ICT in School Geography – More than motivation

Aspects of *geographical thinking* and *simultaneity* emerging from recent GA curriculum development projects using webcams and GIS viewers on the internet

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This discussion paper presents preliminary findings and ideas from ongoing research into curriculum development in ICT to support geographical learning. It draws on the findings of the GA curriculum development projects (Mitchell 2006) *a geography department website* (2004-5) *spatially speaking* (2005 - ongoing) and *webcams* (2006- 2007). It also draws on the link between the *spatially speaking* project to develop GIS in school geography and an initial teacher education course (geography PGCE at the IOE, University of London.) These findings suggest that the motivation factor, commonly the chief justification for using ICT use in the classroom, is important, as the OFSTED report on ICT in geography (2004) shows and on which many teachers focus in evaluating their ICT use. However it also raises the suggestion that some aspects of ICT, in particular the use of internet based images and live webcams could be important in a grasp of connection between other people and places. Such ICT resources could, therefore be used as tools to experience and understand the concept of *simultaneity* (Massey 2007) and so be important in strengthening geography's unique contribution to the curriculum.

Data for this research comes from

- semi-structured interviews with participants of the webcams project
- a GA, CPD-led curriculum development project involving three schools
- the written assignments of a sample of beginning teachers at the IOE, tasked to evaluate their innovative development of a GIS activity in school
- observations of the project leader of the GA projects: *webcams*, *a department website* and *spatially speaking*

In each of the three CPD-led GA curriculum development ICT projects (*a department website, spatially speaking* and *webcams*) the internet has repeatedly emerged as a pivotal resource. This was not the intention at the outset of these projects. *A department website* was initially concerned primarily with school intranets, as opposed to the open internet, *spatially speaking* was concerned with using software and data gathered from a range of sources other than from the internet, and *webcams* was concerned with the use of local school webcams as well as those on the internet. However many of the teachers taking part in these projects found that the most effective, uncomplicated tools to succeed in their respective goals, were internet based. There is little doubt that internet-centred approaches are the favoured means of ICT development by many geography teachers for a variety of purposes. This conclusion is also suggested through the experience of Geography PGCE tutors at the IOE running an assignment in which beginning

teachers must develop GIS in their teaching and evaluate its impact on learning. Internet-based map viewers such as Google Earth were more popular and successful than the use of downloadable software on offer.

Familiarity with the internet has become such that 'to Google' has become almost synonymous with 'to learn' in the popular imagination (Lidstone and Stoltman, 2006). The speed, simplicity and familiarity of the internet for accessing information, certainly explains much of its attraction as a teaching and learning tool. However the 'live' aspect of the internet is also appealing. Observation of any school in the more developed world shows that most young people want to be connected with other people and places at all times, communicating through text messaging, email and internet chat rooms. This has been noted by geography educators such as Robertson & Fluck (2004). The 'connectedness' of people and places and its important role in thinking geographically has been discussed by Jackson (2006) and the importance of spatial thinking as a focus to the use of ICT (especially GIS) for geography has been identified by Lidstone and Stoltman (2006).

The webcams project raised an interesting finding relating to this 'connectedness'. In a semi-structured interview, one teacher in the webcams project described his experiences with a group of year 8 pupils. They were asked to list their favourite webcams and to describe what they liked. Most favoured those webcams featuring people in a distant place. The attraction was of being able to 'spy' on those people, watching their movements and behaviour in the backdrop of that place, such as the crowds in Times Square, New York City. The teacher, observing the fascination of some pupils and discussing this with them, described what he called an 'Amelie moment' (referring to the film of that name). He went on to explain that he believed his pupils, by watching these people in a distant place, experienced a sense of 'I'm not alone'. He described the pupils' experience as a realisation that others were living their lives at that moment, and that space and time were being re-imagined by pupils through the use of the webcam.

Massey (2006) discusses a re-imagining of time and space and its range of potential social and political impacts. The concept of *simultaneity*, which she discusses, is perhaps represented in the pupil's minds by the 'Amelie moment'. Massey talks of a dynamic simultaneity, rather than a static contemporaneity in our thinking of space. At the heart of this is a sense of connection between different places and people in both space, and time. The webcam for this purpose is perhaps a powerful tool to be developed for geographical learning. However, questions arise over the possible simplification of place histories and the development of place, people and culture through the use. It could be that pupils seeing the world with the immediacy of a webcam, jumping from one place to another, seeing those places in real time are learning to think of an instantaneous world, a two dimensional, horizontal world without the depth of a

complex history of development over time, as Massey (2006) discusses. This threat is an interesting area for possible further research through the webcams project group.

The webcams project also produced a number of practical uses of webcams to bring a more temporal element to classroom geography, which is important for a deep understanding of process. An example is understanding the process of a frontal weather system. Live webcams were used in conjunction with websites such as the met office. The met office numerous online map viewers such as weather charts, rainfall radar and satellite images can be used with webcams allowing pupils to check actual weather with the 'theory' provided by the weather map. This is one of several examples of 'virtual fieldwork' proposed by the group. One teacher made available an interactive map resource for UK weather as well as a global webcams map with live webcam links on their department website (Mothersole, 2007). This could bring a sense of reality, immediacy and, through virtual fieldwork which puts theory to the test, a rigour to geographical learning. Another practical example developed by another in the group is the 'webcam wall' (Cassidy 2007) in which several webcams from around the world are projected side by side on the interactive whiteboard, allowing pupils to see many different places and their people, simultaneously. Such a bombardment may increase the 'Amelie moment' and sense of *simultaneity* experienced amongst pupils, discussed earlier (above).

There is also a 'live' aspect to the use of GIS, although this may be more perception than reality. Internet map viewers are a hugely popular means of getting started with simple GIS, as shown by the number of beginning teachers opting for these tools, whilst assigned to develop GIS on their teaching practice. Using Google Earth, for example, pupils have asked the question 'is this live?' the implication being that some pupils assume that the images of the earth they can see whilst zooming in to 'spy' on people's houses at a large scale are seen at real time. It is not live, of course, although the data is likely to be more recent than many aerial photographs seen in textbooks or other traditional resources. Undoubtedly many pupils would like Google Earth to be live. This attraction is apparently not lost on Google's competitor, Microsoft, who, launching their own online aerial photography GIS viewer, chose the name 'local live'. Although again it is not live, in the sense of seeing a place in real time. Such viewers perhaps give the illusion of 'spying' on places in the moment, and in doing so may contribute to a sense of *simultaneity*. The words 'local' and 'live' also resonate with the Geographical Association's focus on 'living geography' curriculum development projects. (GA 2007) These aim to support young people's engagement with their local place and their connection to the wider world with an emphasis on process, the present and the future. The zooming and panning of Google Earth and the real time of webcams both sit comfortably with these aims.

Certainly, from the findings of a number of beginning teachers, the Google Earth type viewers contribute to many pupils' understanding of the inter connection of places, including to a sense of their place in the world. The most common activity of anyone using Google Earth for the first

time is to go straight to their own home, an activity which can be enlightening, upon discovery that the home area is actually more wooded, or crammed with houses, or near a factory than realised. From personal experience it led me to discover, after several years, a local park five minutes walk from my home. The contribution of Google Earth and similar viewers which create virtual worlds for pupils to explore, is an area in which further research could be valuable. The spatially speaking project network includes a psychologist conducting a pilot study of the impact of Google Earth on pupils' cognition, which could produce interesting findings.

The illusion of being live, which the internet can create, may have contributed to the success one member of the *webcams* group found. Whilst developing many links to live webcams links to support pupils' research, his classroom observation focused on the use of internet based panoramic viewers (Mothersole, 2007l, a). These viewers allow pupils to explore a very high definition image, using navigation tools to zoom and pan, over the internet. Motivation was certainly a key to the success of these with pupils and he described a 'wow' factor to using the technology. But he also described other benefits to using the ICT which supported the sense of place, questioning by pupils and grasp of physical process. He described a level of 'intimacy' and a 'texture' to the panoramas, and pupils 'being there' giving the example of a pupil experiencing a sensation of standing on a medial moraine. As pupils asked to see or navigated themselves to different parts of the panorama, he spoke of 'pennies dropping' as processes made more sense than 'flatter' pictures. Interestingly, he noted that some groups including several girls, who had tended to struggle with the grasp of physical process, particularly benefited. In this example the quality of image and navigation tools were perhaps more significant than the internet, but nonetheless the strong illusion of reality may have been supported by the use of the internet to transport pupils to another place.

There is certainly nothing wrong with using ICT tools purely to motivate pupils and enthuse teachers. Motivation has become a huge challenge in today's classrooms and the subject must compete with a widening field of attractive examination course options. The 'live' aspect of the internet is certainly motivational for pupils, but there is more to its use than that. There is the prospect of making geographical connections, thinking geographically and perhaps to experience *simultaneity*.

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