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Location-based language learning for migrants in a smart city

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Accepted Extended Abstract

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Title: Location-based language learning for migrants in a smart city
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Abstract:

The SALSA (Sensors and Apps for Languages in Smart Areas) project, a winner of the Open University's MK:Smart Open Challenge awards, is investigating how a smart city infrastructure can enable the provision of highly accurate, location-based learning activities for language learners, particularly recent migrants who have a real need to learn the language of their new home.

Second language acquisition is perceived by adult migrants themselves, as well as host governments, "as a crucial factor for socio-economic and cultural integration" [1]. The city is a rich environment for language

learning, providing opportunities for learning through observation, conversation, and social interaction during daily activities [2].

Providing learning activities accessed on smartphones, mobile ICT devices that are owned by and familiar to many migrants, enables the city to become an educational environment for an audience who may struggle to attend classroom based language courses at fixed times and places due to family and work related constraints[1]. Learning activities provided on smartphones enable personalised and flexible educational approach for a heterogenous group of learners, with differing needs and abilities [3]. Language learning educators identify that location-based and context-sensitive resources and activities are a powerful resource for learners [4]; and the mobility of smartphones makes them a particularly suitable platform for this mode of learning.

SALSA (http://www.open.ac.uk/blogs/salsa/) is exploring the use of Bluetooth beacons placed around the city to trigger location-based learning resources in an app on learners' smartphones. Once a learner has downloaded the app to their smartphone, they will be notified when they are near to a beacon and offered the opportunity to engage with a context-relevant learning activity stored in the app. Beacons are a low cost technology suitable for large scale deployment, transmitting a simple identifier that is interpreted by a smartphone app to trigger a predefined action, such as presenting the user with sample phrases suitable for the context, a listening exercise, or prompts for reflection.

No network connection is required to engage with the learning activities, which enables the system to work indoors as well as outside, and at no network cost (a key consideration for low-income and internationally transient users). Beacons enable highly accurate identification of relative smartphone location, allowing for a density of different resources to be triggered in the same area, hence have been employed in scenarios such as providing information about exhibits in galleries, and guiding visually impaired customers through the London Underground (http://www.bbc.com/news/health-31754365). As a wireless technology they enable a discrete engagement with learning activities for situations where they may choose not to explicitly engage with a trigger such as a QR code printed on a poster: the user is prompted by a notification to their smartphone similar to an SMS, with an onscreen message and optional phone vibration.

Because a beacon only broadcasts an identifier which is then interpreted by the app on the user's phone, no data about who is receiving the signal and acting upon it is collected by default. This offers users an anonymous interaction, which may be valued by groups of users such as recent migrants who can be sensitive to perceived privacy issues. As part of the SALSA project we are exploring users' perceptions of the privacy aspects of location-triggered technologies; investigating how we might both ensure user privacy, yet also consider potential methods of collecting usage data to improve user experience (e.g. by personalizing learning resources based on their previous activities) and optimisation of service provision (placing of beacons, revision of learning activities to reflect users' needs).

SALSA is a small scale pilot project currently in progress in Milton Keynes, and will report on theoretical work ,and initial findings from the field trials that are about to commence in Spring 2015. The trials will gather attitudinal, usability and learning-effectiveness data from a range of current adult English language learners who live or work in the town, and aim to inform educators, city planners, and policy makers about the benefits and challenges of implementing location-based language learning service utilizing smart city infrastructures.

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