

Ivan Illich

Deschooling Society

A review

Introduction

Ivan Illich, who died in 2002, wrote this ground-breaking book in 1971. In the modern world at large I suspect his message has not been heeded at all - at least not on any visible, national-level scale. In the UK at the moment far from de-schooling we are seeing an extraordinary increase in the schooling of society. The absurdities of what Illich would call credentialed education were recently highlighted by a story in the press about a Youth Programme in Bury giving youngsters a certificate from the awarding body AQQ for catching a bus. [1]

Worse; the lifelong learning movement is using language which sounds vaguely radical. But, for them, taking learning out of the classroom and extending it throughout life is accompanied by the same thinking about credentials which Illich identifies as one of the 'evils' of institutionalised education. Lifelong learning means certificates for doing ordinary things; it is an extension of the curriculum into ordinary life rather than a recognition that real, critical or skills learning takes place throughout life in unstructured ways never approved by officials. The 'learning' accredited by the lifelong learning movement is the infantilising of people by accrediting ordinary experiences rather than learning.

One possible reason for the lack of implementation of Illich's ideas is that he sees an involvement by government in bringing about a new way of learning. He talks about this in Chapter 6 of the book, 'Learning Webs'. In other places he also promotes the idea of learning vouchers given by the state to people to spend on any kind of education they see fit. He suggests that government will need to legislate to ensure that employment practices cease to favour those with officially approved certificates and test solely on actual competence regardless of how it was gained. He presents a coherent programme; but it just seems unlikely to this reviewer that government will ever be persuaded to enact the necessary legislation.

This is a deeply thought-out work. Illich is concerned with human relationships at a fundamental level. He sees schooling, the mass, compulsory, public schools as providing an induction into a way of life which is consumerist, packaged, institutionalized and impoverished.

He claims it is patently false to claim that most learning is the result of teaching. On the contrary the teacher in a modern school is in fact acting in three roles; as custodian of societies' rituals, as therapist and as preacher. Illich proposes instead a learning society, where skills training is widely available and divested of the ritualistic elements of schooling, and where citizens freely associate to develop a critical education, perhaps guided by 'masters'. Illich sees in modern schools a false myth of salvation. He points to the fact that however much money is poured into public schooling it always requires more and the outputs do not increase. It is chasing the myth of unlimited progress. He sees educational credentials as an element in this; one gets credentials to enter on the next level but credentials don't measure competence so much as attendance at a school.

What follows is a brief summary of the argument of the book.

Chapter 1 Why we must disestablish school

As already mentioned Illich sees schools as one case of modern institutions which persuade people to exchange their real lives for packaged substitutes. School education is taken for learning, social services for community spirit and hospitals for health. Education and health are seen as the result of the consumption of certain treatments. Modern poverty is defined by technocrats in terms of lacking these 'essential' services. This is a modern form of colonisation.

The poor are in fact further disenfranchised by schooling as they benefit from it proportionally less than the rich. Schooling in developing nations is used to create new elites with a consumerist mentality.

Illich sees in these institutions which we see as benign signs of disempowerment. In education he focuses on credentials and the way that education is a about packages designed by technocrats being delivered to 'consumer-pupils'. Thus are children trained in consumerism.

Further, by taking resources and goodwill mass public schooling stifles efforts that might otherwise be made in the community. (In the 1870s when education became compulsory in Britain working class schools which were self-funded by parents died off).

In a theme which is recurrent throughout the book Illich asserts that pedagogical alienation in society is worse than the alienation of labour (as analysed by Marx). Schools condition people to be consumers of packages produced by other people and to accept ideas of endless progress. The dream conjured up by schooling is one which makes "futile promises of salvation to the poor of the technological age". Illich thinks deschooling central to the adjustment to bring society to a more humane level. He suspects Marxists and others who promote the cause of social change but see no problem with schooling. For Illich the mentality of schooling goes to the heart of the impoverished lives we lead.

Chp 2 Phenomenology of school

In this chapter Illich attempts a phenomenology of what school is. He points to the fact that childhood is a relatively recent construct in the West. It is possible he takes this point slightly too far; even ages which did not cultivate 'childhood' to the absurd extent that our society does recognized perhaps a distinct time characterised more by play and having greater needs to be cared for. But, essentially, this is a valid point; comparison with contemporary unschooled societies shows young people much more integrated and involved in daily life and work, not boxed away into schools. That is; the construct of 'childhood' is necessary to justify age-specific obligatory schooling. As Illich says "Only by segregating human beings in the category of childhood could we ever get them to submit to the authority of the schoolteacher".

He also analyses the multiple and total roles of the teacher in this enclosed institution. The teacher has three roles; custodian, therapist and preacher. School is about much more than learning. It has many roles; creche, socialisation, keeping young people out of the workforce, training in the acceptance of the values of consumerism and obedience and so on. Because the teacher acts as *in loco parentis* for everyone he acts as a conduit by which all come to feel themselves children of the same state.

Illich notes the irony that schools are allegedly a preparation for participation in a democracy but are run in ways which apply rules and sanctions to children which would not be acceptable to adults. He writes: "The claim that a liberal society can be founded on the modern school is paradoxical. the safeguards of individual freedom are all cancelled in the dealings of a teacher with his pupil". We would note in passing that this is a trend exasperated under the present New Labour regime in the UK where measures have been a passed recently which include i) teachers can discipline students for misbehaviour even outside of school, ii) teachers can manhandle children who are 'disruptive' and iii) detentions can be imposed on a Sunday. All of these measures could indeed only be possible once people

Illich also sees in schools a new world religion offering hope, a false hope, to the poor that their children might make it. In persuading the poor that this hope lies in consuming the products of educational technocrats this false promise robs them of their self-respect. In a wry comment he notes that the Church at least promised salvation at the hour of death; schooling makes people hope that their grandchildren will make it. It becomes the dream of the poor that education will lift them out of poverty; but it is a dream. The poor find new forms of discrimination in education which benefits the children of the middle-classes proportionally more. When developing countries develop educational infrastructure it is about elites and new models of consumption including consumption of those other institutions of dependency which Illich identifies

such as hospitals and social services.

Chp 3 Ritualization of progress

Illich sees education as being about the consumption of packages, (produced by others at great cost). The distributor-teacher delivers the packages designed by technocrats to the consumer-pupils. Thus are children taught to be consumers. Illich contrasts the model of passive consumption here and the kind of society it is a training for with one where repair and reuse of tools and equipment by self-sufficient individuals would be the norm. Illich's criticism of school is a criticism of the consumerist mentality of modern societies; a model which the developing nations are trying to force on developing nations. In this view a country is 'developed' according to indices of how many hospitals and schools it has. Illich, who worked in South America, is sensitive to how indigenous peasant culture characterised by self-sufficiency is undermined by modern processes based around the consumption of services, which train people to be clients.

In terms of school Illich criticises the system which offers a packaged education and awards credentials for the successful consumption of the packages. The packages are continually being re-written and adjusted but the problems they are supposed to address remain. This is much more than simply a racket to produce more textbooks and exam syllabuses; this is a commercial activity mirroring the marketing processes of the persuasion industry. Children are the (obligatory) recipients of these marketing efforts. They are a captive audience who consume these packages produced (after 'research') by technocrats. It is the same myth as drives our mad pursuit of unlimited economic growth; paradise is to be won by never-ending consumption - of what is produced by others. Only what is measured can be credentialed and so imagination is not valued. Being subject to this process leads to people developing a 'futile omnipotence'. This reviewer re-calls meeting a young graduate from Oxbridge who had not yet entered the workplace and in a discussion about the reviewer's job in a small publishing firm (I had taken him round) it was apparent that the young graduate felt he would be entering the workplace at the level of an editor at least. In reality then he had believed the myth that 'educational success' has much meaning in the outside world. In truth with no experience and no industry competence training he would at best have been able to get an internship in publishing.

Learning always contains a hook to the next layer; in the end there is a disconnect between schooling and reality. 'Educational success' does not mean more has been learned; though in a society which (over-)values learning credentials it can become necessary. Thus people feel they have little choice but to obtain credentials.

As the teacher is the custodian of society's rituals so schools as institutions are the locus for the promotion of societies' myths. Schools legitimise hierarchy, progress and consumption. Illich is especially concerned with this in developing nations where he sees a wrong direction being taken as these countries adopt the consumerist model of the west/north. Education is the means by which these societies get sucked into the consumerist way of doing things. (As an example we would adduce that it is no accident that having invaded Afghanistan one of the primary concerns of the West now is to build schools; we are training up an elite to be consumers and purveyors of the treatment model of human services). The majority will pay for schooling through tax but only an elite will truly benefit; schooling paid for by tax is regressive.

Schools promote the myths of this society especially those concerned with the never-ending pursuit of progress. He writes: "commitment to unlimited quantitative increase vitiates the possibility of organic development". More schooling leads to rising expectations but schooling will not lift the poor out of poverty; rather it will deprive them of their self-respect.

We have already mentioned how Illich sees pedagogical alienation as more profound than the alienation of labour. In terms of schools' role in promoting consumption and the idea of consumption Illich comments that Marx did not think much about cost of creating demand, (indeed this does not form a significant part of his analysis) but in modern capitalised nations the creation of demand is huge business, with schools at the forefront. If students are included with staff then schools are the biggest employer in developed nations. For Illich schools pre-alienate; "school makes alienation preparatory to life thus depriving education of reality and work of creativity".

Schools teach the need to be taught. Illich writes: "Once this lesson is learned, people lose their incentive to grow in independence; they no longer find relatedness attractive, and close themselves off to the surprises which life offers when it is not predetermined by institutional definition". At its most basic schools operate according to the notion that "knowledge is a valuable commodity which under certain circumstances may be forced into the consumer". Schools are addicted to the notion that it is possible to manipulate other people for their own good. (We see in this links to the most recent form of schooling; the schooling of people's

emotions by self-appointed experts, in the therapy industry and the disturbing development of these kinds of direct emotional training as part of the curriculum.) [2]

For Illich, then, schools offer something other than learning. He sees them as institutions which by requiring full-time compulsory attendance in ritualised programmes based around awarding credentials to those who can consume educational packages and endure it for the longest. It is thus a training in "disciplined consumption". And this early alienation is more serious than labour alienation. A radical programme of deschooling would "...endanger the survival not only of the economic order built on the coproduction of goods and demands, but equally of the political order built on the nation-state into which students are delivered by the school".

Chp 4 Institutional spectrum

In this chapter Illich proposes a model for evaluating institutions. He contrasts 'convivial' institutions at one end of a spectrum with manipulative ones at the other. In line with the theme which occurs throughout the book that his criticism of schooling is more to the point than some traditional Marxist challenges to contemporary society Illich points out that many on the left support institutions on the 'right' of his scale i.e. manipulative ones. As examples of convivial institutions he gives; the subway and public markets. We would add that eBay seems a good example of a convivial institution. eBay illustrates Illich's point well, that in convivial institutions there are rules but they are not aimed at producing an effect in people; they are there to promote accessibility - to keep the game going.

Illich sees right-wing, or manipulative, institutions like schools as being engaged in fostering compulsively repetitive use while frustrating other ways of achieving the same end. For example; a medical science in the West often treats mental problems by repeat prescriptions of drugs which inhibit other approaches e.g. diet, exercise. Psychotherapy which sometimes makes a point of not using drugs also offers a repetitive treatment which breeds dependency. Schools encourage repeat consumption of the educational packages (which always hook into the next one) and by taking up all a young person's time and by associating learning with being subject to power turn young people off learning. Having turned young people off learning schools then consume vast resources trying to 'teach' the resilient, while claiming that resistance to learning is 'normal' in children, when in fact the opposite is the case. The examples here are the present writer's.

Illich urges a redeployment of technology in support of convivial institutions and away from the large corporations which he sees as manipulative in their manufacture of demand. Schools also manufacture demand. It would be interesting to see more of how Illich envisages technology being used by convivial institutions. Some clues are given in his talking about a culture which promotes re-use and repair of tools. An example perhaps would be modern cars with their sealed engines designed to be repaired by shops with access to diagnostic tools supplied by the manufacturer contrasted to simple cars with standard parts. If such never existed they certainly could. The contrast is between a culture which promotes people as passive consumers of technological solutions provided by large, distant, corporations, (for which school is a training), and a culture which permits people to be active in finding solutions for their own problems.

Chapter 5 Irrational consistencies

A key theme in this work is the criticism of the idea that learning is the result of teaching. In Illich's analysis education as a funnel for educational packages. Illich opposes this with an idea of 'learning webs' which are about "the autonomous assembly of resources under the personal control of each learner". In Chapter 6 he sketches some ideas of how these distributed convivial institutions might work.

In this chapter Illich criticises some of the ideologies of schooling which he sees in apparently radical initiatives such as the free-school movement (of which Summerhill is the best known example in the UK) and the lifelong learning movement. He points out that free-schools still ultimately support the idea of schooling as the (not a, the) way of inducing children into society. Education has always an authoritarian and free-association elements in it as part of this induction of children into a schooled society. The free school movement is simply focusing on the free association element in this. Both are ultimately concerned with children taking their place in the National Economy.

There are several prescient observations in this chapter. For example on lifelong learning Illich writes: "All educators are ready to conspire to push out the walls of the classroom, with the goal of transforming the entire culture into a school". This is of course now very obviously the goal of the lifelong learning movement in the UK, criticised for "treating adults like children" by the sociologist Professor Furedi in his book "Where

have all the Intellectuals gone". [2] (Of course, Illich would like to see a deconstruction of 'childhood' so that young people are no longer treated 'like children' either).

Illich also identified, and this is a theme throughout the book, how the packages delivered by teachers in schools are designed by technocrats. He writes "For the technocrat the value of an environment increases as more contacts between each man and his milieu can be programmed". The recent use of surveillance technology in schools in the UK is a case in point. Systems such as 'cashless catering', finger-print library registration systems and electronic registrations systems which are proliferating in UK schools, actively promoted by the government agency BECTA, very specifically reduce spontaneous human interaction in schools. It is clear reading their advice to schools that this is why BECTA encourages schools to adopt them. [3] This is a nasty use of technology in support of what Illich would see as manipulative intuitions.

Illich sees manipulative institutions as being those where "some men may set, specify, and evaluate the personal goals of others". It is very clear that Illich means it when he calls for the deschooling of society. There is nothing in this analysis which would favour it being deployed in support of some call for a utopian school. The analysis is critical of schooling through and through, including attempts at reform which leave untouched the basic idea of school. He also, as we have seen, argues that his call for deschooling is a more primary call than Marxist calls for social change, which do not call into question the idea of school, because without deschooling the alienation which he is averse to and which schools are the training ground for will continue to exist.

Chapter 6 Learning Webs

Illich's practical vision for learning in a de-schooled society is built around what he calls 'learning webs'. Illich envisages 3 types of learning exchange; between a skills teacher and a student, between people themselves engaging in critical discourse, and between a 'master' (a master practitioner) and a student. This latter kind of relationship, which can occur in intellectual disciplines or the arts but also in crafts or skills such as mountain climbing is stifled in a schooled society where non accredited learning is looked at askance.

Illich also considers the de-institutionalisation of resources. He proposes that resources already available in society be made available for learning. For example a shop could allow interested people to attempt repairs on broken office equipment as a learning exercise. He suggests that such a network of educational resources could be financed either directly by community expenditure (in effect say part of a local authority budget) or by a system of vouchers which could be spent on free-market providers of this kind of facility. The present writer would add that this is a very effective learning mechanism; the present writer has found, while working as an IT teacher, that lessons built around taking apart and fixing old computer equipment changed up several gears in terms of engagement of the students. In such lessons the formal teacher-pupil relations, with all the tensions those entail, evaporated. Students engaged and actually acquired practical skills through practice - which is the way people learn. There is no reason, of course, why 'theory' has to be taught separately.

Illich is not, as we have noticed an anti-authoritarian free-schooler. He notes that rigorous drill instruction can be a very effective way of learning a new skill; such as leaning how to speak a new language. But, for Illich, drill instruction is an exchange free of the hidden curriculum of schooling, which overlays straightforward acquisition of skills and engagement with critical studies with so much more; we have looked at the role of the teacher as preacher, therapist and custodian of society's rituals.

Whether he is talking about skills exchanges or educational resources Illich envisages non hierarchical networks. The professionals in Illich's vision are the facilitators of these exchanges not the distributors of approved knowledge packages in the school system. He envisages two type of professional educators; those who operate the resource centres and facilitate skills exchanges and those who guide others in how to use these systems and networks. The 'masters' we have mentioned above he does not see as professional educators but rather as people so accomplished in their own disciplines that they have a natural right to teach it.

Illich advocates as one possible means to facilitate these exchanges economically the idea of vouchers which people could spend as they chose. He also allows for some element of direct social expenditure.

Illich's programme is practical and thought out. He proposes new institutions of a convivial nature to replace the manipulative ones of the current schooling system. In these new institutions there is no discontinuity between 'school' and the world; (though this is most definitely not 'lifelong learning' which seeks to extend schooling throughout adult life). There is no ritual of induction of the next generation into the myths of society

through a class of teacher-preachers. Illich is interested in learning as a human activity carried out for obvious purposes - to gain the benefits that learning the new skill brings for example - not as an excuse for control and manipulation.

Because it is a programme thought through at the social level it does involve social planning. Illich's programme is in this sense a reformist one. He calls for policy changes at the social level which means legislative changes at a local and national level. The legislation he calls for would permit the kinds of free association which he seeks; such as voucher schemes which enable people to select their own education or legislation to outlaw discrimination in favour of educational credentials. That is, he envisages legislation along the lines of the rules he describes in convivial institutions, rules which facilitate access and participation, rather than rules which manipulate people into doing what other's want.

Chapter 7 Rebirth of Epimethean Man

Illich contrasts a world which pre-dated classical Greece, a world of hope, with the world of classical Greece wherein man learned to build and fit into institutions which delivered predictable results, a world of managed expectations. Promethean man typifies expectation and control through institutions, the male and rational Greece of cities and *paideia* (education). Prometheus' brother Epimetheus whose name originally, according to Illich means hindsight was interpreted to mean dull in classical Greece. So, for Illich Prometheus is the man of institutions and Epimetheus was dismissed. But the myth developed and the daughter of Epimetheus and Pandora made a new earth with the son of Prometheus. Illich traces in the evolution of these Greek myths a changing relationship with rationality and the earth. In this new relationship he seems a model for a new synthesis which allows technology but which also does so in a balanced way which also allows human beings relating with each other and the earth.

He argues that we have come full-circle. Primitive man was in awe of the forces of nature which he felt as having an awful necessity of their own. After the emergence of institutions mankind discovered his ability to engineer his social world. For a time the worlds of hope (in the face of inexorable fate) and expectations - that we can manage our destinies through institutions - kept each other in balance. However; "Surreptitiously, reliance on institutional process has replaced dependence on personal goodwill" and now "A child on the streets of New York never touches anything which has not been scientifically developed, engineered, planned and sold to someone".

Our faith in institutions is such that we think that there is no problem which cannot be solved by an institution. (The tendency of UK governments to create endless 'quangos' at huge public expense which seem to achieve very little is a case in point). Our belief in social engineering through institutions is such that "The contemporary ideal is a pan-hygienic world; a world in which all contacts between men, and between men and their world, are the result of foresight and manipulation".

Our faith in progress is such that if we *can* produce something we feel we must. So; the demand is manufactured to follow what can be produced. This produces the 'rising expectations' ; each met expectation simply exposes more.

Illich regards this faith in institutions and ever-rising production to meet manufactured demands and modern man's trap, into which both capitalism and the Soviet (he was writing before *glasnost*) have fallen. And, in both, "School has become the planned process which tools man for a planned world, the principal tool to trap man in man's trap".

Illich also points out that the commitment to ever rising production has not in fact led to an abolition of poverty simply through the creation of an abundance. Even the minimum packages which modern taste requires are now expensive. The theme that demand is manufactured and that school is the first agency in this is recurrent throughout the book. Illich links the progressive hierarchy of schools where every level is a pointless in itself but a hook to the next level (think 80s video games) with a wider social faith in progress and ever increasing product and demand; an economic nightmare with profound ecological consequences.

Modern man thinks that man needs institutions to survive. He forgets that he needs nature and other individuals. However, Illich sees an emergent minority who are critical of the institutionalised cultures he is describing and who are willing to place hope above expectations, who love people more than products and who "love the earth on which we can meet each other".

Conclusions

This is a profound and far-reaching criticism of the heartlessness of modern life. The implications of Illich's call for deschooling are totally subversive of modern society. It is a call for a profound revolution in how we think and how we live our lives.

This is probably why his plans for new learning webs are unlikely to be legislated for by any government still wedded to the ideals of progress, institutions and manipulation of men for their own good. We would question whether the necessary reforms will ever come from government; even in a democracy government represents an accumulation of power. Elected politicians seem to find more in common with the existing economic and cultural elites (who believe in progress and institutional control) than with the people. The recent record of New Labour in Britain shows how profoundly undemocratic a democratically elected government can be.

Illich does not adopt an anti-scientific or anti-technologist viewpoint, though he treads close to sounding anti-scientific at times. There is a possible danger that his conclusions with their emphasis on the ecological devastation caused by our commitment to ever increasing production could lead to him being seen as anti-scientific. It is a fine balance between acknowledging that it is time to end the dream of scientific progress leading to the fulfilment of human demands - because this has got out of hand and has long since moved in the worlds of manufactured demand - and sounding like an emotional champion of the harm that all science can do. It is clear that his vision of the world includes a decentralised use of technology in convivial rather than manipulative institutions. Illich is not an anarcho-primitivist. On science itself he has less to say.

It might be possible to see in Illich's use of Greek myth to describe a primitive state of acceptance of fate, followed by a period of institutionalised social ordering which grows out of control and becomes harmful in its very attempt to cure the ills of human existence and the possibility now of a balance between the two a Christian dialectic of innocence, fall and redemption. Certainly there is an implicit call for a return to innocence in this work. But, whatever echoes of one kind find in Illich he is not bound to any tradition. The critical analysis of institutions and how they do harm in trying to solve human problems is not especially Christian. There is perhaps though a sense of grace and transcendence which he takes from his religious background; a quality of life that the priest working amongst the poor in South America might come to value.

This book as criticism is all the more timely at present. Under the most recent government Britain has seen a huge growth in manipulative institutions together with an upsurge in the belief that human ills can be solved by social engineering. Illich's analysis of manipulative institutions being concerned to eliminate spontaneous relating to the point where all relationships are programmed and managed is sadly all too evident in the recent promotion of technologies of control: talking CCTV, the use of surveillance technologies which would not be out of place in top-security prisons being used completely routinely in schools, and the social instruments of control which obtain their end by manipulating the criminal justice system - the ASBO, parenting orders and demoted tenancies with which the underclass and be controlled, but not touched. The schooling of society becomes evident in the growth in certification for even trivial tasks; a youth programme giving teenagers certificates for catching a bus for example; the idea of the school as a hub in the local community; the recent attack on home education; the growth in University places -and the parallel growth in debt which graduates now acquire, a further boost for them to rapidly join the world of over-production as they need to pay off the debt they've acquired getting the certificates to join it.

It is transparently obvious that more and more education (which necessarily creates a pyramid structure) does not solve social ills. Increasingly while downplaying traditional authority the new left-wing elites are turning to more and more authoritarian measures. For example one 'left-wing' member of the IPPR (Institute for Public Policy Research) said recently "Actually what works is structure, discipline, uniform and hierarchy".⁵ The point here is 'what works'. This is not a concern for human relating but a concern for how to get the most social conformity and economic productivity out of people. It is precisely this obsession with profit (or economic growth for its own sake) and efficiency which leads to the kind of school system which Illich urges us to abandon.

The only criticism of Illich's thought I would offer is that it may be somewhat politically naive to look to governments to legislate for the alternative vision he proposes. The experience in the UK at any rate is that the left-wing and 'progressive' parties have become interlinked, completely, with the elites of the over-production systems which are linked themselves with the depersonalising institutions which Illich criticises. New Labour, in particular, would be a case in point of how 'left-wing' parties can adopt the right-wing, manipulative institutions which seek to control peoples' behaviours. In terms of legislation in the UK that would leave the Green party. The Green party may yet come into its own and become a significant force in British parliamentary politics with a coherent programme but at the moment it seems to be very fringe. One problem the left has always had is that while 100 people may be united in their objection to capitalism they may also have 100 divergent view on what to replace it with and even when they agree about that may

disagree about the means.

For this reason we would suggest that the best use of Illich's work on deschooling society is not so much as a handbook for political reformers but as a handbook for those who are looking to find ways to build authentic human lives under the shadow of the current manifestation of the *Urstat*.

Deschooling Society was published in 1971 by Calder and Boyers Ltd

Notes:

1. <http://www.dailymail.co.uk/news/article-1206444/Boy-gets-exam-certificate-catching-bus.html>
2. Where have all the Intellectuals Gone? Frank Furedi Continuum 2004
3. http://schools.becta.org.uk/uploaddir/downloads/becta_guidance_on_biometric_technologies_in_schools.pdf