

Seamless Learning: Using Location-Aware Technology to Support Art Education


Mike Sharples, The Open University

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Schools and universities teach fundamental principles, universal facts, and generalized skills. But some fields also require students to gain knowledge that's bound to locations or artifacts. Becoming an expert in, for example, geology, medicine, civil engineering, art, or history requires linking situated and generalized knowledge. In this way, general principles are applied in various specific settings, while localized practices, such as recognizing specific disease symptoms or appreciating art, form abstract knowledge.

Seamless learning is a new concept proposing that previously distinct learning experiences (inside and outside classrooms; on and off campus) should be linked to appear continuous.¹ Personal location-aware technologies, such as mobile devices, can assist this flow by allowing students to collect learning experiences at home, outdoors, and in enriched locations such as museums or field trips, and then examine these experiences in the classroom.²

In a 2014 *IEEE Transactions on Learning Technology* article, Yael Kali and her colleagues at the University of Haifa described their two-year study in which location-aware technology supported art history students' learning in three locations.³ In the classroom, instructors demonstrated relevant art-appreciation skills using paintings from the course website. The students then visited an art gallery equipped with a Tumblr mobile phone app as well as a custom app that detected the students' locations and offered a short multimedia presentation about the artwork. While in the gallery, student teams, which could still access the course website, used the Tumblr app to document their ideas. They continued this collaborative activity at home through a shared Google document. Lastly, the students submitted their group assignments to the instructor for feedback. Kali and colleagues reviewed student assignments, observed lessons within classrooms, interviewed instructors and students, and administered a student questionnaire.

In using a design-research approach to developing and evaluating technology-enhanced learning, Kali and her team had dual objectives: to improve the learning system's design and to observe how the learning was enacted in practice. As the activity progressed from the classroom to the museum to the students' homes, the instructor's contributions decreased, supporting both independent and collaborative learning. Data analyses showed that the course website was key to connecting the students' learning across locations. However, the students perceived the app and museum guide as having low usability. Future work should focus on developing location-aware mobile applications that enhance learning and enable smooth activity transitions across the various settings. 

REFERENCES

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MIKE SHARPLES is a professor of educational technology at The Open University. Contact him at mike.sharples@open.ac.uk.