

From Socrates to Sugata Mitra: a Dialogue with Digital Natives

Part 1 - the arguments in favour of digital technology in education

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‘The unexamined life is not worth living’
Socrates

Digital technology is changing our world, including our classrooms, in radical ways. This article takes a critical look at the impact of the Internet on our classrooms, our brains and our lives. It asks questions that all teachers might ask- so we can better understand what is gained and what is lost as we become more and more connected.

Introduction

Our aim as English language educators is to meet our students’ needs: to do this we need to motivate them to become actively involved in the learning process. Socrates, we assume, motivated his learners by engaging them in dialogue, an early form of critical thinking. His equipment was minimal: language itself. His method, too, was simple: asking questions or ‘elicitation’, as we would call it in ELT. Today, we have at our disposal the most sophisticated and diverse range of digital devices, from interactive whiteboards to ipads and the humble mobile phone. In spite of these radical changes in the way people learn, the fundamental aims of education over the centuries remain the same: to help the students fulfil their aims in learning and in life.

This article explores the far-reaching changes which have taken place in our lives and our classrooms – and in our brains, according to some research – as a result of the digital revolution; the article encourages teachers to take nothing for granted, but to question, in the best Socratic manner, to get at the truth behind the hype and to ask what good comes of whatever pedagogic proposals are put forward by experts, colleagues, salespeople, researchers and educational authorities. We examine the generational change captured in the dichotomy *digital native/digital immigrant* and ask: is it true that ‘young people are natives of a digital world and so they think and learn differently from the past; teachers who are ‘digital immigrants’ are unable to relate to their students affinity with ICT’. Moreover, we examine research into the claim that ‘multi-media deepens comprehension and strengthens learning’.

I conclude by suggesting we reassess what good and effective teaching means in a digital age and how to combine what is important from the past with the tools of the present and future.

The digital revolution

Digital technology is as big as the wheel, as big as the invention of writing, the printed book or the industrial revolution. It is futile to pretend it hasn't happened. It is virtually (pardon the pun) impossible to ignore it or cut oneself off from it. No man or woman is an island in our globalised world; ask not for whom the smartphone rings – or beeps, pings or sings- it rings for you. Digital technology is everywhere and is changing the everyday texture of our lives but, like all true revolutions, the digital revolution is transforming our sense of the fundamental elements of existence: time and space, and who we are in time and space, in relation to others on this tiny global village with infinitive possibilities. For example, I can be in a room in Thessaloniki, attending a Spanish class, when at the same time I can be reading a fresh message from an acquaintance in Australia or South Africa. I can be talking to that same person thousands of miles away and switch to talking to someone else on the other side of the globe. A telephone call 40 years ago was bound in time and space; social interaction was singular rather than multiple- it was sequential rather than synchronous or simultaneous. And as I communicate across time and space, I can shape and reshape my identity at will, by including or excluding data or projecting those aspects of my 'self' or 'selves' that I wish others to see.

Digital technology has inevitably had a huge impact on virtually every field of human activity, including our own professional field of ELT and English language learning. The arrival of IT in the classroom has generated changes in the teaching paradigm and conflicting views amongst teachers. These views range from strong enthusiasm and commitment to scepticism and rejection. The practical implications of the controversy are, on one level, that teachers need to switch to completely connected classrooms or to integrate into our teaching various degrees of modern technology with more traditional approaches. At the end of the day, what matters is whether technology helps to make teaching and acquiring languages more efficient and effective. I don't think there's a one right answer to this question: there doesn't seem to be enough hard empirical research to decide the matter either way.

But in order to answer the question in a coherent way, we have to begin by answering another, more fundamental question: what is effective teaching? We need a theory or a set of principles which define or at least outline what we are doing when we teach well in a second language: we can see second language acquisition (SLA) as a cognitive process or an affective process or both: a cognitive-affective process, involving the whole-person, the thinking, feeling, doing human being. We may see learning, in general, as an interactive process or a socio-cultural process, a process of habit-formation or a whole-person humanistic process, and so on.

Given the variety of teachers and students and learning contexts in the global field of ELT, learning English as a foreign language is best seen as a complex, diverse process: a broad church (not a single dogma) that contains a multitude of often contradictory tendencies and approaches. It is good to keep this complexity in sight as we discuss possible panaceas to all our problems. Digital technology in language education will be judged to the extent that it furthers or facilitates our linguistic and educational objectives in a way which is more efficient than any other options at our disposal.

Is teaching is a marketplace?

On the one hand, we have the classroom and the relationships that are established within its four walls to better achieve our learning objectives; while outside the classroom, we have the real world which, in the 21st century, is marked by the effects of globalisation and the predominant paradigm of the marketplace. Much of our daily life is defined or shaped by the demands of an all-powerful market: financial concerns, profits and investments have become an all-embracing, ubiquitous presence in everything we do. It is not surprising, therefore, to hear education discussed in terms of the 'marketplace', whether the term is used metaphorically or literally. But there are alternative metaphors we can use to describe what happens when we teach (a dance, a game, theatre, music, and so on). The marketplace metaphor may reflect an ideology that sees the classroom as simply an extension of the real world, where the motive force is money and profit, and therefore the learner is tantamount to a client, customer or consumer. In this neoliberal model, learning, like everything else, is ultimately shaped by the cash-nexus. The computer and the whole panoply of digital gadgets and equipment on offer to the teacher and the learner are part of the business of buying and selling; at the end of the learning process, the student will have been made more competitive in the marketplace outside the classroom.

Education is, according to the market-place metaphor, more accurately the *business* of education or education *as a business*. But within this globalised framework, one aspect of human beings that is often obscured is the sheer diversity of individual needs, in spite of the tendency to apply a universal uniformity on all and sundry (the person-as-consumer) wherever they may be in society - or indeed on the planet.

In this respect, it is worth pondering the prediction, made in 2012, that all young learners would be learning through digital devices by the year 2013:

'The New Media Consortium (NMC) reported last year that they expected mobile devices, tablet teaching and apps to be an integral part of mainstream teaching in 'Kindergarten through twelve' education worldwide by the end of 2013'. (quoted by Bish, 2013)

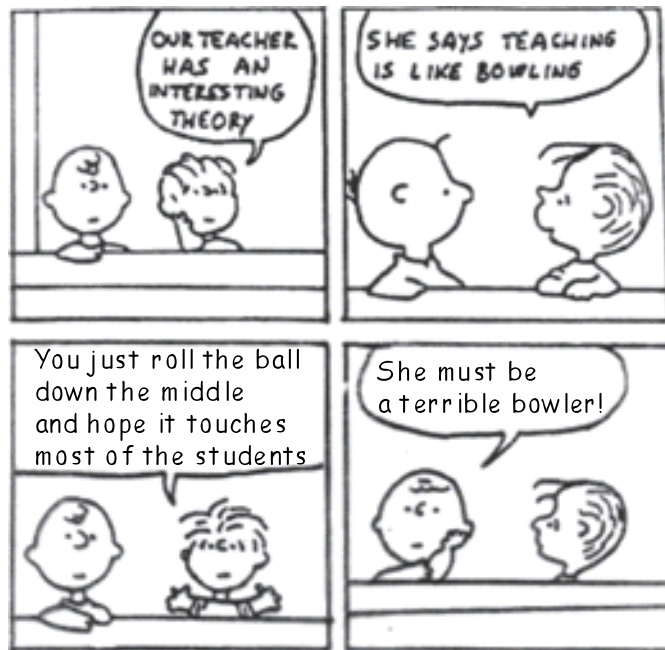
Bish quotes the 'School Box' project which planned for Zimbabwe to bring iPads and projectors to the poorest rural schools in a solar-powered kit.

A cynical view of these developments might see the hand of big business at work; after all, there is a lot of money to be made from ICT: Apple's 'invention' of the iPad did indeed spark a fresh educational spending spree, while the *Bill and Melinda Gates Foundation* is a major donor to the NMC. As part of the motivation agenda, independent and state schools are seen to be competing for students in today's 'marketplace' – or what Tony Blair has called the marketplace of educational 'choice'. In this Hobbesian struggle for success and power, the latest technologies play a part in enhancing one's competitive position.

Is teaching like bowling?

Another metaphor for teaching which responds to the challenge of diversity, is Linus's in the Snoopy cartoon (below) ; Linus, talking to his friend, Charlie Brown, expounds his teacher's theory that 'teaching is like bowling' - and he elaborates:

'you just roll the ball down the middle and hope it touches most of the students'.



'Touch' here is a key word and is ambiguous; it can mean to 'make contact physically', with one's students, which, in today's cultural climate, could be risky, taboo or even illegal. The word 'touch' can also mean to touch the students figuratively- in this sense, it carries a whole cluster of connotations: to motivate, to engage, to meet the students' needs as language learners and as human beings. This simple metaphor is actually rich and more complex than the 'education is a marketplace' metaphor. The question of whether computer technology promotes or hinders learning can begin to be answered if we consider the degree to which it 'touches' the students, that is: does IT motivate or engage, the students as learners and as human beings in all their rich and unpredictable diversity?

Mark Prensky, one of the gurus of the digital revolution in education, coined the term 'digital natives' to highlight the world of a difference that exists between the computer generation and all previous generations: 'young people are natives of a digital world and so they think and learn differently from the past; teachers who are 'digital immigrants' are unable to relate to their students affinity with ICT....'

This statement, if we agree with it, has enormous implications for the way we should be teaching our students in the 21st century. That little word 'so' is made to carry multiple meanings: the digital developments of the last 30 years have revolutionised not only the way digital-natives learn but their very cognitive processes. Those teachers who have had to acquire digital skills or have failed to do so ('immigrants') cannot understand and or respond to their students' sense of identity ('affinity') with all things digital.

If all this is indeed the case, we've already lost our students - those of us who are old enough and befuddled enough by technology to be digital immigrants. But can this possibly be true? Firstly, an immigrant can become a citizen of the new country and even become acclimatized to the new culture, learn the language and become thoroughly integrated with his or her new home. Many pre-digital teachers have indeed become adept at digital technology and feel thoroughly at home in the world of the internet and the whole gamut of electronic devices; so why shouldn't they be able to relate to their students' close connection with the digital world?

Another thought-provoking assumption behind Prensky's assertion is that effective teaching is dependent on the use of digital technology. If effective teaching is about motivating learners to achieve their objectives - in our case, the acquisition of a second language - Prensky is suggesting we cannot do that, if we do not use digital technology effectively (with learners who have an 'affinity' with the technology).

But this is to exclude so much more that goes into teaching and even more so into *teaching as an educational practice*: apart from the appropriate use of equipment/technology/materials, what else goes into effective teaching? The obvious components of sound educational practice will include, apart from hardware and software, methodology (knowing about and selecting appropriate methods and techniques), understanding and applying aspects of the psychology of learning (meeting needs and wants, building motivation, rapport and self-esteem etc); ability to apply classroom management techniques and facilitate effective group dynamics, and so on.

Exploring the digital paradigm shift

Let us now examine, with a sympathetic eye, the core claim of *aficionados* of digital technology in education that:

- 1 multi-media deepens comprehension and strengthens learning and, as a result...
- 2 the digital revolution has given teachers more ways to respond to students' individual needs.

If this is the case, then it would be fair to say that teachers should 'recognize the need for integrating technology in their teaching'. One example in support of the positive

hypothesis of computers in language teaching, is in the field of *testing*. Testing and assessment procedures generally, have had an important but controversial role in English language teaching, especially since the rise of communicative methodology and learner-centred approaches to teaching. The problem has been in the *mismatch* between the principles of communicative/learner-centred approaches, with their prioritising of individual differences, on the one hand, and the (apparently) inevitable process of levelling and the crushing of individual needs and differences in the process of traditional testing.

This tension between testing and teaching procedures has been studied, researched and debated within the framework of the 'washback effect' of testing on teaching. In a nutshell, regardless of the learner-sensitive methodologies adopted by teachers since the mid -70s, teachers tend to 'teach to the test' - and this entails treating all students in the same way, in the name of test objectivity: the same practice of past papers or testing-like material, with its standardized range of discrete-item testing devices or unvarying whole-text comprehension questions., the same time constraints and deprivation of auxiliary materials etc etc

CBELT

In short, when we teach well, we take individual differences into consideration and build motivation by responding to diversity; in the name of fairness and respect for personal learning styles. When we test, we ignore those differences: we are obliged to apply the same material, in the same way, in identical conditions, with the same constraints, to all 'candidates': in the name of fairness. We can describe this as the testing-teaching paradox. The rise in computer-based English language testing (CBELT) has gone some way to resolving this paradox. CBELT allows for individual learner differences in the choice and level of the test items, the particular type of test chosen, feedback without limits and without damage to the self-esteem of the test-taker, the opportunity to retake tests, find out why mistakes were made, and so on. The computer has, moreover, allowed for faster and more precise construction of learner corpora and research into L1 slips, errors and interference: all of this feeds into the *testing* process and makes it approximate more to a constructive *learning* process than merely a risk-driven game of Russian roulette. Information technology has, from a pedagogic perspective, enhanced the teacher's potential to respond to learners' needs.

Error not terror

A similarly positive argument could be made for the impact of the computer on the treatment of error. The brilliant, award-winning work of Russell Stannard has demonstrated ways of correcting students' errors using computer software that makes the traditionally tedious and stressful process of correcting students' work a motivating

and educational process of learning from error, through sharing and collaboration. In both testing and error correction, the option of storing students' work and revisiting it (by teachers, the individual student and the class as a whole) adds a unique level of increasing awareness to the process of second language acquisition, which was not possible in the pre-personal computer age.

The Hole-in-the-Wall

The strong version of the 'IT-is-good-for-education' hypothesis can be seen in the work of Sugata Mitra. A large-scale attempt to put technology into the service of education is Sugata Mitra's 'Hole-in-the-Wall' experiment.

The research began in the villages of India and has now moved to other contexts. Mitra launched his 'Hole-in-the-Wall' experiment in an effort to explore the belief that children in the rural slums of India are capable of teaching themselves everything all on their own. The process began in 1999, when Mitra put a computer in the wall of a Delhi slum and, just as the researcher expected, children gathered round and started pressing keys to see what this machine could do. What surprised Mitra was just how quickly the children could learn from the computer: on their own, they mastered the technology and started learning all kinds of things online – remarkably, and as a by-product, they learnt English in the process. At first, the children played games and when they got tired of playing games, one of the kids discovered that you can ask questions of the internet and the internet gives you answers. A miracle!

All this without the involvement of teachers or any other adults. The technology and the children's working together on problem-solving seemed to make teachers redundant; the implications of such an outcome are enormous - and controversial. The really interesting point was not only that adult-teachers were redundant but that the learners seem to *benefit* from the adults' absence.

The experiment was repeated in poor rural areas in India, where teachers would not go (the conditions and pay were so bad) and the Indian Ministry had more or less abandoned the children in these poor far-flung provinces.

Mitra claims that children in the rural slums of India are capable of teaching themselves everything from character mapping to DNA replication all on their own. In the academic publications that followed the experiments, Mitra discusses a world of unstoppable learning through the creation of a worldwide cloud – where children pool their knowledge and resources in the absence of adult supervision to create a world of self-promoted learning.

Later, the 'Hole-in-the-Wall' migrated to the UK and has been tried out - apparently with considerable success in countries such as Mexico. In one school, twelve-year-old Paloma Noyola Bueno, who lives in a Mexico slum, topped the all-Mexico Maths exam after her school teacher implemented Mitra's revolutionary teaching method in the classroom. In another class, the children went from 0 to 63 per cent in the 'excellent' category on the Maths exam, while failing scores went down from 45 percent down to 7 per cent.

Mitra went on to create 'schools in the cloud': *Self-Organised Learning Environments* (SOLES), which try to do *inside* the classroom what the 'Hole-in-the-Wall' did *outside*

the classroom. Thus, the children crowd around computers and try and answer a question such as 'Why does hair grow?' Invariably, the children, working autonomously in groups, eventually come up with the correct scientific answer.

Mitra has created a 'granny cloud' - or an adult role in the whole process - the 'granny' is an adult available online for pupils to talk to if they need help or need to get better results from their independent research. The role of the 'granny' is not that of 'knower' (as in some humanistic methods) but that of motivator: to encourage the children to keep trying. Apparently, the sheer encouragement of the learners to believe in their ability to find the right answer improved their results by a significant percentage.

For Mitra, the implication of his experiments includes the need to re-think and reinvent traditional models of education. The learning of facts has changed because of the availability of computers: there is little point in wasting time, claims Mitra, teaching something which the children can find out for themselves. Teaching the 'ten-times table', grammar or spelling, for example, are now redundant. Though children need to know these skills, we don't need to *teach* them. Spell-checkers will automatically improve our spelling; calculators will enable sums and so on.

So what should we be teaching children? If the facts and information are freely available then we should be teaching kids to *sift* the information they need from the information they don't need. This sifting or discrimination skill will include knowing which online sites are reliable and which are not. What Mitra is saying, in a nutshell, is that adults and teachers should first allow students to *look for* answers before *telling* them the answers.

Examinations

Finally, Sugata Mitra suggests that we revisit traditional examination procedures in the light of his findings. Traditionally, as we saw earlier in this article, we isolate students when they take exams, from each other and from any supportive materials, such as dictionaries, reference books and, nowadays, ipads and other digital devices. Mitra suggests that if allow students to collaborate in taking exams and allow them to use digital devices the exam will still 'discriminate' between the relative competence of students. This will be possible if we ask the right kind of questions: not purely factual questions, but questions which involve judgement and critical thinking. The best students will then still come out top. The setting and marking of questions will be more challenging than they are now, but the pay-off (back to the 'marketplace' metaphor) will be worth it. In a sense, Mitra here is converging with a Socratic view of knowledge which involves the in-depth critical examination of facts or assertions and not just the mechanical examination of right or wrong information: the unexamined life is not worth living.

In part 2 of this article I will examine more critically the claims made by Prensky and Mitra from a critical pedagogic perspective.

A full list of references will be provided on completion of this two-part series of articles.

The author

Luke Prodromou graduated from Bristol University and has an MA in Shakespeare Studies (Birmingham University), a Diploma in Teaching English (Leeds University, *with distinction*) and a Ph.D (Nottingham University). He has been a plenary speaker at many international conferences, including Mextesol, Braztesol, TESOL-SPAIN, Italy and IATEFL, UK. Luke is a founder member of the *Disabled Access Friendly Campaign* for which he wrote - and performed, with D. Gibson - the 'Wheelchair Sketch'; he was a member of the theatre group: *Dave'n'Luke English Language Theatre* and now performs as *Luke-and-friends*. He is the author (with Lindsay Clandfield) of the award-winning handbook for teachers, *Dealing with Difficulties*. His 20 or so coursebooks include *Jackpot*, *Smash*, *Flash on* and *Longman First Grammar and Vocabulary*. He also gives talks and performances related to Shakespeare and Dickens, their life, work and relevance to contemporary issues (power, gender equality, the global crisis et al).