



The Learning Outcomes Framework and the design of scientific investigation activities

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Abstract

In view of the recent education reform in Hong Kong, as well as international developments, the use of science standards or a learning objectives framework are advocated. In 2003, the Curriculum Development Institute (CDI) invited the author and her research team to undertake a project to develop a Learning Outcomes Framework (LOF) for Key Stages 1 to 4 (ages 6 to 17) that addresses student learning of scientific investigation skills. The introduction of a LOF is consistent with the international drive for science education standards which have already been implemented in many countries including the US, Australia and Canada. With reference to the requirement in the science education standards, teachers can design lessons and assessment tasks that address the competencies or learning outcomes. With the LOF now available in Hong Kong, teachers may consider using it as a reference to design and assess students' performance in scientific investigation tasks.

This paper introduces the principles underpinning the design of scientific investigation activities, taking into account ways to address the LOF. A two-phased model is proposed so that students may be better equipped before they engage in more open-ended projects for which teachers can make use of the LOF to assess their performance. The suggested model is illustrated with a set of investigation activities applicable to secondary one level. The paper concludes with suggestions for classroom implementation.