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The weSPOT project aims at propagating scientific inquiry as the approach for science learning and teaching in combination with today's curricula and teaching practices. The project focuses on inquiry-based learning with a theoretically sound and technology supported personal inquiry approach and it contains three main development aspects: (a) define a reference model for inquiry-based learning skills, (b) create a diagnostic instrument for measuring inquiry skills, and (c) implement a working environment that allows the easy linking of inquiry activities with school curricula and legacy systems. The current work outlines the pedagogical and diagnostic frameworks for scientific inquiry. The pedagogical framework is aimed at supporting informal, self-regulated learning settings as well as the embedding in a formal learning context. The scientific exploration process can take place independently, or in collaboration with others. The diagnostic framework focuses on the pedagogical diagnosis, which will be tailored to the ambitious aim of inferring students' inquiry and meta-cognitive skills as well as domain-specific knowledge from observational data tracked within the weSPOT environment. Pilot studies planned to be conducted in 16 test-beds across 6 EU countries will test the reference model and make use of the diagnostic instrument.

Keywords: Inquiry-based Learning, Mobile Technologies, Pedagogic Framework, Diagnostic Framework