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Development of a course on integrating ICT into inquiry-based science education

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Integration of ICT into Inquiry-Based Science Education (IBSE) is still very much under-used in many countries. This design research developed an ICT in IBSE course, which - with adaptations - was effective in teacher education in the Netherlands, Slovakia, and Vietnam. The ICT in IBSE was confined to use of tools for data logging with sensors, video measurement, and dynamical modelling (illustrations on the front cover) to support inquiry by pupils. The course participants made progress in stimulating pupils' inquiry; however, there was still room for improvement, particularly in getting pupils to think back and forth between the physical and theoretical worlds. This research also confirmed validity of pedagogical principles that guided the design, evaluation, and optimisation of the course and the extent to which it can be adjusted in different settings.

Trinh-Ba Tran

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Trần Bá Trình

Generating and validating knowledge

Theoretical world

Concepts, Relationships, Theories. Models



Physical world

Phenomena, Observations, Measurements, Experiments



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