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Whatever happened to STS (Science, Technology and Society)? Pre-service physics teachers and the history of quantum mechanics.

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Summary: If issues in the history and philosophy of science and those related to science, technology and society are generally accepted in policy, how ought these be handled in practice? Mandate in policy does not guarantee implementation in practice. Indeed, HPS and STS have for decades been marginalized in the curriculum. Subject areas designated to teach components of HPS and STS, such as design and technology, social studies and science, seem preoccupied with other aspects of the curriculum and rarely get around to HPS and STS. This study aimed at eliciting pre-service physics teachers' perspectives on using HPS to address quantum mechanics and scientific literacy. Through questionnaires, observation of and participation in a physics methods class, 16 pre-service teachers were asked to identify topics they considered problematic to teach or learn. They were challenged to identify those topics that could effectively be taught or learned from HPS. The pre-service teachers agreed that HPS and STS were more appealing for teaching some topics, such as quantum mechanics, which is the focus of this article. This intervention in physics teacher education demonstrates the importance of using specific methods in physics instruction to demonstrate the value of HPS in scientific literacy.

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