Means and ends in education

Do calls for more maths really add up?

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Why is education, which should be all about new ideas and exploration, so backwards-looking and conservative on curriculum matters? Part of the failure, particularly at the institutional level, to address curriculum content issues in a more fundamental, not to say "philosophical" way, reflects the fact that the "curriculum" is actually a rather amorphous entity. It encompasses not only what teachers do in school, and what exam boards eventually examine, but also the so-called hidden curriculum, meaning the implicit messages and meanings or values that learners construct about school and themselves, and about other people, the world and society, drawing on their total experience of schooling.

This much wider notion of the curriculum has led people like Andy Begg to advocate in favour of seeing the curriculum as a "process" and not a finished product. To see it as a process that defies reinvention. In a paper directed at teachers, Begg argues that it is vital to understand the curriculum not as something fixed in stone but rather as a dynamic and continuous entity.[1]

And it is true that, at the policy level, there already is an approach in which the curriculum is indeed examined and remodelled. This is sometimes dubbed the RDD approach. The idea – and the sense of the acronym – is that it is researched and developed by experts and disseminated to schools. The role for teachers is reduced to implementing the curriculum, and as for students, well, their job is simply to learn it. The wider public has no role to play.

Of course, this socially disconnected curriculum is not the only possible one. The British academic, William Reid, offers that a very different way to think about it comes about if the curriculum is seen as a vehicle for the shaping of group and individual identity.[2] From his more sociological perspective, the important questions for curriculum development are:

- What kind of people do we want to be?
- What kind of community would we like to live in?
- What sort of schooling would help us to be those kinds of people and have that kind of community?

[1] Begg, A. (1998). "Getting behind the Curriculum: Teachers as Curriculum Developers." *Teachers and Curriculum*, 2, 7–11.

[2] Reid, W. (1987). "The Functions of SBCD: A Cautionary Note." In N. Sabar, J. Rudduck & W. Reid (Eds.), *Partnership and Autonomy in School-Based Curriculum Development* (pp. 115–124). Sheffield: University of Sheffield, Division of Education.

Figure 3.1 The Philosopher Friedrich Wilhelm Joseph Schelling in 1848. Daguerreotype Portrait by Hermann Biow.

Where contemporary curricula are often coldly utilitarian, this approach highlights social values alongside technological and economic aspirations. And by doing so, it also has radical implications regarding who should participate in curriculum development.

In fact, social values have always been part of educational strategies – they were there when Plato sketched out his ideas in *The Republic* 2000-odd years ago. Social values are also at the heart of the liberal tradition, stretching from the 17th century to the start of the 20th century. And so, even if, particularly in the latter part of the last century, the educational arguments of thinkers such as Brenda Almond went against the political current of the time, they remained part of a very much longer philosophical tradition. Indeed, Almond says as much, writing:

> the liberal view tends to see education in a wider perspective; whereas instrumental approaches are narrowly focussed on the needs of a particular contemporary society, the liberal view of education has its eyes set on the cultural tradition of mankind as a whole, stretching back over other societies, ignoring boundaries of time and place. It is this conception that leads R. S. Peters to declare that "Education" is at least partly an achievement word, not merely a task word, and the education there has an intrinsic rather than an extrinsic justification. Unlike instrumentalist approaches in which education is seen as a means to some other end, the liberal conception is of education as an end in itself.
>
> *Means and Ends in Education* (page 12)

And here, put briefly, Almond is also saying that decisions about what teachers should teach should not revolve around notions of what will be "useful".

"Useful"? Unfortunately, deciding which parts of education are "useful" is not as simple as policymakers often suppose. Added to which, at ground level, as it were, there is more interest in "how to teach" than in "what to teach". For example, one academic study comparing approaches to teacher training in the UK to those in Norway concluded that the UK was only really interested in training teachers to deliver the national curriculum, whereas Norwegian teacher training had a much broader remit, including reflections on the aims and implications of educational theory.[3]

Rachel Bolstad, a researcher with the New Zealand Council for Educational Research, sums up the inertia and lack of dynamism in curriculum matters.

> The subjects I took at school: mathematics, science, English, and social studies, have been taught in schools for so long that their role in the curriculum is rarely questioned. Indeed, they could be considered to have become "cultural institutions" in today's schools. Likewise, it seems the organisation

[3] Stephens, P., et al. (2004). "Teacher Training and Teacher Education in England and Norway: A Comparative Study of Policy Goals." *Comparative Education*, 40, 109–130. JSTOR, www.jstor.org. Accessed March 22, 2024.

> of content (units, topics, and themes) within each subject, in secondary school at least, tends to follow familiar patterns that change little from year to year, or from school to school.[4]

There was a revealing spat, around this time, that became the gossip of academic philosophy, concerning the Department of Philosophy at Princeton in the US. The issue was broadly the value of the study of the history of philosophy. Working within this subject area in universities had increasingly been considered a very inferior activity to work involving the supposedly "modern" skills of logic and analysis. And so, under the mistaken impression that his department required its undergraduates to study the subject, one of the full professors, Gilbert Harman, put a sign on his door which read: "History of Philosophy: Just Say No!" Although the sign was only up for two days, it created a stir in the normally very placid circles of academic philosophy and prompted a discussion about the teaching of the history of philosophy, not just in Harman's department, but also in the profession more broadly.

Harman himself later explained the public statement to fellow philosophy academic Tom Sorrell in these terms:

> I think as an empirical matter that students of philosophy need not be required to study the history of philosophy and that a study of the history of philosophy tends not to be USEFUL to students of philosophy.[5] Emphasis added, while otherwise leaving Harman's phrasing, to illustrate, all on its own, the need for breadth in the humanities and the risks inherent in the verbal gymnastics of analytic philosophers. Indeed, Harman even added that it seemed:
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> I have sometimes upset people by distinguishing between philosophy and the history of philosophy or by noting that philosophy is what the history of philosophy is the history of.

And just in case there was any doubt about whether his point was solely addressed to philosophy departments, he finished revealingly:

"Similarly, it is not particularly helpful to students of physics, chemistry, or biology to study the history of physics, chemistry, or biology".

At the time Gilbert Harman was attempting to ape Martin Luther (at least, that is, in the sense of pinning his views to his office door), history teaching was under attack in UK schools, being downgraded from a core subject in the national curriculum to merely an "option" after age 14. English, maths, science, religious studies, citizenship and ICT

[4] Bolstad, R. (2006). "Who Should Decide the Curriculum?" *Set: Research Information for Teachers*, (1), 33–34. doi:10.18296/set.0584. The term "cultural institutions" is used by Gough, S., and Scott, W. (2001). "Curriculum Development and Sustainable Development: Practices, Institutions and Literacies." *Educational Philosophy and Theory,* 33(2), 137–152.

[5] Department of Philosophy, Princeton. "The Eighties: A Snapshot." philosophy.princeton.edu.

(Information and Communications Technology) were instead given precedence. So what Harman and many of his fellow academics at this time provided was a philosophical imprimatur that curricula should be guided by notions of what is or is not "useful".

But were they right? Or is "usefulness" not the logically inevitable measure it appears to be?

In fact, the contrary idea, that education should not be unduly concerned with what is "useful", although anathema to much of today's political and indeed educational thinking, is a position that has a long pedigree.

Indeed, even a very cursory survey of the pantheon of great philosophers would soon have found them emphasising the importance not of immediate utility but instead of "learning to think", as well as emphasising that this general ability is much more significant than any specifics involved in learning "what to think".

This approach was highlighted, for example, by Friedrich Wilhelm Joseph Schelling (1775–1854), whose first work (in 1795) was even entitled *On the Possibility and Form of Philosophy in General*, when he wrote that:

> It is not when students acquire specific knowledge – the only type that can be taught – but when they become able to autonomously produce and reproduce knowledge that education is completed. Education is only a negative condition, whereas true learning (in German, *Intussuszeption*) is impossible without inner transformation. All rules for study are summed up in this one: learn only in order to create (*Lerne nur, um selbst zu schaffen*).
>
> *Lectures on the Method of University Studies*[6]

Likewise, Friedrich Schiller (1759–1805) describes the enrichment of personal experience as a prerequisite for existence in the ever-changing world and says that the understanding of self is inseparable from creative activity in the outside world. He writes: "in proportion as man gains strength and depth, and depth and reason gain in freedom, in that proportion man takes in a larger share of the world, and throws out forms outside himself".[7] Schiller saw, therefore, contrary to a certain model of education, even certain "liberal" ones, that education certainly cannot be boiled down to the development of "internal" capacities, but agrees with the wider principle of embracing generality.

The key to both making sense of the world and to playing an active role in shaping it, the philosophers perceived even then, was critical thinking. Only this offered the ability to think independently and to make autonomous judgements based on rational rules. Only critical thinking offered a unique path forward in education. For Kant, it was release from "tutelage" (the state of being under a tutor), that he describes in his

[6] Friedrich Wilhelm Joseph von Schelling. *On University Studies*. Ohio University Press (1966) via Internet Archive. archive.org.

[7] Schiller, F. edited by Elizabeth M. Wilkinson and L. A. Willoughby. *On the Aesthetic Education of Man: In a Series of Letters*. Oxford University Press (1954).

essay, "Answering the Question: What is Enlightenment?" as "man's inability to make use of his understanding without direction from another".[8]

Kant goes on to say, in an observation that still goes to the heart of contemporary modern education, that it is "the power to judge autonomously – that is, freely (according to principles of thought in general) – that is called reason".

All this can best be traced back to the foundations of what is, rather confusingly, always termed "modern" philosophy. In particular, to the first rule of René Descartes's advice on philosophical method and his determination:

> never to accept anything for true which I did not clearly know to be such; that is to say, carefully to avoid precipitancy and prejudice, and to comprise nothing more in my judgement than what was presented to my mind so clearly and distinctly as to exclude all ground of doubt.[9]

Vitaly Kurennoy, a contemporary Russia philosopher of education, calls this the first European theory of consciousness while adding that autonomous, critical thinking, based on independent reasoning, is even more fundamental than the stuff of liberal philosophies of education. In fact, he goes on, this kind of critical thinking, which rests upon the premise of individual rationality and a certain type of civic consciousness, is a cornerstone of modern society, which requires citizens to be capable of thinking autonomously. To be "educated" in this sense, means to be able to make judgements independently and freely.

Kurennoy argues that it is this that John Dewey really meant when he wrote that "the future of democracy is allied with the spread of the scientific attitude".[10] The "scientific attitude" here standing in for the willingness to hypothesise, consider the evidence and review starting assumptions. This triad is what education should be about and not the "learning of many things" – that being a strategy which, long ago, Heraclitus was already warning, "does not teach understanding".

Philosophically speaking, then, the recently rather unfashionable strategies of a general education can actually be seen to play a more significant role in the personal and civic development of a human being than specialised or vocational instruction. "Universality", the distinctive feature of the liberal model of education, takes on a new importance the broader the survey undertaken.

As Wilhelm von Humboldt (1767–1835), philosopher of education and the founder of the University of Berlin – considered by some to be "the mother of modern universities" – put it:

> All schools ... that are recognized as such, not by a single social group, but by the entire nation or the state, must aim only at the general development

[8] Immanuel Kant, translated by Ted Humphrey. Hackett. *An Answer to the Question: What is Enlightenment?*. New York Public Library (1992). www.nypl.org.

[9] René Descartes. *Discourse on Method.* Macmillan (1986).

[10] John Dewey. *Freedom and Culture*. Wingate (1951).

> of the human being. Whatever is required for the necessities of life or for one of its particular occupations, must be acquired separately and upon completion of general instruction.[11]

Humboldt is especially important within the area of philosophy of education for envisioning a liberal education as a means of realising "individual possibility" rather than as a way of drilling traditional ideas into youth to suit them for an already established occupation or social role.

And one good reason that Humboldt gives for preferring a general education to a training model is that it is only after the completion of general instruction that a young person is able to decide on their future occupation freely and independently. If educated otherwise, their self-determination is likely to be influenced by what he calls the "old mischief" of traditional society, whereby children follow in the footsteps of their parents.

And yet, despite all this, today, "In an age defined by technology and globalisation, everyone is talking about skills-based learning". Or so writes Fareed Zakaria, in a recent book entitled *In Defense of a Liberal Education.*[12]

Zakaria's focus is on colleges and higher education, but the point, and much of the book, applies just as much to schools. But let's, anyway, for a moment, think about what a "liberal education" means post-16. In his examination of the essence of education, Zakaria starts by acknowledging the trend towards teaching supposedly practical and "useful" subjects.

> Politicians, businesspeople and even educators see it as the only way for the nation to stay competitive. They urge students to stop dreaming and start thinking practically about the skills they will need in the workplace. An open-ended exploration of knowledge is the road to nowhere.

Whether in Britain, the US or anywhere the trend was clear, he warns. In higher education, students were turning away from subjects like English and Philosophy and heading towards studies that linked more decisively to careers and indeed money. Courses in business went up by leaps and bounds.

Indeed, we can easily confirm Zakaria's point by surveying the situation in the United Kingdom. In the second decade of the new millennium, the British Academy found, among other things, that:

- enrolment in language higher education programmes has been in decline with many departments either closing or downsizing in the past ten years;

[11] Humboldt, William Lithuanian School Plan, cited in 4. V. Kurennoy. *Philosophy of Liberal Education: The Principles.* www.researchgate.net.

[12] Fareed Zakaria. *In Defence of a Liberal Education.* W. Norton (2015), page 16.

- student numbers in "Historical and philosophical subjects" particularly theology and religious studies and archaeology, were dropping;
- and there were similar declines in education-related courses and teacher training courses.

The British Academy survey noted that students were particularly turning away from subjects like law and modern languages, as well as the downsizing of humanities departments, particularly modern languages but also in theology and religious studies.[13] It seemed that, as Zakaria puts it, the irrelevance of liberal values in educational decision-making is something that achieves the rare feat of bridging political divides everywhere.

Yet we should not be too quick to join that political consensus of the early 21st century. After all, technology is changing the world of work faster than the supposedly "practical skills based" courses can keep up. I remember studying myself for a conversion course in computer graphics. The university lacked any expertise in this area, far less computers running the new graphical packages, and so the department taught us about the mathematics of how a computer draws a line between two points. The lecturer assured us that although, yes, this was irrelevant to actually using graphics packages, it would help us to understand what the computer was doing.

And so, we were taught out-of-date skills that had no wider application or value. By contrast, the parts of the course that were useful (like the underlying logic of programming) had no direct application to jobs but instead had generality as an essential feature.

Of course, graphical information systems are everywhere and terribly important now. Since they will run to millions of lines of sophisticated code and involve tens of thousands of person-hours of expert work, there will be jobs programming them too. More to the point, though, most will be made using software packages and not involve coding at all. Indeed, the idea of "generally" teaching people to code computer graphics rather than to use actual programmes seems an absurdity.

The story illustrates, I think, that courses which claim to be very practical and work-orientated may not provide the benefits they claim. And likewise, those apparently rather luxurious liberal courses in history, law or philosophy may actually provide training in more ways than either the students or the professors imagine. For example, a "liberal education" often lurks behind many entrepreneurial stories.[14]

Take Susan Wojcicki, an alumna of History and Literature. In February of 2014, Wojcicki became the CEO of YouTube. A year later she was named one of *Time*'s most influential people. She explained to that magazine that the secret of her success

[13] British Academy. "The Landscape for Humanities and Social Sciences in *Higher Education: The Current Picture*." 2017. www.thebritishacademy.ac.uk.

[14] Dan Elias Bliss. "11 Remarkably Successful CEOs with Liberal Arts Degrees." www.globalexperiences.com.

was that she wasn't "focused on revenue". Instead, she was focussed on "whether this will make a difference in people's lives. What I saw was [that] this is something that's providing information for people in a better way".

Or consider Stewart Butterfield. Throughout the early 2000s, Butterfield founded and ran multiple companies including Flickr .c om and the instantmessage service Slack. Did he study at management school? No, Butterfield took a course on philosophy at St. Michael's University. Today he says:

> Studying philosophy taught me two things. I learned how to write really clearly. I learned how to follow an argument all the way down, which is invaluable in running meetings. And when I studied the history of science, I learned about the ways that everyone believes something is true–like the old notion of some kind of aether in the air propagating gravitational forces–until they realised that it wasn't true.

(Well, I'm not sure he picked up the subtleties of the aether debate, but clearly he learnt something. In just over a year, Slack raised $340 million and was named one of *Inc. Magazine*'s companies of the year. Not bad for someone who, for the first three years of his life, lived in a log cabin with no running water!)

And as far as the value of a liberal arts education goes, Butterfield has spoken very plainly about the way in which he believes it contributed to his understanding of how to create and run successful companies.

Not to forget that Apple's great innovator, Steve Jobs, enrolled at Reed College for a course with a heavy focus – not on computers – but on humanities. Although, yes, it is true that he dropped out soon after.

But then, as Zakaria puts it, culture follows power, and so we should not be surprised that "even" a liberal education is supposed to open the door to being a CEO. Business is unusually flexible in what counts as preparation for top management even if, increasingly, outside business, many professions are linked to certain specific exams. Career advice is to pick a path and specialise.

Today, this seems like common sense, so used have we become to the idea of obtaining a particular qualification and then entering a particular job market brandishing it. Yet if we go back to the year 1828, Yale University professors could be found arguing for a very different kind of education in which the emphasis was on breadth rather than depth. Specifically, "not to teach that which is peculiar to any one of the professions; but to lay the foundation which is common to all".

The Yale report starts by asking how a college might lay "the foundation of a superior education" before answering.

> The ground work of a thorough education, must be broad, and deep, and solid. For a partial or superficial education, the support may be of looser materials, and more hastily laid. The two great points to be gained in intellectual culture, are the discipline and the furniture of the mind; expanding

> its powers, and storing it with knowledge. The former of these is, perhaps, the more important of the two.[15]

Zakaria identifies the following part of the report as having had a particular influence in determining the path of liberal college education in America.

> A commanding object, therefore, in a collegiate course, should be, to call into daily and vigorous exercise the faculties of the student. Those branches of study should be prescribed, and those modes of instruction adopted, which are best calculated to teach the art of fixing the attention, directing the train of thought, analyzing a subject proposed for investigation; following, with accurate discrimination, the course of argument; balancing nicely the evidence presented to the judgment; awakening, elevating, and controlling the imagination; arranging, with skill, the treasures which memory gathers; rousing and guiding the powers of genius.

This is very much the same point that appears in Almond's *Means and Ends*,[16] where she writes that the values of liberalism are "moral and procedural", before adding that:

> Primarily this is a matter of openness to argument, impartiality and respect for persons.

Which point brings us to another key principle of liberal education, "Freedom from indoctrination". This is sometimes traced back to Max Weber's lecture "Science as a Vocation" in 1919. It is here that Weber warns:

> The fate of our times is characterised by rationalisation and intellectualisation and, above all, by the "disenchantment of the world". Precisely the ultimate and most sublime values have retreated from public life either into the transcendental realm of mystic life or into the brotherliness of direct and personal human relations.[17]

The words of Friedrich von Savigny (1799–1861), a pioneer in the sociology of law, are also worth recalling in this regard. He elaborated on the problem of "partisanship" among professors and students in his treatise on the university and proposed a set of initiatives to mitigate the effects. Understanding that the political neutrality of students and professors can hardly be achieved by regulation alone (as Max Weber would later insist), Savigny suggested avoiding external constraints and instead promoting diversity with the aim being to create an environment where partisanship is no longer able to dominate.

[15] Yale University. *The Yale Report of 1828: Liberal Education and College Life.* collegiateway.org.
[16] Brenda Almond. *Means and Ends in Education.* Allen & Unwin (1983), page 90.
[17] Max Weber. *Science as a Vocation* (1919). sociology.sas.upenn.edu.

Yet for many centuries now, "diversity" has fallen out of favour. Alain de Tocqueville even writes in the 18th century, presciently, that the risk in Europe was of education increasingly becoming "a national affair". The national government receives or even takes "the child from the arms of his mother" and turns the child over to "the agents" of the national government, de Tocqueville complains, adding that the result was that, in education, uniformity reigned. Intellectual diversity, like liberty, was disappearing. All of which leads de Tocqueville to express his fear that both Europe and America were moving towards a future of "centralisation" and "despotism".

Concerns like these about educational conformity are very much live political issues in American politics, if rather bypassed by the political consensus in Europe. Joseph Califano, President Jimmy Carter's Health, Education and Welfare Secretary, for example, articulated Tocqueville-style concerns about the centralisation of schooling in response to moves by President Obama's Department of Education to finance a national K-12 curriculum (that is, a curriculum from kindergarten to 12th grade) for English and mathematics. At the time, this new national curriculum for "useful" subjects was designed to work alongside a federally funded national testing system requiring the testing of every public school student across America. Califano wrote that: "Any set of test questions that the federal government prescribed should surely be suspect as a first step toward a national curriculum". As well as warning that, carried to its full extent, "national control of curriculum is a form of national control of ideas".

Today, though, in many countries, such policies have become unremarkable, inevitable even. Even in America, education has become "a national affair" driven by one-size-fits-all centralisation just as it has largely been in Europe ever since the end of the Second World War. The tale told of the National Ministry of Education in France, where it was said that a French education minister could open the programme *d'enseignement obligatoire* – and know exactly what every pupil in the country was learning that day, has become the norm, the reference.

And yet, liberal ideas have not so easily been consigned to history. We should note that "even the French" have had second thoughts about overcentralised control of education.

Jean-Michel Blanquer, the longest-serving education minister of the Fifth French Republic, announced soon after being appointed in 2017, a determination to "put reform of primary education at the centre of their policy to combat school failure and improve life chances".

In the age of Google and internet entrepreneurs, Blanquer was concerned that overcentralisation in schools was discouraging autonomy and experimentation, and reducing the space for individual programmes of learning. He noted how, by contrast, the Finnish system had no league tables, no inspections or exams below the age of 16. He admired the way in which the Finns allowed teachers to have more of a say in what subjects are studied and encouraged a collaborative approach to learning, including projects in which students of different ages worked together.

Blanquer inevitably failed to make much progress in reforming France's "Napoleonic" education system, although at least one radical example of this different approach to education was implemented in a Paris-based 42 coding school, as part of a project by the billionaire entrepreneur Xavier Niel.

Here, there were to be no lectures nor even teachers. Instead, the students (drawn from all walks of life) were to work on collaborative projects that they graded between them. As well as studying technology, students were to develop the "soft skills" of negotiation, cooperation and collaboration – skills that businesses often complain conventional schooling neglects. The bottom line, as it were, is that some 80% of its students found employment (even before graduation) and all of them, 100% found work by the time they finished.

Understanding education strictly in terms of its market value is to pervert liberal values. Although people like de Tocqueville agree that democracy has a materialistic core, the real message is that a society focussed solely on material well-being is unsustainable.

Instead, the message of liberalism is that an overemphasis on materialism actually presents a serious threat to a society, particularly one focussed on the "pursuit of happiness". Tocqueville himself says that a people whose sole motivation is obtaining or protecting material interests become unable to engage in other activities that spur the creative and critical thinking it takes to further material enjoyment: for imagining something better.

And he goes on to warn that, taken too far, a life of materialism destroys an important component of what it means to be a human being. In time, such a life will suppress the ability to contemplate an existence outside the immediate needs of the body. An excess of materialism leads men to experience life "without discernment and without progress, like brutes", he writes.

If many countries are today sidelining individual choice in favour of centralised approaches, it is worth remembering that as well as the liberal "ideal", there is also a third approach to education that we might call the "individualism to excess" approach. This is the one in which students are not only not working collaboratively, but are set against each other. Of course, elements of this are central to any meritocratic model based on competitive examinations.

Excessive individualism is the problem described in a book called *The Technological Society*, from which Almond quotes a passage. Here, the French philosopher, theologian and sociologist Jacques Ellul writes that television:

> shuts up the individual in an echoing mechanical universe in which he is alone....In a perpetual monologue by was of which he escapes the anguish of silence and the inconvenience of neighbours.

Ellul then goes on to warn that television is "probably the technical instrument which is most destructive of personality and of human relations".

Although the English edition came out in the mid-1960s, Ellul was actually writing these words in the early 1950s. How much more concerned would he have been about the effects on children of life in the age of the internet and social media, and indeed any learning mediated by information technologies?

Today is being transformed by the use of technologies that the classical liberals could never have imagined. In the process, basic skills like reading and writing have changed as students learn to skim and copy text rather than work linearly, let alone generate it themselves from scratch. New artificial intelligence programmes actually carry out the research, even produce drafts for essays, in the process making skills that used to be the epitome of "usefulness" look rather less so.

Ellul's influence has been less than I think he deserved. However, he had one famous, or rather infamous, follower – Ted Kaczynski. Better known as the Unabomber, after the case identifier UNABOM (University and Airline Bomber) that the FBI used before his identity was known, Kaczynski was a social drop-out who lived in a remote cabin and sent letter bombs to public figures he disagreed with. The search for him, running from 1979 to 1996, became the most expensive investigation in the history of the FBI. And Kaczynski's brother, David, has stated that Ellul's book, *The Technological Society* was "Ted's Bible".

Yet, what link could there be between the windy but essentially humanistic account of Ellul and the violent plans of Kaczynski?

The Unabomber

Well, to understand the connection we need to recall a little of the story of this American mathematician who became a domestic terrorist murdering, between 1978 and 1995, three people and injuring 23 others in a nationwide letter bomb campaign.

At its simplest, the link is that Kaczynski, like Ellul, saw himself as involved in a campaign against the effects of ever-advancing modern technology.

Given this, it was not surprising that it later turned out that Kaczynski ran his murderous campaign from a remote cabin without electricity or running water near Lincoln, Montana. Here, the Unabomber lived as a recluse while writing a 35,000-word manifesto opposing industrialisation (as well as what he called "leftism"), and advocating in its place a nature-centred form of anarchism. His manifesto was entitled: "The Industrial Society and Its Future".

Despite being a wanted criminal, Kaczynski seems to have been attracted to publicity and, in 1995, sent a letter to *The New York Times* promising

to "desist from terrorism" but only if either *The Times* of London or *The Washington Post* published his manifesto.

Perhaps unwisely, in terms of setting precedents, the FBI and US Attorney General Janet Reno pushed for the publication of the essay. And so his self-justifying claim that his bombings were an extreme but necessary response to the erosion of human freedom and dignity by modern technologies eventually appeared in the *The Washington Post* in September 1995, giving Kaczynski's opinions a distinguished context that they surely did not deserve.

However, there was one useful consequence perhaps justifying the FBI's stance. Upon reading the essay, Kaczynski's brother, David, thought that he recognised the prose style and contacted the FBI with his suspicions. After his arrest in 1996, Kaczynski pleaded guilty to all charges and was sentenced to eight consecutive life terms in prison without the possibility of parole. He died in prison in June 2023.

The link has less to do with "what Kaczynski did", far less what he wrote, and more to do with the education Kaczynski received. There are two things that are worth mentioning. First, if perhaps rather trivially, we might note that Kaczynski was considered something of a mathematics prodigy and was even accelerated a year at school for that reason, a promotion that he complained disrupted his social development. How often are children advanced years like this at school, focussing only on their academic and not on their broader social development?

But a second educational error surely is much more significant. This one came after formal schooling at Harvard University and seems to have been much more disastrous.

It was in his second year of his university course on mathematics that Kaczynski participated – for some 200 hours – in Project MKUltra, a research programme later summed up by the author, Alston Chase, as "purposely brutalising". The Harvard research was led by a psychologist called Henry Murray, who had links to dubious CIA research into methods of mind control.

Project MKUltra had been launched at the height of the Cold War and was supposedly intended to give the US the edge over the Soviet Union in psychological warfare. Later, the mass destruction of documents relating to it meant that the public could never know the full extent of the project, instead making it a rich source of conspiracy theories and speculation.

Nonetheless, what is known is that the research involved 86 institutions, including universities like Harvard, as well as mental hospitals and prisons. Doctors, scientists and academics were all secretly under contract to the intelligence agency.

In consequence, vulnerable people, including students like the young Kaczynski, were among the unwitting subjects of the top-secret experiments. Tests were also conducted on terminal cancer patients, presumably because the experiments were anticipated to have detrimental, and possibly lethal, effects.

Ethical standards and medical safeguarding were often non-existent. According to the 1977 congressional hearing, one project was to "observe the behaviour of unwitting persons being questioned after having been given a drug".[18]

Indeed, one scientist, Dr Frank Olson, fell to his death from a New York hotel window nine days after CIA agents spiked his drink with LSD, provoking a nervous breakdown. But the most high-profile participant in the MKUltra programme was Ted Kaczynski.

As part of the study Kaczynski took part in, students were told that they would debate personal philosophy with a fellow student and were then asked to write essays detailing their personal beliefs and aspirations. So far, so harmless, or so it would seem! However, the catch was that these essays were then given to an anonymous individual whose sole function was to use them to confront and belittle the students' ideas. Murray himself described the method as "vehement, sweeping, and personally abusive", with the content of the essays, obtained deceptively, used all the time as ammunition.

Electrodes monitored the subject's physiological reactions. The encounters were filmed, and subjects' expressions of anger and rage were later played back to them repeatedly. The participants were required to endure this questioning for a period of three years, to the extent that someone was verbally abusing and psychologically humiliating Kaczynski each week.

Horrifying though the research was in so many ways, in 1962, Murray became an emeritus professor and earned the Distinguished Scientific Contribution Award from the American Psychological Association and the Gold Medal Award for lifetime achievement from the American Psychological Foundation.

Rarely have the risks of allowing ends to dictate means been so brutally highlighted.

Project MKUltra is repugnant, deeply unethical and extreme – and yet elements of it are part of "normal" education. Children and young people in schools are encouraged to write not only what they "think" but what they "feel" – and yet sometimes their teachers use their position to ridicule and humiliate the child.

This last danger is explicitly set out by Ivan Illich in his book De-Schooling Society (1971), where he presents schools as authoritarian structures representing the institutionalisation of the values of capitalist society. Illich and Everett Reiner see the hierarchies of age that shape schooling as a form of prejudice to be resisted like any other social prejudice.

With this psychological debate in mind, *Means and Ends* concludes with a look at philosophical theories of character, and in particular, the idea that interference with

[18] "MKUltra: Inside the CIA's Cold War Mind Control Experiment." July 21, 2017. theweek.com.

the child's natural tendencies is the problem and that institutions, like schools, are corrupting.

Almond herself, however, warns that any attempts to "leave all to nature" are misguided. Other things being equal, she writes, they would "leave a void at the centre of the child's development". And worse, since other things are in fact not equal, deschooling would leave other forces, perhaps more malign, free to shape children.

> while the idea of a completely unformed character striking out from no base at all to structure and shape itself is unintelligible, [the] emphasis on autonomy is a reminder that people do have a degree of control over what they become.[19]

[19] Brenda Almond. *Means and Ends in Education.* Allen & Unwin (1983), page 7.

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