanding the Nos is a critical and essential component of scientific literacy. The main objective of this study is to present a comprehensive picture of the NoS in physics textbooks in Indonesia and South Korea. This research is a descriptive study, and the data source consisted of 10 high school physics textbooks (five textbooks from each country). The textbooks were chosen based on the results of a Google Forms survey about the most common use of physics textbooks in schools. The results show that the total number of NoS elements presented in Indonesian physics textbooks is 71, of which 47 are on the cognitive-epistemic aspect, and 24 relate to the social-institutional aspect. In contrast, the number of NoS items presented in Korean physics textbooks is 84, with 54 on the cognitive-epistemic aspect and 30 on the social-institutional aspect. This study also revealed that 59% of the NoS in Indonesian physics textbooks were located in the main text, 35% were found in secondary texts, while 6% were presented in both. Similarly, 48% of NoS items in Korean physics textbooks were located in the main text, 44% in secondary texts, and 8% were presented together. Therefore, this study concludes that Korean high school physics textbooks contain more NoS than Indonesian high school physics textbooks.

<https://doi.org/10.26803/ijlter.22.10.7>

Keywords

Nature of science; Indonesian physics textbooks; Korean physics textbooks