

The future of teaching

(or what are we going to do with all those computational machines?)

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Abstract

Teaching is a field of struggle in which ideologies and agendas compete. The crisis in teacher recruitment and retention is made worse by policies fixated on accountability. This paper argues that we need to address what has been termed teachers' time poverty by reconsidering the quality of time teachers experience in their working day. We must understand the way workload and work intensity combine to the detriment of 'quality'. We must also critically review the role played by technology, including emergent AI, in addressing how teachers use their time. Perspectives which prioritise efficiency can only worsen the situation. The paper concludes by restating the importance of intelligent ethical teacher professionalism.

Key words: teaching; time poverty; workload; work intensity; technology; intelligent teacher professionalism

The problem

It appears that, as a society and as a profession, we are perennially gripped with a concern as to the future of teaching. That the task of teaching is so important for societies has been both a blessing and a curse. A blessing because it underscores the important place that education, its institutions and those people who work in them hold for social flourishing. A curse because everyone has a view as to what a teacher is and should do. If we were to attempt a simple characterisation of teaching through history, it is as a field of struggle, due to competing ideologies and agendas which lay claim to what a teacher is and should be.

While there are many historical tropes of the teacher – as heroic saviour, as moral guardian, as loco parentis and so on – it has always been the case that the teacher is always subordinate to prevailing ideas and discourses. As Jones argues, the history of the teacher 'is a suspicious figure that requires continual examination' within apparatus and technology that changes over time.¹ In a period where test-based accountability, teacher-proof curriculum and audit technologies have become the norm, and we are told that there is a crisis attracting and retaining teachers, it is timely to think about the future of teaching that is worth advocating for.

The current crisis is a social problem, fed on the one hand by decades of negative opinions circulating in the media, political game-playing that communicates to teachers that their work is not valued, and that give the impression that the profession does not enjoy the status of others. In a study of teachers' job intentions based on the OECD's 2013 TALIS survey, Qin found that while attrition is a complex phenomenon that varies across countries, the perceived status of teaching within a jurisdiction was a good predictor of teacher turnover intention.² In other words, in countries where teachers perceived their occupation as having a low status, they were more likely to say that they were thinking about quitting teaching in the near future. The impact that this discursive construction of the problem teacher has had on the profession is further exacerbated by the constant policy churn always informed by the aim to hold teachers and school leaders to account for the problematic performance of education systems. This sets up the first paradox of the future of teaching. Systems are both trying to respond to a crisis of teaching attrition and recruitment as best they can, while pursuing policy agendas fixated on accountability measures that invariably make it worse.

In this following provocation, I want to pursue two related arguments. The first is that we need to rethink how we engage with the problem of teachers' work – a shift from fixating on how many hours teachers recall working to meaningfully engaging with the quality of time that a teacher experiences during their working day. Relatedly, I want to probe the resultant interest in technology as the tool to resolve the problem of teachers' time poverty, partly because the way we approach that is within the same system of thought as workload. My argument is that interventions that justify their utility through appealing to time thrift, that is through delivering some kind of time dividend, will never satisfactorily address the problem of teachers' work: at best it only addresses part of the problem, at worst it fails to grapple with the quality of time that a teacher is experiencing.

The crisis in teaching

Many working teachers are dispirited and frustrated with their work and express an intention to leave the profession in the next five years. Globally, the sustainability of teaching as a career is a serious concern in many jurisdictions. Teacher attrition remains a concern as many teachers leave the profession, and many schools in disadvantaged contexts find it difficult to employ and retain staff.³ Increasingly, young people don't see teaching as an attractive career.⁴ A significant number of new teachers leave the profession in the first five years, and many studies find that they left because of their overwhelming workload, a lack of trust and autonomy, misalignment between expected practice and personal beliefs, limited positive and collegial relationships, and the intensely emotional burden of teaching.⁵

I first became interested in teachers' work, and their sense of time, in a project I ran on Australia's NAPLAN (National Assessment Program – Literacy and Numeracy) between 2012 and 2015. As I worked with teachers and leaders to understand the challenges, frustrations and affordances of NAPLAN, it became apparent to me that the frustration that many teachers felt with NAPLAN was that they felt 'out of step with the times', that changes in assessment, practice and school routines were producing a type of pedagogy that they did not recognise or could not admire.⁶ In a subsequent research project I conducted in 2021 for Education International, this problem of teachers' time was repeated across countries and jurisdictions.⁷ While unions reported that their members' conditions had deteriorated, that their status was either declining or not improving, perhaps the most intriguing finding was that the nature of teachers' work appeared to have changed, and more and more teachers were feeling time poor. This is part of the second paradox: that while teachers appear to have a very similar job to preceding generations (there are lessons to plan and give, behaviour to manage, work to assess and so on) there appears that something has changed in the quality of their experience. There is no longer enough time for many teachers to manage their tasks, the demands of their work leaches into their private time and maintaining a work/life balance seems a very difficult proposition.⁸

It is worth thinking again about the quality of time that an individual teacher experiences across the workday: those rhythms and flows, interruptions and stagnations, the effect of work still to be done, and the impact of the 'heavy hours' that we have elsewhere typified as the 'subjective experience of work intensity as an individual feels themselves being pulled in multiple directions at once due to competing and contradictory demands'.⁹ Research we have been doing suggests that it is the intensity of work coupled with the amount to be done that is causing work to be unsustainable.

This crisis of teaching is an example of what sociologists call 'time poverty'.¹⁰ Time poverty explains both the amount of work that is to be done and the complexity and/or difficulty of that work for an individual.¹¹ A survey commissioned by the New South Wales Teacher Federation (NSWTF) in 2017 found that work intensification is a common experience for many teachers and principals, and this impacts job satisfaction and, potentially, effectiveness.¹² In 2019, a survey of 5500 teachers in England found that 85 per cent of participants cited 'excessive' workload as a key concern, and 67 per cent were considering quitting the profession.¹³ Furthermore, there is concern that technological advances and policy changes are contributing to increased teacher and principal workloads.¹⁴

Time poverty is a critical problem for contemporary teachers and teacher unions and associations. The problem of teachers' time can be summarised as consisting of two related phenomena: workload and work intensification. Workload is a measure of how much work is completed in a given period. Work intensification is a measure of how

difficult, rapid, stressful or complex a task, or decision-making, is in a given period. Workload and work intensification may be thought of as two axes of the same problem – that of time poverty. They work together to produce the subjective experience of teaching time. The basic argument is that increased workload or increased work intensity can produce a feeling of being time poor. Time poverty is the relationship between a) the amount of work a teacher does, or perceives that they have to do, and b) the intensity of that work, which may be expressed as the number, complexity or stakes associated with decisions that need to be made over a given time period. An increase in either can leave individuals feeling ‘out of time’, an increase in both workload and intensity makes this feeling of ‘time poverty’ seem almost unbearable. Our argument is that time poverty is becoming a common experience. This plays out in perceptions of an acceleration in job demands and can link to feelings of stress, burnout and dissatisfaction.

While time poverty is a perennial problem that seems to have become prevalent in many professions (law, dentistry, medicine, veterinary science, teaching and so on), and while its causes are complex and multifaceted, it seems to us that teaching is particularly susceptible. While teachers are always also affected by external time pressures, for example those associated with being parents and carers, their work itself involves the layering of tasks and the frequent ‘switching’ between complex domains, each with its own logics, expectations, systems and processes.

The reason this distinction is important is because policy that is attempting to intervene in the problem of teacher attrition and retention tends to see the issue as one of workload. The concept of workload appeals to policymakers because it is easy to measure, even if there are concerns about that measurement. For example, the OECD’s TALIS instrument, commonly used as a comparison of teachers’ work across jurisdictions, aggregates answers to question asking teachers how much work they did in the last week. This recollection can be problematic, especially as it can underestimate the time teachers spend on specific aspect of their work.¹⁵ This misdiagnosis of the problem flows into policy – as seen in the recent NSW policy planning to commercialise lesson planning to produce a time dividend for teachers. Fundamentally, policy that aims to deliver ‘time dividends’ fails to understand teaching as an ethical practice. Generally, tasks that teachers understand as core to their work, that speaks to their sense of their profession remain tasks that teachers want to do. What struck the research team when analysing data from the use of an app that recorded time use in 30-minute intervals was the way that participants started with a positive mindset towards their day, but many ended the day less satisfied with what they were able to achieve: ‘Those who recorded “higher” levels of dissatisfaction with their workload and who felt rushed were asked to qualify factors that impacted this experience. Participants identified three common factors in response. These were managing student needs/behaviour, communicating with parents/carers and the amount of work needed to be covered in lessons’.¹⁶

What emerges is not a problem of workload per se, but a problem of the intensity of work combined with its relentlessness. On average, participants reported that they had three hours of work that needed to be done before their next working day, exacerbating the ‘heavy hours’ they were already experiencing. One of the things that stood out in the research was the heavy load that technology could lay on teachers. In the example above, the ubiquity of email and the use of technology to provide frequent and regular updates to parents on children’s progress were examples of new pressures. It was not that teachers suddenly found themselves having to communicate with parents; it was rather that the scale, frequency and content of those exchanges added to the intensity of the working day.

Time-saving devices and the problem of technology

With that in mind, it is timely to point to an underlying issue. There is an increasing belief that the problem of teachers’ work is one of efficiency and that technology can resolve the challenges that teachers face. This is exacerbated by the emergence of generative AI, the development of intelligent tutoring systems (ITS), but is also due to heavy investment in the creation of new data infrastructures across Australia. This has led some to wonder what the place of teaching is within a technological moment where machines appear to do many things which teachers have historically delivered, only with greater precision, speed and improved student engagement. The future of teaching lies within a social model that is essentially computational, and some have suggested that we may not need teachers in the future because of advances in gamification, learning personalisation and generative AI. From the outset I would like to say that part of the reason that this replacement narrative is even possible is because of the narrow way we have allowed teaching to be situated in our thinking: as essentially a widget in an input-output equation expressed in the language of ‘learning gain’, ‘value add’ and ‘growth scores’.

One of the policy dangers confronting us is the ease with which technology becomes seen as the solution to the problem of teachers’ work. Technology has become a critical problem for teaching because we don’t think about it very well. Further, technology is always both material and discursive, and these characteristics shape its development and use – which technology then intervenes in. In other words, there is a reciprocal relationship between technology and the culture that permeates education. For example, textbooks were created to fill a particular need caused by difficulties with managing emerging school systems. In time they came to create pedagogic cultures and practices.

Technology is often framed in technical discourse which limits discussion to its effectiveness and prioritises efficiency in a given circumstance. If technology is viewed

in instrumental terms, its value and meaning are essentially constrained by what it does and how this activity provides a solution to some pre-existing need. In the context of education, these arguments are usually framed in terms of efficiencies, and extend to the solving of problems such as time, speed and functionality. If digital technology improves the efficiency of learning processes, that in and of itself is necessarily a moral virtue. A more useful, and I would argue necessary, way of thinking is to consider technology as a cultural support always co-constitutive of those who use it. The French philosopher, Bernard Stiegler, argued it is an ongoing problem that we only see technology as tools or utilities. Stiegler argues for ‘the need, today, to forge another relation to technics, one that rethinks the bond originally formed by, and between, humanity, technics, language’.¹⁷ Technology is always co-constitutive of humanity itself:

Technology carries with it memories of the past – not only of the individual past, but of the past generations. In this sense, it can be said that the ‘who’ (the human being) invents technology, but at the same time it is invented (‘instructed’) by it, by the memory of past experiences that technology carries. This is the sense of the mutual co-constitution of the ‘who’ and the ‘what’, of technology and the human.¹⁸

In *Disorientation*, however, Stiegler argues that the industrialisation of technology during the 20th century has created a situation where culture is no longer keeping up with, and therefore, renewing, technics.¹⁹ Cultures are becoming distorted or disoriented by the technology at hand: ‘Contemporary disorientation is the experience of incapacity to achieve epochal redoubling. It is linked to speed, to the industrialisation of memory resulting from the struggle for speed, and to the specifics of the technologies deployed in that struggle’.²⁰ The most obvious example of this is the rate of innovation. ChatGPT is already old news in technology terms, yet institutions such as universities and schools are still trying to decide what it means for their practices, how to best approach or regulate it, what it means for pedagogy and assessment and so on. Culture is lagging behind innovation rather than informing it.

To return to the problem of teachers’ work and their seemingly constant experience of time poverty, it is clear that technology is being framed as a solution. The hope is that technology will provide ‘time dividends’ to teachers, allowing them to devote more time to those aspects of their job that require a human touch. However, the concern is that the logic of ‘time dividends’ assumes that the overriding purpose of the education system in general, and teaching in particular, is about efficiency and optimisation. The danger is that within a system that has raised the value of efficiency to the status of an ontological good, or at least sees it as the pinnacle of system success and achievement, the drive inevitably corrupts the initial purpose. In other words, the desire for efficiency overrides the idea that what technology aspires to do is to meaningfully contribute to cultural change in teaching: to assist in creating a teaching environment that people

want to remain in. At its worst, technology replaces aspects of their work that teachers understand as part of their ethical commitment to social flourishing.

And it is not that there is no precedent for this. Technology has long been seen as a tool to replace aspects of teachers' work, to produce a time dividend. In the early part of the 20th century there was great interest in the possibility of teaching machines to assist teachers. A teaching machine is 'an automatic or self-controlling device that (a) presents a unit of information, (b) provides some means for the learner to respond to the information, and (c) provides feedback about the correctness of the learner's responses'.²¹ Perhaps most well-known is B.F. Skinner's device which used the principles of operant conditioning to try to condition student motivation. However, the earliest patented teaching machine was developed by Sidney Pressey in 1928. Pressey's teaching machine – the 'machine for intelligence tests' – was predicated on behavioural psychology and a view that education must be both efficient and precise. Most telling is what Pressey wrote in his 1933 book *Psychology and the New Education*.

There must be an 'industrial revolution' in education, in which educational science and the ingenuity of educational technology combine to modernize the grossly inefficient and clumsy procedures of conventional education. Work in the schools of the future will be marvellously though simply organized, so as to adjust almost automatically to individual differences and the characteristics of the learning process ... for the freeing of teacher and pupil from educational drudgery and incompetence.²²

The key logics here are individualism, efficiency and the 'freeing' of teachers and pupils from education drudgery. Of course, this thinking hides the work that has to go into the production of inputs for these types of machines. Schools have invested in LMS (learning management systems) and SMS, they are intrigued (and probably slightly horrified) by the promise of facial recognition software to solve the drudgery of calling the roll in every class. These examples of technologies found in schools exist because the promise to produce time dividends that accumulate over the week appears to solve the problem commonly discussed: that of teacher workload. The German sociologist of social acceleration, Hartmunt Rosa, famously uses the example of the traffic jam to explain the problem with this thinking:

Slowdown and stoppage are appearing in modern society ever more frequently and in increasingly severer forms as unintended consequences of acceleration processes. Dysfunctional deceleration phenomena and pathological forms of slowdown belong here. Without a doubt, the most well-known example of dysfunctional deceleration is the traffic jam: for instance, for several years the average speed of traffic in American urban centers has been sinking as a result of the continuous rise in traffic levels.²³

As outlined above, however, the problem is more complex than simply how much work teachers have to do. It is the intensity with which each moment is experienced, how dysfunctional deceleration or ‘brakes’ that interrupt the flow of a day impact a teacher’s satisfaction or sense of accomplishment, the physical and psychological effects of the layering of tasks and switching between domains, and why technology that must be managed and the cultural implications of that management rarely has the effect desired. As Rosa argues, this then becomes the third paradox. Technology that is aiming to produce time dividends is likely to do little to resolve the problem of work intensification. In fact, if the history of email tells us anything, it will probably add to it.

What is a technology that teaching deserves?

In 2021 I argued that one response to the declining status of teachers was to invest in what I called ‘intelligent professionalism’. Intelligent professionalism is:

... a professionalism that recognises the unique skills and expertise that educational professionals have that can be brought to bear within education systems. This has to be a shift away from ‘responsibilisation’ to more meaningful forms of educational autonomy. This requires time, and for education systems to invest in time for their workforce. Professionalism that delivers forms of autonomy that (a) requires educators to devote their time to non-educational endeavours (such as those associated with running a business), and/or (b) is associated with greater workload, increased stress, and the withdrawal of central resources and support will diminish the quality of education that can be delivered.²⁴

The ethic of intelligent professionalism is that teachers, school leaders and their representatives should always be insiders in the various processes and mechanisms that systems argue are improving education and must be a collective, rather than a responsibilising, endeavour. I think this is also an interesting way to turn to the problem of teachers’ work and the promise of technology. These crystallise into three provocations:

1. What is the work that teachers deserve? How might we better understand the ‘heavy hours’ of teaching, and move beyond a naïve accounting of workload to arrive at a clearer understanding of what has changed for teachers, and what might be done? What would our interventions to make work more sustainable look like if we better understood what parts of their work teachers saw as central to their professional duties, and what they saw as unnecessary, imposed and dysfunctional? For too long the ethical commitments of teachers to their profession have been ignored or taken for granted, and if these are the things that give the teacher their satisfaction, it may be that this explains some of what is changing for teachers.

2. What is the culture of teaching that should be nourished in order to have a professional voice in their work at the local level? How can that culture evolve or be prepared in order to respond to both social and technological challenges? One effect of top-down accountability and policy reforms is a loss of the autonomy that teachers have previously felt they had. How might a systemic culture of collaboration, of shared policy creation and responsibility for the profession look? And how might this go some way to raising the status of the teaching profession?
3. What is a technology that teachers deserve? The answer to this question cannot be just about time dividends and efficiencies. It has to be about how any technological intervention, whether a commercial lesson plan, an LMS or an AI assessment platform, works to reprofessionalise teachers. How is it that they help to augment the ethical commitments that teachers have to their profession, to the communities and to their students?

These are just some of the questions that could be useful in thinking the future of teaching again. The idea of ethical time, of ethical commitment and creating systems that work with these in mind when engaging with teaching is a simple yet thus far unexplored approach to the problem of teachers' work and how we might respond to the experience of the heavy hours that seem to be crushing so many.

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Notes

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