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Can mobile devices facilitate more integrated and deeper learning?

Handheld devices, such as PDAs and mobile phones, have been heralded as the latest technology for facilitating learning. Their versatility and mobility mean people can use them in a diversity of settings, be they sitting in a classroom, eating in a café, walking around a museum, exploring a field site, or playing a game in the streets. In particular, they can be used to augment ongoing physical activities, such as exploring, discovering and measuring, providing multiple opportunities for the integration of ideas and observations. A key question, however, is whether and how students learn through this form of multi-switching; how effective is it to be constantly moving between different perspectives, representations and activities?

In my talk I will describe a project, where we designed and tested a mobile learning application called LillyPad, intended to facilitate the practice of more integrated scientific inquiry. Using a customized form of interaction analysis, I show how it was used by teams of students to access information, data and graphical representations, that enabled them collaboratively to generate and work through a number of inquiry processes, accounting for and explaining observed phenomena – both physical and digital. Analyses of the ongoing intertwined team talk, use of the mobile device and physical measuring activities show considerable evidence of analysis and synthesis taking place in situ. I discuss how this is possible in terms of the central role external representations play – accessed via the mobile learning tool – in mediating the flow of physical, digital and communicative interactions.