DIGITAL NA(T)IVES – DISCOURSES OF EXCLUSION IN AN INCLUSIVE SOCIETY

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Abstract

Today's young people have been labelled "Digital Natives" and presented as being more aware of the world, more connected to others, more in tune with the flood of available information on the internet, etc. However, based on the observation of university students taking part in undergraduate courses with eLearning components, this paper will argue, that the perception of young people as competent users of digital environments is not correct. The majority of students are not very sophisticated or knowledgeable in their use of information technologies, and show very little intention of learning anything but the most basic skills.

The paper will then question the view that the internet is creating a more inclusive society by pointing out that most ICT users today have been shown to be less than proficient in their use of available technological tools. Both 'young' and 'old' people have been shown to lack many of the most basic skills deemed necessary for the full utilisation of the possibilities the internet offers. The paper concludes by arguing for a revision of the concept of the 'inclusive society' which currently excludes more people than it includes.

Keywords

Digital Natives, inclusive society, hidden incompetencies, technological exclusion

1 THE DIGITAL NATIVES ARE COMING?

Over the past ten years, with increasingly easy and affordable access to ICTs, educational institutions around the world started to incorporate technological elements in classrooms to enhance the learning experience of students. The advent of the interactive communication and content-creation tools collectively referred to as "Web 2.0" accelerated the educational uptake of ICTs for teaching and learning purposes. Online visualisations, virtual interactive spaces, digital storage of information, collaborative research and writing, virtual worlds or simulations, etc. are in the process of becoming *de rigueur* for lecturers at universities as well as for teachers at secondary schools.

The rationale underlying the introduction of increasing numbers of technology-based features into education is the assumption that young people today have grown up surrounded by and immersed in technology and will learn better and faster, if education manages to leverage and connect with their technology-based life-style. The students who entered universities and secondary schools since the start of the new millennium have been labelled "digital natives" (or "Net Gen" or "Google Generation") and it has been argued by many educationalists that this new group of students need more media and IT driven learning environments than the "digital immigrants" of earlier student (and educator) generations (see e.g. [12]; or [15]).

"*We live in a world that is becoming more networked every day, and the Internet has grown into an essential medium for communication, socialization, and creative expression. Virtual worlds like Second Life represent the future of human interaction in a globally networked world, and students who have grown up with the Internet naturally swim in these waters. These "digital natives" eagerly embrace tools such as Instant Messaging, social networking spaces, and massively multiplayer online games.*" [17]

Marc Prensky, who is credited as the originator of the terms "digital immigrants" and "digital natives", has written extensively about what he sees as the characteristic feature of young people today (e.g. [8], [9], [10], [11]), i.e. their easy adoption of technology and the ubiquity of digital technology in young people's lives. His contention is that technology has transformed the way people live their lives and that (in education) young people today demand a fulfilment of their technological wishes – an engagement through digital media – as their due.

"*Rather than being empowered to choose what they want […] and to see what interests them […] and to create their own personalized identity […] – **as they are in the rest of their lives** – in school, they must eat what they are served. And what they are being served is, for the most part, stale, bland, and almost entirely stuff from the past. Yesterday's education for tomorrow's kids*." ([11]: p. 64 – my emphasis)

The challenge implicit (and often explicit) in Prensky's writings is that 'old' people who grew up before computers became ubiquitous are ill-equipped to deal with today's 'young' people, who are very different from preceding generations and have different needs and goals. As such, his argument – and that of many other educationalists – is based on two assumptions, the first being that 'old' people are mostly unable to adjust to the use of new technology, and the second that young people are so immersed in digital technology and media that they are unable to cope with educational methods failing to incorporate such elements into the classroom. The 'classic' lecture theatre or classroom with students sitting immobile while facing and listening to an authority figure at the front is presented as being too far removed from the actual life experiences of students to facilitate effective learning and should therefore be abandoned in favour of newer approaches making use of the same digital technologies surrounding the students in their own lives.

"*The new generation has incorporated the Internet into their daily life. […] 93% of college students have access to the Internet. […] Young people are highly active Internet users. For example, 60% go online to download music, 72% check email on a daily basis. 73% get information for school work, and 28% go online for instant messaging with their friends. Because of their high degree of Internet penetration and adoption the Internet is potentially an excellent medium for teaching and learning*." ([3])

The internet, in particular, is seen as a showcase for young people's creativity and expertise in using digital technology which remains largely ignored by 'older' people who are less internet-savvy and find it more difficult to deal with the flood of information or possibilities available (e.g. [8]; [9]). Young people are not only amusing themselves online by watching videos, or by chatting with their friends, but they are also creating content and working together to do so. Young people interact online to create blogs, websites, videos, etc. and thus demonstrate an array of skills that 'older' people have to acquire through dedicated study.

"*More than half of all online teens who go online create content for the internet. Among internet-using teens, 57% (or 50% of all teens, roughly 12 million youth) are what might be called Content Creators. They report having done one or more of the following content- creating activities: create a blog; create a personal webpage; create a webpage for school, a friend, or an organization; share original content they created themselves online; or remix content found online into a new creation*." ([4])

In some reports that have been published, young people are shown to be so used to technology, that it has faded into the background for them, as "*they don't think in terms of technology; they think in terms of the activity technology enables*" ([7]: p. 2.10). Their entire lives revolve around the use of technology and so it has changed from being a set of tools consciously used by "digital immigrants" to a way of life used subconsciously and routinely.

"*A junior at the university, Eric wakes up and peers at his PC to see how many instant messages (IMs) arrived while he slept. Several attempts to reach him are visible on the screen, along with various postings to the blog he's been following. After a quick trip to the shower, he pulls up an eclectic mix of news, weather, and sports on the home page he customized using Yahoo. He then logs on to his campus account. A reminder pops up indicating that there will be a quiz in sociology today; another reminder lets him know that a lab report needs to be e-mailed to his chemistry professor by midnight. After a few quick IMs with friends he pulls up a wiki to review progress a teammate has made on a project they're doing for their computer science class. He downloads yesterday's chemistry lecture to his laptop; he'll review it while he sits with a group of students in the student union working on other projects. After classes are over he has to go to the library because he can't find an online resource he needs for a project. He rarely goes to the library to check out books; usually he uses Google or Wikipedia. Late that night as he's working on his term paper, he switches back and forth between the paper and the Internet-based multiplayer game he's trying to win*." ([7]: p. 2.1)

Connected to these descriptions of the lives of the "Net Gen" are claims made about the cognitive and intellectual consequences of the constant and simultaneous immersion into multiple audio-visual data and information streams. They are supposed to be "*able to intuitively use a variety of IT devices and navigate the Internet. […] they are comfortable using technology without an instruction manual […] more visually literate than previous generations […] able to weave together images, text, and sound in a natural way*." ([7]: p. 2.5)

"*Net Geners have become some of the most technologically adept members of society. Our cell phones often serve as Web browsers, digital phones, and game consoles. We keep our schedules and addresses in Palm Pilots and our music in MP3 players. We program our televisions to record movies while we watch a game on another channel. We strive to stay ahead of the technology curve in ways that often exhaust older generations. […] We are a generation of learners by exploration [, …] many of my peers rarely pick up the instruction pack to learn programming or a technique. Instead, spurred by our youthful exploration of the Internet, we tend to learn things ourselves, to experiment with new technology until we get it right, and to build by touch rather than tutorial*." ([16]; see also [13])

The existence of the "Net Geners", or "Google Generation", or "digital natives" seems to be beyond doubt, and anyone working with young people between 15 and 25 can easily assemble a working definition of this group that includes an increased use of technological gadgets, e.g. mobile phone, PDA, Playstation, Wii, etc., a reliance on the internet for information and as a communications platform, a tendency to network with a large number of people one never meets in person, familiarity with MySpace, Facebook, YouTube, Flickr, blogging services, social networking sites, etc. Even this paper does not intend to question the increased use of technology by large numbers of 'young' people. Based on my experiences teaching at university level for over 10 years, students have certainly changed and their lives and studies include far more networked technology than those of students during the 1990s.

This paper wants to argue instead that the increase in availability and usability of technology has not led to a greater *proficiency* in the use of technology as some of the quotes above assume. The existence of technology does not automatically lead to a proficiency of its users in this new technology – even if the users grow up with this new technology – otherwise we would all be perfect drivers by now. The almost general assumption that proficiency is acquired by *osmosis* instead of through a dedicated learning process is instead helping to hide a growing and worrying lack of even basic competencies in the use of computers or other networked technologies. Ultimately this lack of concern over the acquisition of even basic computing skills is leading not to a more inclusive, but a more exclusive society, in which the technologically skilled lead the unskilled masses.

While the papers quoted above relied mostly on 'generally known', or 'universally observable' phenomena or on self-observation and evaluation, studies that focussed specifically on the level of competence in computer users among the "Net Geners" have usually come to the conclusion that the "digital generation" is often anything but.

"*Our quantitative data show that, in general, students say they have the skills they need. The qualitative data suggest a slightly different picture. Students have very basic office suite skills as well as e-mail and basic Web surfing skills. Moving beyond basic activities is problematic. It appears that they do not recognize the enhanced functionality of the applications they own and use. The comparative literature on student IT skill self-assessment suggests that students overrate their skills; freshmen overrate their skills more than seniors, and men overrate their skills more than women*." ([2]: p. 7.7)

Students today *think* they know a lot about the internet, about technology, etc. while direct studies or tests of that ability show they do not. In fact, many educators who planned to rely on the use of technology in their own classes, as e.g. myself, found that their students skill levels were not sufficient to conduct university level studies, and that they had to teach the necessary basic skills in addition to their subject matter.

"*We expected students to already possess good IT skills in support of learning. What we found was that many necessary skills had to be learned at the college or university and that the motivation for doing so was very much tied to the requirements of the curriculum. Similarly, the students in our survey had not gained the necessary skills to use technology in support of academic work outside the classroom. We found a significant need for further training in the use of information technology in support of learning and problem-solving skills*." ([2]: p. 7.17)

Rowlands and Fieldhouse who conducted a study of the internet skills of the "Google Generation" on behalf of the British Library came to the conclusion that there was little evidence to suggest any increase in the level of technological skills of young users ([14]: p. 18-20). They pointed out that there was a lot of hype about the assumed increase in skills, but that almost no research had been done to back up the claims made about young people. They summarised their findings, by concluding that

"*research into how children and young people become competent in using the internet and other research tools is patchy but some consistent themes are beginning to emerge: […]* ***information literacy of young people, has not improved*** *with the widening access to technology […;] internet research shows that the speed of young people's web searching means that* ***little time is spent in evaluating information****, either for relevance, accuracy or authority […;]* ***young people have a poor understanding of their information needs*** *and thus find it difficult to develop effective search strategies […],* ***young people find it difficult to assess the relevance of the materials*** *presented and often print off pages with no more than a perfunctory glance at them […;]* ***young people have unsophisticated mental maps of what the internet is****, often failing to appreciate that it is a collection of networked resources from different providers*". ([14]: p. 12 – my emphasis)

As I will show in the next part of this paper, there are clearly identifiable problems today's students have when using technology. These problems mostly stem from a lack of education about basic technological skills previous 'generations' of students acquired when they 'immigrated' into the 'digital age'. The 'data' for the next part of this paper was gathered during the teaching of several undergraduate courses using the online 3D world "Second Life" for tutorials and requiring students to give Powerpoint-supported presentations as well as to submit course assignments as Microsoft Word documents via email. My own background as a teenager of the 1980s when 'Hackers' were heroes, computers had to be mastered, networking started, acquiring programming skills was on a par with learning a new language, etc. and the fact that the internet is my research area, means that my own computing skills are more extensive and deeper than those of all but a very small number of my students – and I do spend more time online than all of them. I have taught Microsoft Excel and Access, as well as Java Programming, and worked on my first computer program when I was 13 years old. Who then *really* belongs to the "digital generation" and can be called a "digital native"; and what does this mean in the context of discourses on the "inclusive society"?

2 BABES IN THE WOOD

For the purposes of this paper, I will base my remarks solely on two undergraduate courses run twice each during the academic years 2007/2008 and 2008/2009 at the Hong Kong Polytechnic University, one on Urban Popular Culture and one an introductory course in Media Studies with about 300 students in total. The 3D online world "Second Life" was used for student tutorials, the setting of tasks and graded assignments, and as an optional space for student presentations (as opposed to 'real-life' presentations using Powerpoint). Second Life was used to undertake field trips to cities, media organisations, corporations, etc. in Second Life, as well as for the students to interact with people outside of Hong Kong on media-related assigned tasks.

The classes were generally successful and the students provided mostly positive feedback about the intensive use of a virtual environment to support the 'real-life' teaching during the lectures. Student comments suggested that the examples for lecture topics available in the simulated world made a number of the theories covered in the lectures more accessible. Some students additionally reported that they had profited from their interactions with non-Hong Kong based people within Second Life as they themselves had never left Hong Kong nor met anyone from elsewhere.

Despite the success of the classes, though, the heavy reliance on technological skills for the conduct of tutorials and the grading of students brought to light a number of issues students had with the use of computers. Some of the students had to be taught even basic computing skills, while almost all of the students struggled with the computing demands of the courses at least initially, despite extensive help from both myself, as well as from several technical assistants.

Students were *not* able to acquire the necessary skills by themselves. They were in most cases neither willing nor able to become proficient in their use of standard software packages. Many of the students had rarely used a computer outside a classroom before, and some students did not own a computer – even after a year or two at university, but relied instead on the student-accessible computer labs for their IT needs. As a result, many students found the courses far more difficult than should have been the case, and successive iterations of the courses included increasing amounts of guidance on the use of computers, the internet, and technology in general to address the problems that emerged. For the sake of clarity, I have loosely grouped these problems under four separate headings, although there is some overlap between the categories.

2.1 Tech problems

During presentations, most of the students displayed at least some lack of knowledge about the technical issues in using a computer to give a presentation to a group of people. Students were given the choice of either using their own notebook computers for their presentation or to use the lecturer's computer. In both cases, I had to set up the computers for the students in over 90% of the cases, as students were unable to find the right connector to plug the projector's VGA cable into, and had to be asked whether or not they needed Audio for their presentation, in which case, I also had to plug their computer into the audio system in the class rooms.

Despite frequent reminders during lectures and tutorials before the start of the presentation sessions, none of the students followed my advice to download any internet files they needed before they gave their presentation. Almost a third of the presentations lost marks because their computer's wireless connection broke down during the presentation and prevented them from giving their presentation as planned.

Many presentations suffered from a mishandling of audio-visual files, both at the technical as well as at a software-control level. Students often brought files to the presentation without knowing the filetype or with which application the file could be opened. The System settings on their own computers were often inappropriate for presentations as well, as the system levels for Sounds, Brightness, Contrast, Video mirroring, etc. were often set up wrongly. During over 10% of the presentations, I had to intervene at some point to fix problems with System settings so as not to fail a group of students.

Despite the obvious problems of some of the presenting groups, though, other students who were present during these presentations did *not* learn from the mistakes of their fellow students or from the solutions I provided or the comments I gave at the end of each presentation session. During the presentation sessions throughout the two years discussed here, none of the groups presenting later learned from the mistakes of earlier groups, and I would have to point out the same problems each week. The students simply refused to learn the skills necessary even at this most basic technical level.

2.2 Software-Learning problems

In their use of software, most students displayed a lack of interest in learning anything beyond the skills they needed to complete their immediate tasks. Despite e.g. having to use Microsoft Word for all their university work over 90% of the students were unable to comply with stated requirements about font size, page margins, line and paragraph spacing, etc. None of the students showed any awareness of the need or the possibility to resize or position pictures of Second Life used in their Word documents to illustrate their points. Even handing out a sample assignment containing all the formatting requirements and the progressive simplification of the requirements did nothing to improve the results produced by the students.

Over a third of the students were not aware what the green or red lines under words or sentences in Microsoft Word meant, i.e. grammar and spelling mistakes, and in 5 cases students approached me to tell me that their version of Microsoft Word did not contain a spell checker and that they could therefore not be expected to correct their spelling mistakes. In none of these cases did it help to encourage the student to peruse the Microsoft help system, nor did the students learn from a direct demonstration – instead they seemed to expect the lecturer to repeat his assistance for each assignment.

Although students were aware that I was online more often than they were and despite all warnings they were given, both verbally and in writing, about 5% of the students attempted to plagiarise in written assignments. While this should not be a "software-learning" problem, the ineptitude of the students involved meant that their attempts at plagiarism were given away by their refusal to learn more about the software they were using. Students attempted to plagiarise by copying-and-pasting text from web pages into their assignments. They were not aware enough of the way Microsoft Word copies such text, though, and in 80% of the plagiarism cases a hovering over the text with the mouse showed hyperlinks to other web pages that had been copied and pasted into the Word document by the unsuspecting student – who then always expressed surprise that I had caught him/her. In about half the cases, the plagiarism was even more obvious as the student had not been able to adjust the font or the font size (or in two cases the colour) of the copied text, which made the plagiarism visible at first glance.

More worrying than this serious lack of basic knowledge about Microsoft Word, though, was the repeatedly demonstrated unwillingness to learn any of the skills that they were so obviously missing. Students were given detailed handouts on how to produce their graded output, and almost 10% of the students requested and were provided with additional one-on-one tuition in my office, but there was little to no improvement in the computer skill levels of students during the course of an academic term. Students would e.g. be taught how to download video clips from YouTube, but be unable to use this skill a week later. Students were e.g. given handouts and told that Second Life avatars could only be moved using the keyboard, but in every tutorial I would find at least one or two students who were simply clicking their mouse at the screen and complaining about the lack of movement of their avatar. As the delivery of proper tutorials depended on the acquiring of at least some Second Life skills by all students, this caused me to repeatedly question the need and the value of using computers for tutorials. The tutorials and lectures were designed to support and complement each other, and the lack of sufficient computing skills among a majority of students and the unwillingness to learn such skills displayed by over a third of them made this very difficult and required the introduction of increasing numbers of small graded tasks and assignments designed not only to demonstrate lecture contents, but also to facilitate student learning of ICT skills.

2.3 Data-Usage problems

A third area of problems that emerged in particular during the Introduction to Media Studies course, were data usage problems. Students were often completely unaware of the public nature of most of the internet and of the damage they could do to themselves or to others through some of their online postings – and this despite a huge scandal involving several Hong Kong movie stars and singers in early 2008 during which a lot of their private photos and videos depicting sexual intercourse ended up on the internet and the offline media.

None of the students had read the user agreements for Facebook or Flickr giving these sites the full commercial rights to anything posted to their sites by users, although almost all of the students indicated having user accounts at one, or the other, or at both of these sites. When presented with evidence that a photo posted on Flickr had ended up as an advertisement for Virgin Mobile in Australia most of the students reacted with shocked disbelief. In discussions about public and private spheres and the internet, not one of the students knew anything about recent international developments better to control internet traffic, or about the right (and increasingly duty) of employers and universities/schools to check all contents transmitted or received on their networks. Except for two students in 2007/2008 students did not know that employers could easily google for information about potential or current employees and base their hiring or promotion decisions on the results of their search.

Despite a case in late 2007 involving the videoing of a lecturer at the university and the subsequent posting of the video clip to an online video-sharing site and the consequences this had for both the lecturer and the student involved, students on the Media Studies course insisted that the internet was only 'fun' and they were simply 'playing' online, and that as a result nothing on the internet would or should have consequences in 'real' life.

Again, it is less the ignorance of the students that is worrying, but rather their naivety in assuming that they do not even need such knowledge, or that it does not apply to them. More than two-thirds of all the students stated that they had at least one blog on which they posted their thoughts, photos, wild ideas, jokes, etc. Given the majority of students' wilful ignorance of their own lack of privacy online, this creates a huge potential for abuse and raises the question whether these students are really "digital natives" at home in the "digital forest" or just innocent 'babes lost in the wood' of technology. The evidence of the courses I have run during the past two years suggests the latter – especially while there are still many highly skilled predators in those woods.

2.4 Critical Awareness problems

A final area of problems I want to mention here that goes beyond the immediate use of the internet, is the lack of critical awareness in the vast majority of the students of the "Google Generation". Almost none of the students demonstrated the ability to maintain a critical distance to media sources, and therefore they were unable to evaluate sources and misused them frequently.

Over 80% of the students in my courses based their assignments and presentations on three sources or less, usually the top hits produced by their Google searches on the topic. The unsuitability of the source materials was often ignored, and the information provided by them treated as unbiased, objective statements. Except for a very few students, they treated the information provided by academic articles, research reports, political manifestoes, advertising statements, etc. as sources of equal reliability, and except for two student papers never questioned their statements. In one case of Plagiarism, a student had copied large parts of an essay dealing with immigration issues from the website of a nationalistic political party in the USA, including their inappropriate terminology and partly racist arguments.

The majority of students was unable to judge the suitability of their own language in assignments or during Second Life tasks, as well, and more than 10% of the students had difficulties finishing some of the tasks in the virtual environment, as they were seen as extremely rude by other users of the virtual environment who subsequently refused to interact with them. This lack of awareness of themselves, their own beliefs, and their surroundings also caused problems for students during presentations, as e.g. about 10 % of students praised the level of gender equality in Hong Kong stating that men and women had achieved equal status in Hong Kong as women could now get their Filipina maids to do all the housework. Similarly, during two separate presentations on the integration of immigrants into Hong Kong, I was told about a "man from India" who was able to "sing like a Hong Konger" and who "speaks fluent Cantonese" – facts that surprised many of the students. On closer inspection it emerged, though, that the family of this "man from India" had come to Hong Kong over a hundred years ago, and that he himself had been born and raised in Hong Kong, and that Cantonese was his first language. I had to stop four more presentations early because of highly inappropriate statements made by the presenters (two because of racism, and one each because of sexism and political propaganda) – all based on an inept use of improper source materials.

The lack of awareness students displayed towards their own presentations and assignments extended to those of others as well. During the first round of presentations, I had included a small element of mutual grading into the presentations to encourage students to listen to and learn from each other and to improve their critical skills. This turned out to be a complete failure, though. In all the cases, students were either unable to make any statements about the quality of the presentation, or used inappropriate language unjustly to attack the presenters. The evaluation of presentations seemed purely based on personal likes and dislikes, rather than on the actual presentation observed.

In addition to this lack of judgment displayed by students, they also continuously displayed a lack of awareness, and even of curiosity about websites, software tools, news, etc. unless 'everyone' they knew used them. Of the 300 students I introduced to the 3D online world Second Life, only one had had an account with Second Life before attending the course, only 5 had ever heard of Second Life. On feedback forms, almost 10% of the students stated that they thought Second Life could never succeed in Hong Kong, because "nobody in Hong Kong uses it", i.e. it was not fashionable enough to be attractive to them or their friends – this despite their own admission that many of them regularly played the similar computer game "The Sims", most of them had at least one blog, and a Facebook profile, and a significant number were actively posting photos and videos on Flickr and YouTube. Even those students who were more active online restricted their activities to well-known sites and refrained from further exploration. Within Second Life, over 90% of the students stated that they only used Second Life to fulfil the requirements of the course and did not explore the virtual environment further, even though a majority expressed fascination with the possibilities and the size of the virtual world. For the purposes of the course this meant that instead of acting as an additional motivator for students, I had to design tasks to motivate students to use Second Life in addition to my routine course preparation.

In general, my experiences with the digital 'literacy' of students belonging to the "Google Generation" suggest that their attitudes and skill levels ill-equip them for their lives as "digital natives". In stark contrast to previous generations of students, the "digital natives" do *not* seem to be interested in the acquisition and retention of knowledge, instead most students access streams of information only to collate and re-arrange the data-flow in order to package it as educational output, e.g. assignments, Powerpoint presentations, etc. The individual user, though, has become interchangeable and has almost no input into the end product, nor does he/she retain much of a memory of the end product once it has been submitted or presented.

Instead of combining and contrasting a range of information sources, in order to arrive at their own position, the information that is the easiest to access is used to produce an output. This often leads to single-sourced, or sequentially multi-sourced educational output across a whole group of students and an inability to deal with mutually contradictory source materials. The students of the "digital generation" are fast losing the ability to evaluate sources, to form, express, and defend their own opinions appropriately, and to judge other people's opinions and arguments.

The lack of skills and their inability and unwillingness to acquire necessary skills is masked by an increased use of ever more powerful, but also ever more easy to use tools that allow students to produce acceptable results with a minimum of effort or expertise. The consequences of this growing reliance on barely understood tools provided by expert others are not the growth of an all-inclusive, networked society, but rather of an ever more *exclusive* society controlled by experts who lead those babes who can afford it through the woods of the digital network that is becoming less and less familiar to the "Net Generation".

3 EXCLUSIVE SOCIETY

Ironically, both sides in the debates around the abilities of the "digital generation" are less concerned with the creation or emergence of an 'inclusive society', and focus more on discourses of exclusivity. While the advocates of the high levels of technical skills among the "digital generation" emphasise the exclusion of 'older' people from crucial new developments in society, critics of the notion – me included – talk more about the (self-) exclusion of 'young' people from an increasingly digital society through their lack of knowledge and skills.

Both sides of this discussion insist that a certain level of technological skills and knowledge are necessary to become a part of today's society, and both sides agree that large segments of the population do not possess these skills. While their views of who is part of society and who is excluded differs, both sides seem to think that the knowledge and skills gap of large parts of the population is unbridgeable and will have to be accepted.

'Older' people are supposedly no longer able to acquire the technological skills necessary in today's world, and lecturers and teachers are almost expected to have problems setting up a projector or a Powerpoint presentation. 'Younger' people, however, seem to use technology as a natural part of their lives, while not being interested in actually mastering the tools they are using, and which are made available to them by multi-national corporations for whom the creation and provision of such tools is a for-profit operation, e.g. Microsoft's .Net and Hotmail services, Yahoo's webportal and Email services, Google's Search Engine, Documents, Calendar, Email, etc. (see e.g. [5] and [6] for a discussion of the implications of a reliance on such "benevolent dictators").

The available data from both sides suggests very strongly that there are serious problems with current approaches to an inclusive society based on the amount of usage of computer networks. According to this data, the vast majority of people are unable to employ currently available technologies in an appropriate manner. Additionally, they are also presented as unwilling and/or unable to acquire the skills and the knowledge necessary for the situation to improve, which means that educational programmes will be unable to easily 'fix' the situation. Instead of there being two distinct groups of people, the "digital immigrants" and the "digital natives" – or the "more experienced" and the "naïve youngsters", though, it seems more appropriate to talk about different levels of technological expertise combined with specific attitudes towards technology (and a measure of one's disposable income and spare time) that determine how 'included' an individual is in today's 'inclusive society'.

Taking such a scale of levels into account, the 'inclusive society' the internet seemed to promise during the past 20 years, is beginning to look more and more like an 'exclusive club' with similar rankings and insignia as e.g. the Freemasons – see e.g. the different certifications available from the European Computer Driving Licence Foundation (http://www.ecdl.org/products/index.jsp). Within this exclusive club, knowledge, skills, and access determine one's rank and level of inclusion, and an unmarried, (former) Hacker in his 40s with a lot of spare time and a good salary, living in a large city in the USA with fast broadband access will always be 'more included' than a secondary teacher in his 50s, married with two children, living in a rural area of northern England who has to surf the internet on an old computer over a dial-up connection (or even all the people who have never used a computer before).

Maybe it would be helpful to re-evaluate current definitions of the 'inclusive society' and to re-think its aims and goals in order to come to a new perspective on how to achieve such an inclusive society with or without a reliance on technology to provide the impetus and the networking tools for people to become closer to each other. As this paper has shown, neither 'young' nor 'old' people can be assumed to have the necessary skills to be part of an inclusive, networked society. If a majority of the people living in a society fail to meet the criteria for inclusion, though, then who does this 'inclusive' society really include? Can a societal model that excludes far more people than it includes still be called an 'inclusive society'? Is an 'inclusive society' simply a society that collects the highest common denominators in technological skills, so as to include the largest possible number or people? Or, is an 'inclusive society' definable through the creation of a set of certifications of skill levels that determine the level of one's inclusion in society?

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