Implications of AI for education

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Introduction

The first step in automating any physical operation or mental process is to break it down into competences in the case of skills and bits of information in the case of knowledge. Insofar as it is possible to separate skills from knowledge in human activities, this first step has long been imposed upon nearly all tiers of institutionalised learning today.

In industry, training to the task accompanied automation in the 1970s and '80s when skilled crafts were deconstructed to specific competences in employment before their automation and outsourcing. In education, teaching to targets was universalised following the introduction in 1988 of the academic National Curriculum for schools with its associated standardised tests and exams. These were presented as offering equal opportunities to all but actually assess more or less expensive previously acquired cultural capital expressed largely in levels of literacy. This is not yet clear to all pupils, parents and teachers so that the role of schooling in sifting and sorting pupils is widely misunderstood.

At every level of formal education and training, however, the reduction of qualitative wholes to quantitative parts for individualised assessment turns teaching into instruction and learning into memorisation or drill. Competence-based assessment in FE and the dismantling of most HE courses into explicitly listed learning outcomes has had the same effect as the National Curriculum in schools. Once established, such specification obviates thinking about course content by both teachers and students, the latter being required only to rehearse and memorise it. It is important to realise how nearly complete this reduction of knowledge and skill is to (corresponding terms at a lower level of learning) information and competence, so that automated intelligence can now be applied to assess all learning. This quantitative reduction also facilitates commodification with ranking of numerical scores.

The same applications of new technology have arguably extended to the larger culture as outsourced automated production has contributed to a cornucopia of commodities for mass marketisation. This massification of consumer culture has been complemented by a social recomposition of class that has eroded habitual divisions of labour and knowledge. The new class formation preserves the tripartite form of the old one, largely thought of as a social pyramid. Yet today's increasingly merged middle/working class are sandwiched between a contracting but wealthier globalised employing class above and the growing numbers of precariously employed beneath in a class structure gone pear-shaped.

Under pressure of class polarisation and reformation most students in the working/middle are desperately scrambling up a down-escalator of devalued qualifications to avoid falling into the worthlessly qualified and insecurely employed precariat. Overall social mobility is therefore downward with the celebration of individual exceptions that only prove the rule. Nevertheless, the impossible goal of increasing upward social mobility has been tied to funding for all teachers and institutions in market competition for survival. This article therefore relates this impossible purpose for education to the hype around general automated intelligence which is now being applied at all levels of teaching, learning and its assessment.

Tools or machines?

Algorithmic AI has long been deeply embedded in daily life but the public launch of OpenAI's ChatGPT last year has generated systems that not only perform pre-programmed tasks but also accumulate vast stores of information together with new routines for applying them. Yet it is not inevitable that AI will result in teacherless schools, colleges and universities, although they can more easily be studentless if all activities are online. However, *Marie Celeste* learning centres will only happen if teachers perform no better than AI, but it will not be the consequence of malign intent by artificial consciousnesses. Like industrialists who pursue their idea of workerless factories, these are ends to which automation has been dedicated by those who deploy it. Nor can AIs 'become conscious' and - still less - self-conscious. They are not born into nor grow up in a culture which would make their actions meaningful to them.

Consciousness is fetishised in a culture of competitive individualism with its ideology of misconceived personal 'freedom'. It is therefore forgotten how consciousness emerges, not in some mystical annuniciation but through developing awareness from the behavioural responses to which

most other animals are largely restricted, on to self-awareness, awareness of others and their place in the environment. The use of tools, including language, distances humanity from its environment by focusing consciousness upon its object of attention at the same time as imagining its transformation through labour. There is always a 'tacit awareness', as Mike Cooley called it following Michael Polanyi, that is peripheral to the focused consciousness which implicitly relies upon it.

Turning tools into machines though appropriates human consciousness into the working of the machine and limits imagination. The worker becomes the tool of the machine which is dedicated to the production of a superfluity of commodities. Then the pursuit of profit through the sale of commodities subsumes all other human purposes, destroying society and the environment in the way rogue AIs are presented as doing. By contrast, human-centred technology retains human control in the various relations with technology that were outlined in a typology of what David Guile called 'fusion skills' in the last issue of *PSE*.

Fusion skills, based on the possibilities of such new types of human/machine interaction, are best developed in new relations of education to employment. Paradoxically these can draw upon the ancient form of education as apprenticeship so that students as apprentices have an idea of what they will be expected to do and how they can achieve it - not merely of how much they might get paid for it as a return on the investment in their own human capital! This should also be reinstated as the aim of compulsory schooling leading to graduation at the age of majority to the rights of democratic citizenship. These would include lifelong entitlement to free training and study in or out of employment, not merely, as at present the entitlement to take out a loan that - like student fees and loans - are free at the point of delivery but have to be repaid later.

Entitlement would not necessarily be exercised immediately on graduation from compulsory schooling. This would relax the pressure on school-leavers to apply for university degree courses as the only hope of secure employment. It would free F&HE to develop with trades unions paid higher level apprenticeships to guaranteed employment in collaboration with but not in subordination to employers. Training of itself does not produce jobs but only trainees with qualifications but without employment. Academic courses too need to be vocationalised by returning to the original model of student as apprentice oriented to mastery in disciplines combining practice and theory in expertise.

Instead, we can expect more simulations of vocationalism with 'constructive alignment' of technical and other learning activities for assessment of 'intended learning outcomes' which supposedly relate directly to 'what employers want'. Of course, long-time readers of PSE will recognise this from the struggle to which the journal contributed in Youth Training and FE from the 1980s on when the National Council for Vocational Qualifications even attempted to specify the 'skills' of all occupations in the economy so as to 'deliver' trainees to them. There were then endless problems in aligning the 'range specifications' within which competence was to be demonstrated. As today, this enhances the differences between those colleges, universities and departments within them which try to retain a traditional academic approach to put themselves above a new binary line, even with the contradictory compromise of General National Vocational Qualifications.

Now primarily literary academic assessment is undermined by AI but with new NVQised courses open to other forms of abuse. Other styles of assessment may therefore be expanded, such as increased emphasis on vivas or presentations based on projects often undertaken on placements which are marked more for students' 'presentation skills' than for content. These approaches are labour intensive for staff while collective assessment is notoriously litigious. They may also dis- or advantage particular students, as Bourdieu noted the vivas commonly undertaken in mainland Europe privilege fluent candidates. In all cases, relating to student experience is considered more important than teacher expertise. These different approaches are accentuated in schools with academic A-levels and technical T-levels sorting pupils for one or other route from earlier ages.

Conclusion

Rather than the predictable divergences above, a general approach should encourage research and scholarship at all levels of learning to integrate theoretical knowledge with practical skill through teaching linked to research. AI use would not then be restricted to producing acceptable assignments in an arms race that markers are bound to lose as AI-enabled applications go beyond spell- and grammar-checking to predictive texts suggesting what to write next with references attached. As such aids become ubiquitous, current assumptions about once celebrated 'graduateness' and its connections with professionalism will be further eroded as AI makes it impossible to tell what is real and what is artificially generated. This is already evident in many formerly secure and established professions where AI is widely deployed.

Simply, AI would not need to be used in examinations and assessments if social sorting and sifting were not the prime purpose of education from primary to post-graduate schools. Instead, AI could be used in research and scholarship in the way that it can be applied in employment to augment labour and increase productivity. Educators must educate themselves by daring to reimagine the curriculum at all levels and work with their students to study, experiment and discuss how to achieve this in an assertion of what Jane Lethbridge calls 'democratic professionalism'. If they do not, the learning bureaucracy that has captured all state institutions and their funding will hand down new hoops for teachers to get their students to jump through, simultaneously tightening control in a further extension of failed marketisation. Then, because education has been organised to pursue the impossible goal with which it has been tasked of raising upward social mobility in a society in which most mobility is downward, it is unlikely teachers will avoid the jobs cull already a feature of other so-called 'creative' professions.

However, classrooms will never be completely virtual, especially in earlier years. Teachers will still work with particular groups of students at particular times - but there will be an end to traditional lessons (where school teachers often spend as much time keeping order as they do drilling their charges in syllabus peculiarities), while in F&HE it is impossible to realise the potentialities of AI to develop new forms of 'professionalism', along with human-machine 'fusion skills', save by coordinating with a democratically planned green economy. The political agency is lacking to implement that alternative, which would counter global capitalism run amok nationally and internationally with social mobilisations unparalleled in peacetime. Until it is created, a cultural revolution against consumerism is required, to which education in every sense will be vital.

References

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