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ROLE OF ICT IN GEOGRAPHICAL STUDIES

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ABSTRACT

ICT (Information Communication Technology) represent for people typically moves between two polarities: utopia and dystopia. Technology enthusiasts who believe that ICT will revolutionize every aspect of the world are challenged by those who perceive ICT as a source of cultural invasion. Somewhere in between are those who collect statistics about the geographical diffusion of ICT, with little emphasis on their interpretation.

Keywords: GIS, place, simulations and geographical enquiry skills,Information Communication and Technology

Brief history

The internet of today was born in 1973 when Vint Cerf developed the TCP/IP protocol. Not only could files be transferred quite simply but also information could be posted for public perusal leading to the emergence of email and news services. The introduction of computers as personal productivity devices first began to appear around 1977 with Apple, Tandy and Commodore computers. Although computers could be connected in networks for the purposes of transferring files although such operations remained complex and technically demanding. In 1989 Robert Cailliau (Gillies, J. & Cailliau, R., 2001) and Tim Berners-Lee at CERN in Switzerland put forward a proposal for the management of documents using computers. Management at CERN received the proposal as ‘ vague but exciting (Gillies, 2001, p. 181). Cailliau and Berners-Lee envisaged a service that could share files, documents, information, dialogue, graphics, sound files and more. They called this service the World Wide Web (WWW). Networking using the WWW continued frenetically until in 2001 the dot com crash rationalised the services that could be provided and consolidated the first round of the WWW for the provision of information

globally. Throughout this entire period, a computer and desktop software needed to be purchased and software installed. The software included an operating system, applications and utilities for checking viruses and the like. When computers were connected they then required additional software and network servers to communicate on the internet and use the WWW services. The initial stages of the WWW from 1990 to 2001 provided the capacity for an information service. Schools, training colleges and universities developed websites as part of the proliferation of information accessible globally. The websites were institutionally focussed and somewhat akin to reading manuals. This meant that access by users was limited to the provision of information only in text formats with little consideration for being user friendly or user focussed. This was described in predictions about the internet in 1999 called The Clue Train Manifesto (Levine et al, 2000) as a passive ' push' model of communication. The Cluetrain Manifesto predicted that users of the internet would become more actively involved in a networked ' pull' environment. Then beginning in 2001, other types of services began to appear on the WWW. These included Google, Wikipedia, MySpace, FaceBook, Digg, Technorati, Twitter, Spock and many more which provided their services remotely and freely. These services are known as Software as a Service (SaaS) applications and remove the need for common desktop productivity software of the kind Word, Excel, PowerPoint and the like. The WWW had moved towards becoming a read/write platform where users could engage with others, contribute and publish information in several formats including text, graphics, animation, audio and video. Tim O' Rielly (2005) popularised this new use of the WWW as Web 2.0, a term that became widely accepted although the term had been used several years previously. The term did not mean that the WWW underwent a technical change but instead became a platform where interactive communication was possible. In the ClueTrain Manifesto this was described s the ' pull' model of communication. The combined internet and the WWW has matured as a communications, productivity and social networking platform in its own right with no precedent in history. Professor Jim Bosco (2006) from Western Michigan University has traced the development of communication through history and highlights the development of human communications through verbal, written and now electronic communication. He concludes by suggesting that today we are in a period where verbal and written communication operate electronically, globally

and more personally than ever before and that has profound implications for education, business and research. Bosco (2006, p. 8) also states that the hegemony of formal education - school - as the educational agency for society - has ended because the available capacity for personalisation and individual contribution will be increasingly used by a diverse range of groups for education.

ICT AND GEOGRAPHY

The ICT usage and benefits for the geographic education are given below:

Benefits for teachers

● Using GIS can significantly enhance geography teaching and learning environments (Audet and Paris, 1997)

● Digital photography allows teachers to record pupils' work undertaken on field trips and other learning outcomes not readily recorded in traditional ways (Storey, 2002)

● ICT enables teachers to engage and motivate pupils about geographical concepts to a greater degree (Halocha, 2002; Taylor, 2003)

● Using GIS software to produce and manipulate maps at a range of scales can save lesson time and give better quality results (Taylor, 2003)

● The internet increases access to authentic geographical data and information sources (Taylor, 2003)

● GIS software can enable teachers to focus more closely on teaching geographical skills, in addition to developing a sense of location and place (Keiper, 1999)

Benefits for students

● Geographical Information Systems (GIS) simplify many geographical concepts and present large amounts of non-sequentially related data in simple and readily accessible formats, allowing pupils to concentrate on interpreting and analysing data (West, 1999)

● Using GIS software enhances spatial awareness and decision-making skills (Audet and Paris, 1997; Taylor, 2003; West, 1999)

● Using simulations and modelling tools can lead to enhanced understanding of geographical topics such as erosion and agriculture (Cox and Abbott, 2003)

● ICT enables higher level thinking skills, especially for pupils using GIS (West, 1999)

● Using digital photography in a classroom mapping activity helps develop recall, reflection and self assessment skills (Storey, 2002)

● Interactive ICT such as email enables the exploration of a sense of place, through communicating with people as well as through pictorial features (Storey, 2002)

● Using emails alongside postcards to make comparisons of places helps pupils to gain a better appreciation of other cultures (Storey, 2002)

In geography, ICT can help pupils to:

● enhance geographical knowledge and improve geographical enquiry skills

● develop graphical, statistical and spatial analysis skills

● develop mapping skills

● Experience alternative images of people, places and environments and how environments change

● simulate or model geographical systems and environments

● communicate with other pupils in contrasting localities by email, webcams and video conferencing

● improve the appearance of work by enhancing presentation

● increase awareness of the impact of ICT in the changing world.

Teachers can maximise the impact of using ICT in geography by:

● being clear as to how the use of ICT will support lesson objectives

● using ICT as a tool, not just as an information resource

● giving pupils greater autonomy in their geographical investigations

● incorporating the use of portable ICT equipment in teaching.

Key benefits of using ICT in geography:

● ICT can make geography more authentic and relevant

● ICT allows more time for observation, discussion and analysis

● Using ICT increases opportunities for communication and collaboration

CONCLUSIONS

The role of ICT in geographical research has influenced and the women researchers in the field have increased dramatically. In olden days, surveying instruments and the cartographic methods needed more physical strain. With the advent of ICT, the role of geo-informatics (GIS, GPS AND RS) has led more women participation in research. Thus ICT has indirectly led to women empowerment in geography.

Using information technologies and space and place are being conceptualized in a broad swath of recent writings and discourses on the geographies of ‘ cyberspace’ and information technologies. After analysing the powerful role of spatial and territorial metaphors in anchoring current discourses about information technologies and society the paper goes on to identify three broad, dominating perspectives. These label the perspective of ‘ substitution and transcendence’ (dominated by technological Utopianists), the ‘ co-evolution’ perspective (drawing from political economy and cultural studies) and the ‘ recombination’ perspective (derived from recent work in actor-network theory)(Kritchin 1998). The discussion turns to each in turn, extracting the geographical dimensions and implications of each perspective.

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