

ADDRESSING SKILLS SHORTAGES IN MIDDLE SCHOOL PHYSICAL SCIENCE TEACHING

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A key challenge in early secondary science education is that many teachers responsible for teaching key physical science concepts, such as forces, motion and electricity have little formal training in Physics (Carpendale & Hume, 2020). This leads to lack of teacher confidence and a reluctance to undertake practical work (Abrahams & Millar, 2008). The Victorian Physics Teachers' Network is being supported by the Victorian Department of Education and Training Strategic Partnership Program to develop and present four intensive modules that cover the level 7 – 10 Victorian Physical Science curriculum content. Each module consists of six two-hour sessions. The four modules cover forces and motion, electricity, light and sound, and energy transfer and generation respectively. For each topic participants undertake a structured series of key practical activities that not only support the development of conceptual understanding in the given topic but are also directly transferable to the classroom. The first module, Forces and Motion, has been delivered in person to a group of sixteen teachers at a metropolitan school and will also be delivered face-to-face in rural and regional schools.

The six workshops are constructed around engaging activities that explored the nature of force, force pairs and force diagrams and the connection between overall or net force and changes in motion and shape. Common misconceptions and alternative conceptions were addressed in each session. We will report on our learnings from the delivery of this initial module and present a summary of participant responses to the module. We will outline how the experience has informed our development and delivery of the next three modules.

REFERENCES

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