Chapter 2
The Problem with Universities Today

Abstract Managerialism creates burdens for academics with no evidence for its benefit. Business imperatives override educational. There is needless competition between universities. Research imperatives override education. Global inequalities in educational need are ignored, universities have not kept up with the way young people gain information and initiatives to reduce the environmental impact of higher education are 'tinkering' rather than the required total re-thinking of higher education.

Keywords Academic · Universities · Managerialism · Global inequalities · Collaboration · Environmental sustainability

The first section identifies some of the key problems associated with the universities of today, from the perspective of the academic. After all it is the academic staff, the teachers and researchers, who are the people without whom the university cannot function. Universities contain so many excellent and committed academics, creating the next generation of educated members of society and performing wonderful research to underpin our future, that I do not want this to sound too negative and I do want to pay my respects to the excellence that does exist in universities at all levels. However identification and dissection of the problem is the first step in finding solutions.

I have started with managerialism, as this is what drives the unhappiness of so many academics. The chapter continues with the issues of industrialisation and commercialisation of universities—of course these are bound up with managerialism as the sector regards itself as an industry and industries have managers. Then follows a digression to discuss the way in which universities, initially created to teach, have evolved a hierarchy which places research above teaching, and in the process downgrades its core teaching business. Tied up with commercialisation is the problem created by the lure of fees from international students, cruelly exposed by the Covid-19 pandemic which at the time of writing has reduced global travel to the extent that it has put many university academics out of work. Before Covid-19, the focus on international students had, perversely, ignored the real global inequalities in access to education and had skewed educational priorities within the countries to which international students come. This leads on to a discussion of how universities have not kept up with changes in the way that young people learn, and finally how

R. F. Heller, *The Distributed University for Sustainable Higher Education*, SpringerBriefs in Education, https://doi.org/10.1007/978-981-16-6506-6_2

they have ignored the massive and growing need for environmental sustainability. This chapter is really to set the scene for the following chapter on solutions—which I propose for each of the problems identified.

2.1 Managerialism Creates Burdens for Academics with No Evidence of Benefit

My exposure to the issue of the increasing role of the manager in university structures started at the University of Newcastle in Australia. As Professor of Community Medicine, I held a large capacity building grant from the Rockefeller Foundation for many years. Initially, I was allowed to administer the funds, use them to work out the spread of academic and support staff required to meet our obligations under the grant, and advertise, interview and appoint the relevant people. This was done in accordance with University processes, but in the context of the needs of the grant and based on the internal processes within our group. Since this was a capacity building programme, the development and delivery of courses was fundamental to the work, and we were able to decide on the need for, and methods to, adapt the courses. We developed a completely new adaptation to a distance learning format, and we could add and subtract courses as the breadth of the programme grew. The programme was aimed at developing countries, and travel was an essential component. We were also able to book our own travel, using a self-selected travel agent (in the days when these existed) with whom we developed a close working relationship and who knew and was able to respond to our needs.

Over time, the independence that we had experienced was eroded, the grant was subsumed into the general funds of the University and appointments were made by the University. The carrot held out was that if we lost the grant, the funds for the salaries would be underwritten, at least for the length of the contract and we would have security. However, we lost the ability to respond to the direct needs of the grant, and had the extra burden of the paperwork and discussions and meetings required by the University in seeking approvals at each step. We also lost the ability to tailor our travel requirements to our needs—for no obvious benefit. These examples of managers replacing individual academic independence would seem trivial in comparison with examples of managerial oversight at which any university academic could point today. However they might serve as an illustration of a turning point in academia.

The Oxford English Dictionary defines managerialism as "*belief in or reliance on the use of professional managers in administering or planning an activity*". The word 'belief' in this definition is indicative of the fact that universities have adopted managerialism in the absence of evidence. Deem (1998) defines 'new managerialism' as "*the adoption by public sector organisations of organisational forms, technologies, management practices and values more commonly found in the private business sector*." She goes on to equate new managerialism with the 'hard' form of managerialism which involves rewards and punishments for those who can't be trusted, and suggests that this is a masculine approach as opposed to the more feminist collegiality or 'soft' management approach. The issue of trust is key here—and I will be making the case later on that trust in academics is the alternative to managerialism which we need to explore. Deem and Brehony (2005) call 'new managerialism' an ideology "*to serve the interests of manager academics and help cement relations of power and dominance, even in contexts like universities which were not traditionally associated with the dominance of management*".

Some history of how managerialism developed is also helpful to understand the issue. Davies (2003) identifies that "*New managerialism, which is also referred to as neo-liberalism in the UK and total quality management in the USA, is a system of government of individuals invented during the Thatcher and Reagan years. It may well involve the most significant shift in the discursive construction of professional practice and professional responsibility that any of us will ever experience. It is characterised by the removal of the locus of power from the knowledge of practising professionals to auditors, policy-makers and statisticians, none of whom need know anything about the profession in question (Rose* 1999*). Neo-liberalism is characterised by Thatcher's 'death of society' and the rise of 'individuals' who are in need of management, surveillance and control.*" One of the key aspects of managerialism is the notion that there are generic skills that a manager has that can be applied in any organisation.

Managerialism, which was designed to improve performance in public services, has been adopted uncritically by universities. I can find no evidence of the benefit of this approach, nor even of any attempts to evaluate its benefit. As Shepherd suggests (2018), even its theoretical construct is poorly defined. Shepherd also reports a survey of a number of senior university managers which shows that they "*appear to have fully accepted the idea that university management is both necessary and beneficial*"—at least managers think that management is important! Aspromourgos (2012) suggests that there is no economic case for the managerial approach "*a quality university product, of research plus teaching plus service, cannot be reduced to key performance indicators, and therefore its provision cannot be ensured merely by recourse to more or less explicit individual contracts….Not only are managerialism and quasi-competition not substitutes for traditional quality assurance grounded in professional ethics, they serve to undermine it*".

McKenna (2018) refers to the changes associated with managerialism as 'bureaucratic bloat' and says: "*The issue is that introducing significant, expensive administrative structures too often comes at the cost of the pursuit and development of knowledge…The blame for this bloat of bureaucracy doesn't only rest with executive administrators. Academics have ceded the academic project to the empty rhetoric of efficiency.*" As Graeber in Bullshit Jobs laments (2019), this has led to an explosion of jobs for managers. Over time this growth has outstripped the growth of academic jobs in universities.

Having created new jobs in management, the people holding the jobs have to find work to do. However, this involves not only the managers themselves, but the academics—more forms to fill and meetings to attend. As infrastructure jobs are reduced over time it is the academics who have to do all this work, adding to or replacing their academic workload. Orr and Orr (2016) give some delightful examples of the expansion of tasks given to the academics under what they define as '*managerialism, metrics and bureaucratisation (MMB)'*. The figures, reproduced from their paper (with permission) compare the tasks under MMB (on the left) compared without MMB (on the right) in authorising travel and creating an exam (Figs. 2.1 and 2.2).

Having put managers at the top of the university hierarchy, the academics find themselves undervalued by all levels of university administration. If a low level member of the research administration demands some paperwork from the academic, this becomes a requirement to be met, not questioned, despite any doubts from the academic. Timetabling becomes a task for the academic, not the manager, despite this taking time and energy away from teaching and research.

As well as adding to the academics' workload and taking them away from teaching and research. The academics suffer from lack of control over their own activities. Control is exerted by others who are neither expert in their field nor have experience

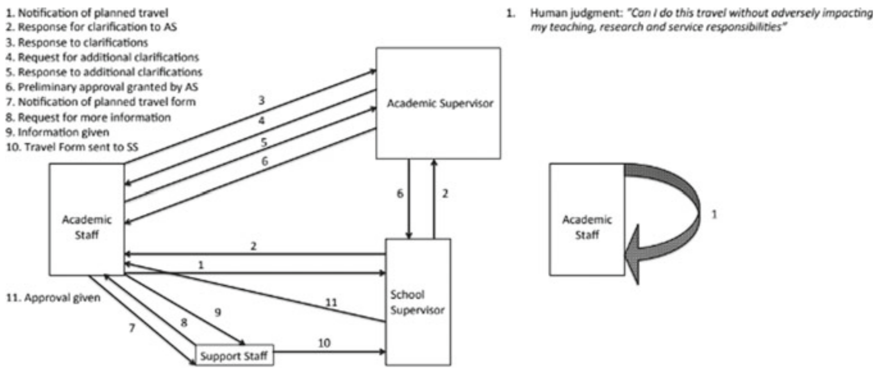

Fig. 2.1 Numbers of emails sent in the process travel authorisation outside the semester

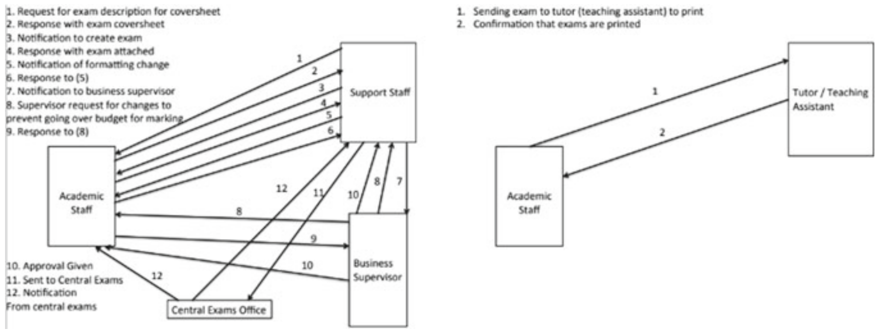

Fig. 2.2 Numbers of emails sent in the process of the creation of an exam

in the provision of education or conduct of research. Locus of control is a psychological concept—the lack of which has been identified to create stress and anxiety. As summarised by Whitehead and colleagues (2016) "*Observational evidence showed that employees who experienced the twin pressures of* high job demands *but* low control *in their work were at higher risk of psychosocial stress, which has been linked to physical conditions such as coronary heart disease (CHD)*". These twin pressures are just what so many of today's academics face—largely as a result of managerialism.

A number of authors tell us that managerialism a form of bullying. David West has said in a provocative piece in the Sydney Morning Herald (2015) "*The increasing incidence of bullying over the last few decades coincides with the relentless rise of managerialism.…Why does the current model of managerialism almost inevitably give rise to cases of bullying? University reforms of the last decades have been driven by neoliberal assumptions or what has misleadingly been called economic rationalism: the primacy of economic principles of productivity and efficiency; the central role of management and incentives.*"

Skinner and colleagues in a study of bullying and harassment in Australian universities (Skinner et al. 2015) says: "*All these findings point to organisational culture, whether driven from within or from without, as important in understanding harassment and bullying in the workplace.…These health impacts would then be expected to result in increased absenteeism, lower job satisfaction and lower morale. These have organisation-related effects, with workplace bullying damaging productivity and reputation. The diverse range of costs organisations incur can include lost productivity, the cost of replacement workers when victims are absent, recruitment costs resulting from higher staff turnover, the costs of processing formal complaints and lost business due to reputation loss*".

Salin (2003) proposed a model to explain workplace bullying with three components: "*enabling structures or necessary antecedents (e.g. perceived power imbalances, low perceived costs, and dissatisfaction and frustration), motivating structures or incentives (e.g. internal competition, reward systems and expected benefits), and precipitating processes or triggering circumstances (e.g. downsizing and restructuring, organizational changes, changes in the composition of the work group).*" Each of these might be relevant to the university setting.

Keashly and Neuman (2015) blame the organisation's workplace competitive culture with leadership that does not tolerate nonconformity for breeding bullying and hostile behaviour at work, and conclude that "*These are conditions that appear contrary to the academy's espoused notions of collegiality and civility, grounded in the "sacred" values of academic freedom and autonomy.*"

I am sure that university managers do not see themselves as bullies, and may themselves feel hostage to the managerial approach. Some of the blame comes from outside the individual universities themselves. Various countries have imposed research assessment exercises where universities are graded, and ranked, according to their research output—which then has an influence on funding to the university. As well as causing the university to take a more authoritarian management style, this promotes competition between and within universities.

Burnes et al. (2014) succinctly describe the change in power and control within modern universities with the observation that "*successive governments cutting universities' funding and compelling them to act more like business enterprises than educational institutions. In turn, vice-chancellors have become more similar to powerful chief executives, collegial forms of control have been significantly reduced and academic staff increasingly work in an environment in which they are told what to teach, how to teach, what research to conduct and where to publish.*"

Some commentators are very hard on the senior university management. Ericson et al. (2020) performed a large survey of UK academics and found a mean satisfaction score of only 10%. Their further analysis of drivers for dissatisfaction in this population "*revealed seven major themes: the dominance and brutality of metrics; excessive workload; governance and accountability; perpetual change; vanity projects; the silenced academic; work and mental health*" The authors conclude that "*Managerial oversight of academic work has reached a critical tipping point. Extensive auditing of research output by means of performance management assessment regimes motivated by a New Public Management mentality has damaged individual scholarship and threatened academic freedom*" and they quote Craig et al. (2014) who "*characterise university senior management regimes as supporting courts of conformers and colluders who are selfish, ambitious and openly supportive of toxic tyrants where universities, bedevilled by audit culture, are characterised as psychotic.*" Support for this harsh assessment of university culture is also offered by Halffman and Radder (2015), who observe that "*the university has been occupied by the many-headed Wolf of management (which has) colonised academia with a mercenary army of professional administrators…Management has proclaimed academics the enemy within: academics cannot be trusted, and so have to be tested and monitored, under the permanent threat of reorganisation, termination and dismissal.*"

The key problem seems to be that universities have adopted a management style used in much of the public and private sectors without evidence of its effectiveness or recognition of the special circumstances of academia. Compounding this, most university managers do not actually have management training.

This is not just an internal matter for how universities work and treat their staff. It is the senior managers, perhaps driven on by or at least in acquiescence from the university governing bodies or councils, who have developed the competitive business models that I also identify as part of the problem in the next few sections.

2.2 Business Imperatives Override Educational Imperatives

At the University of Newcastle in New South Wales, Australia, where I spent 17 very happy and productive years, a new Vice Chancellor (head person in the administrative chain of the UK style university) was appointed. His deputy held an informal meeting to introduce him to some of the senior academic staff. When my turn came to be introduced—"This is Dick Heller—he breaks all the rules of the

University, but we don't mind because he brings in a lot of money". I was not sure of which part of the description I should be most proud.

Underpinning the way that third generation universities developed, universities have become businesses. The driver is the perception that this is in order to survive financially, although in reality it reflects a perception that universities have to become 'modern' and reflect other trends in society. The managerialism and competition we have been discussing need to be seen in this context—each of which are requirements of a business ethos.

Kellerman puts the issue nicely (Kellermann 2011) "*Whereas the business world counts its output by surpluses and deficits in statistics of money, the university system sees its results in scientific findings, publications and reputation.*" He compares the "*university as a business*" with the "*university of the mind*", and reflects on the tendency of contemporary society to turn as many things as possible into commodities and concludes: "*There is no doubt: In a money society the university also needs money like every citizen. But it definitely makes a difference if the primary purpose of an organisation is to make money profit as in the case of commercial business or if it is to make profit in knowledge as the authentic university.*"

This brings us back to the wider purpose of the university, as Scott identifies (2015): "*…we seem to be increasingly losing our sense of public responsibility and wider social purpose*".

One consequence is that financially unrewarding parts of university activities are at risk of being sacrificed in favour of those that create income.

The Los Angeles Times (Hiltzik 2016) regrets that "*Students already are losing out. They're not only saddled with an increasing share of the direct costs of their education, but are offered a narrower curriculum as universities cut back on supposedly unprofitable humanities and social science courses in favor of science, engineering and technology programs expected to attract profitable grants and offer the prospects of great riches from patentable inventions.…What's really at stake in the corporatization of academia is the traditional role the university as a repository of culture and training ground for open inquiry.*" The article quotes Michael Meranze (https://utotherescue.blogspot.com) "*The obvious risk is that academic research gets done to advance the interests of outside corporations, rather than guided by the logic of the university's mission.*"

There is a great deal of sympathy for the university which has to survive—as Scott (2015) admits "*It would be naive to pretend it will be easy to reclaim that sense of public responsibility. The pressures on universities, and especially their leaders, to embrace corporate values and adopt quasi-business strategies are enormous.*"

But where is the pressure to turn things around? Academics have lost power within the institution, and are fearful about stepping out of line especially as tenured posts with their job security are less common, and the managerialism previously discussed creates penalties and rewards. A senior academic at Murdoch University in Western Australia complained publicly that the University was lowering its academic standards for fee paying overseas students. He was censured, and sued, by the University for bringing it into disrepute, and other Australian universities were concerned that this could hurt their ability to attract overseas students—and the money they bring in (Zaglas 2019). However, at least in Australia, academics are trying to fight back. An open letter is described in this article in the Conversation 'Universities are not corporations': 600 Australian academics call for change to uni governance structures (Pelizzon et al. 2020), which identifies the dangers of the corporatisation of the university and suggests a change to a more democratic and horizontal management structure.

As governments try to save costs, in many countries they have demanded that a larger portion of university costs should be bourne by the students. In both the UK and Australia for example governments changed from free provision of university education to demanding student fees—with increases over time to be offset by student loans that could be repaid once the graduates earn enough. In the United States student fees are much higher in private universities, but students at public universities still have to pay fees. In Scandinavia, universities are funded by the government rather than asking for contributions from students. Of course these decisions by governments reflect larger political agendas, but requiring that students pay fees helps to create a scenario where universities adopt a business stance and compete for consumers, rather than cooperate with each other.

This brings me to discuss the overseas student 'market' for the fees they attract. We will discuss this in the context of global inequalities in educational opportunity in a later chapter, but in many countries now overseas student fees account for a large proportion of university finances. In Australia, overseas students became the third largest 'export' earners—behind iron ore and coal mining. Again this creates the imperative to compete and to adopt a business mentality.

Here is a media release from Universities Australia—'The voice of Australian Universities' (International students inject $32 billion a year into Australia's economy—boosting Aussie jobs and wages 2018) headed: International students injected $31.9 billion into Australia's economy last financial year, directly boosting Australian jobs and wages—including in regional Australia.

> The latest Australian Bureau of Statistics figures – released today – confirm international education income grew by $3.8 billion in the financial year to June 2018 to reach $31.9 billion… Universities Australia Deputy Chief Executive Anne-Marie Lansdown said a record 548,000 international students were now studying in Australia, with the majority enrolled at universities. "Our world-class universities attract students from all over the globe, bringing vast benefits to Australians and the nation," Ms Lansdown said. "And the buck doesn't stop with us – that $32 billion flows on into the entire Australian economy, generating jobs, supporting wages, and lifting the living standards of Australians." "International education is a modern Australian success story – built from the ground up over six decades to become the nation's third-largest export and the envy of the world."

The business approach determines that education now becomes a commodity to be bought and sold. As Kellerman says: "*Commodities require markets for selling and buying. In order to be able to sell and to buy something, it must be produced. The purpose of production is no longer primarily to meet the diversity of human needs but to make money…the university is no longer an institution for young people to study in order to broaden and deepen their knowledge or for qualified people to undertake research or for teachers to educate all kinds of interested people. Instead studying,* *researching and teaching at the university are becoming instruments for making money. This reduction of purposes and functions of the university has consequences for the people involved and for the results as well. Initially intrinsically motivated persons are now focused on obtaining a qualification or even on getting only a certification, a label, in order to earn money at a later stage.*"

There is little debate about the impact on the higher education sector and broader society of these issues, other than at election time where the debate is curtailed and usually superficial. Should other countries follow the Scandinavian model of public funding for the majority of university costs? What would be the impact on equality of access to higher education from such a model? Are there other possible funding models? Turning universities into businesses has a whole range of consequences for society—beyond the consequences for the universities themselves. Where is this debate being held—other than in various blogs by concerned academics?

The consquence of the business model is the drive to compete, as discussed in this next section.

2.3 Needless Competition Between Universities Leads to Duplication

After Australia, when I arrived at the University of Manchester in the UK, I saw first hand the competitive ethos that had developed between even neighbouring universities. Stimulated by my earlier experience of online education in Newcastle, and following a promise at my interview for the position, I started to develop a new fully online master's course in Public Health. Within a few miles of Manchester, a number of other universities were offering courses in Public Health, and one was also planning to develop an online version. I suggested that the two of us could combine to develop a world class online course building on the strengths and infrastructure of both institutions. But they preferred to compete rather than combine, so we each developed our courses independently, duplicating the work and competing for students. In fact, they outsourced their course development and maintenance to a private commercial organisation, costing them and their students a lot of money, rather than collaborate with us.

Competition is supposed to increase quality, as in theory the better courses will attract more students. There are two things wrong with this in relation to higher education, in addition to the lack of evidence for the idea in the first place. First, and most important, is that competition *between* universities does not improve the population's access to education or research output in relation to the population's needs, it just shifts the load between the different universities. Second, the main metrics to measure and compare universities relate to research output—there being little evidence that research output and teaching excellence are related. The competition game requires measurement to make comparisons—this not only means finding appropriate metrics but also requires an infrastructure to make the measures.

Competition is rife between universities, and I can see that where there is no cap on student numbers, and universities get funding per student, there may be a drive to compete to attract students. For example in recent years both the UK and Australian governments removed the cap on undergraduate student numbers (in Australia the next government re-introduced a cap).

There is also competition to attract staff, and in a further example from my Manchester experience, the Vice Chancellor at the time was fixated on attracting Nobel Prize winners to the staff. The University boasts 25 Nobel Laureates amongst its current and former staff and students, and while some of these were 'home grown' others were bought in, some for only a portion of their time after the prize had been awarded. What does that do for the global research effort? Nothing, as these researchers and their teams would have done the same work elsewhere. Naidoo puts it well (Naidoo 2016) "*The competition fetish also threatens academics' capacity to work towards global well-being. Much research and policy focuses on how universities contribute to the economic and social development of their own countries. But many of the major issues facing humankind – the destruction of the environment, rising inequality and violence across borders – can only be solved by countries and universities working together. In this sense, the question of how higher education contributes to global well-being becomes very important.*"

The high salaries paid to induce high flyers reduces the amount available to the rest of the university, creating resentment along the way. "*The downside is not just an unequal distribution of social opportunities…, but the isolation of many of the fruits of intellectual life in a handful of hard-to-enter institutions. The steeper the distance between elite universities and others, the more that society values elite universities and the less it sees of their benefits. This is the logic of a winner-take-all market…*" Marginson (2006).

Naidoo also states that the competition fetish and may be applied uncritically. She identifies a number of unintended consequences: "*Competition threatens academic work by setting up research excellence frameworks that result in unintended consequences. There is evidence for this: Germany's "Excellence Initiative" has resulted in more stratification, a downgrading of teaching and an additional administrative burden. Such frameworks also militate against "blue skies" research – the sort that is driven by curiosity rather than a production agenda. These frameworks encourage dubious research tactics for maximising citations. They over-emphasise conformity to politically expedient external expectations.*" We will return to the research excellence frameworks later.

Musselin tells us (2018): "*Not only have competition and competitive schemes dramatically developed in the last decades, from competition for students to competition for budgets and competition for professors, but the nature of competition has also evolved, leading to new forms of competition, especially on the segment where this evolution has been the strongest, i.e. research universities. It is argued that competition in higher education is no longer only occurring between individuals and countries, but has become institutional, leading to a multi-level form of competition and transforming universities into competitors. This competition is framed as* *a competition for quality which has become more organized and equipped, and that increasingly relies on impersonal judgment devices.*"

Musselin again: "*Meanwhile, the notion of knowledge economy, which became a buzzword in the 1990s, recast research outcomes as potential goods with economic value and as major drivers of economic development… This is often described as the commodification or economization of higher education, since an economic value is attributed to all and everything, including research and teaching…*" Creating education as a commodity, commodification, has other major consequences—to which we will also return later.

The competition game is one example of how the higher education sector has uncritically adopted emerging societal trends without considering if they are relevant and appropriate to the sector. Australia, with its smallish population, at the last count had 28 Master of Public Health courses in separate higher education institutions. How much duplication of effort has been wasted to develop and maintain all these courses, instead of sharing? How many courses are needed? What areas relevant to public health are missed due to everyone teaching the same thing and competing with each other for the same student body? How many public health graduates are needed? Should we not be taking a population view of needs (a common approach in Public Health) rather than observing needless competition between universities?

Of course it can work both ways, when universities close ranks and collaborate to reduce competition from outside the traditional education sector, such as the private sector. In the UK, the National Health Service attempted to establish its own 'university' to train the health service providers it needed. It faced opposition from the UK higher education sector and was closed down. So the sector can work together to face down external threats, even as it competes internally. There are many other examples of where universities work together to protect the 'brand' at the macro level, to lobby for legislation or funds from governments. It is a shame that this cannot be more effectively transposed across the sphere of teaching and research, and I have some solutions to propose later in the book.

As well as competition between universities as part of the business model, it is also seen within universities. One major example is the competition between education and research, which is the topic of the next section.

2.4 Research Imperatives, Including for Academic Advancement, Override Educational Reward Systems

The University of Manchester was, and is, a prestigious university priding itself on a high reputation and position in global rankings. I discovered that in order to allow the academic staff to focus on research, the Medical School actually contracted out its basic science teaching to another faculty, an early indication of the priority given to research over teaching. Status within the University was very clearly dependent on attracting research grants as evidenced in a number of other ways. Of course this is not restricted to any one university—look at the biographical sketches of staff in many universities and see the boasting of the numbers of millions of dollars earned in research grants. Earlier, while working at the University of Newcastle, I was interviewed for an external research grant, and was asked how I could find the time for research since the Medical School was known for its emphasis on education. Can an academic do both teaching and research? What is the nexus between research and education in the modern university?

As we saw in the section on the history of universities, education was the way that the first generation universities started, and a research function was added later for the second generation. Today, highly research active universities have become the elite of the university world, and within the universities themselves, success in research outcome (defined by grant income and publications) is key to promotion. So how and why did research become the more prestigious end of university activity? My answer has two pretty simple parts—you can get grants for research so it brings in money, and you can measure research outcome (as defined above in terms of grant income and publications—if not in terms of improvements to the community) more easily than educational outcomes. Does society need research or education more? Are there better ways of organising education and research than combining them in institutions and individuals who do both?

It still makes logical sense to me that education should be the 'core business' of the higher education sector. After all, it is not called the 'higher research' sector. So why is the reward system within universities targeted towards the non-core activity? Would a real business create such an inefficient reward system? The story told by those who support the dual role for education and research among the academics themselves and within the universities where they work, is that it is important to incorporate research into teaching and the active researcher will be more up to date than non-researchers. But where is the evidence for that?

Figlio and Schapiro (2017) find in an elite US University that "*…regardless of our measure of teaching quality or our measure of research quality employed, there is no relationship between the teaching quality and research quality of tenured Northwestern faculty…It appears that, at least in the scope of teaching by tenure line Northwestern faculty, the factors that drive teaching excellence and those that determine research excellence appear unrelated*."

Norton and colleagues (2013) concur, reporting a study from Australian and US sectors: "*Better research does not necessarily lead to better teaching. Original empirical analysis conducted for this report investigated the effect of research on teaching. It found that students in high research departments have very similar experiences to students in low-research departments*."

Palali and colleagues (2018) report similar findings from the Netherlands: "*We investigate the relationship between research quality and teaching quality, by comparing students that follow the same course, taught by different teachers. We use publication records of teachers as a measure for research quality. Teaching quality is measured by both student evaluations of the teachers and by final student grades. Having any publications at all or total number of publications does not have a significant effect on student grades. We find that being taught by teachers with high* *quality publications leads to higher grades only for master students. This is not fully reflected in the student evaluations of teachers. Master students do not give higher scores to teachers with high quality of publications, bachelor students give lower scores.*"

Norton again: "*Academics are typically appointed for their subject expertise, with much less attention given to their teaching skills. Most academics have no training in teaching or have taken only short courses. Universities outsource large amounts of teaching to casual staff. Many academics prefer research to teaching.*"

Elsewhere, Norton (2013) states that Australian universities … "*… are all more likely to promote academics to senior positions based on research rather than teaching performance. They are all happy for temporary staff to do much of the teaching…This is a common culture across Australia's universities, whether they score highly in research ratings or not.*"

Encouraging teaching through reward systems, creating more teaching-only roles within universities and separating institutions into research and teaching organisations have all been suggested. Norton et al. (2013) again: "*Teaching-only universities are occasionally proposed as a solution. But this report's findings suggest that removing research would not on its own solve the teaching problem. Departments that research less have not compensated by building specialisation in teaching. They have similar staffing profiles and practices to departments that research more …*" He prefers to increase the number of teaching only academic staff members: "*Universities have long required research qualifications, sought research talent, and promoted their most able researchers. Teaching-focused academics can help lead a university culture shift that will make teaching an equal partner with research.*"

Each year there are various ranking exercises published, for example the Times Higher Education World University Rankings. While teaching is one of the performance indicators, and accounts for 30% of the ranking score, this indicator actually includes the proportion of research students. 60% of the ranking score comes from research and citations of research publications, so the ranking is very heavily weighted towards research.

Bennett et al. (2017) warns in an article 'Teaching only (TA) roles could mark the end of your academic career' that while teaching academic roles have increased recently in Australian universities, "*these roles can be a negative career move for academics.*" University rankings mainly involve some form of a research assessment exercise, with the reward systems for the institution, so "*Higher education needs balanced national and international policy that overcomes the inferior status of teaching in ranking exercises. Without these supports, TA roles present a risk to individual and professional well being and the loss of experienced academics from the sector.*"

Of course as Bennett warns, teachers should not neglect to research their own teaching and "*All higher education teachers need to engage in research within and about their discipline.*"

Not everyone agrees that universities are the best place for research. In 'If you love research, academia may not be for you' Mathews (2018) tells us that "*Dutch figures show just how little time professors get for their own research. It may be* *easier to pursue your intellectual interests outside the university system*". He quotes a report from the Netherlands by the Rathenau Instituut (Koens et al. 2018) "*Those lucky enough to have become full professors – supposedly the light at the end of the tunnel for struggling junior scholars – spend just 17 per cent of their time on their own research. Teaching, research supervision and "management and organisational tasks" were all bigger commitments. Associate and assistant professors fare little better carving out research time for themselves…On average, full professors work 45 per cent longer than their contracted hours – assuming a 38-h contract, as the report does, that means a 55-h working week, or an 11-h working day. Those at the assistant and associate professor level put in an extra 29 per cent on top of their contracted hours. Let's run the numbers on these. If the average full professor is working a 55-h week, and spends 17 per cent of their time on research, they get about 9 h 20 min a week to pursue their own research interests.*"

So, we reward good researchers at the expense of good teachers, but give them so much other work to do that they do not have time to do their research. The system is broke! If the data presented above are generalisable to other settings, this suggest that the managerialism about which I have been complaining is ineffective in creating appropriate division of activities of the academics. Reducing the large administrative load might free up research time.

On the other hand, there is anecdotal evidence of students hardly seeing tenured senior academics during their time at university as teaching is devolved to higher degree students and contract teaching staff. Less teaching allows more time to be spent on research or administration. I realise that in my suggestion to replace managerialism with trust, the onus will be on the academics to divide their time appropriately. Of course a reduction in managerialism will free up the time that academics currently spend on administration, and allow them to get back to teaching.

The UK adopted the Research Assessment Exercise, and later replaced it with the Research Excellence Framework, to reward the institutions that score highly. Large flows of funding follow high scoring institutions. To try to recognise teaching as well, a Teaching Excellence Framework was established. Yet to be fully evaluated, it has been criticised as using flawed metrics and providing very limited incentives to the institutions that score highly.

While there have been a number of attempts to improve teaching and its rewards, Chalmers (2019) concludes that the examples she has identified from universities in "*… the US, UK, Europe and Australia lead to the same conclusion – good teaching remains largely undervalued, poorly recognised and unrewarded, despite significant investment and initiatives from government and funding bodies over three decades. More concerning is that institutions have failed to link the quality of teaching and the quality of student learning and engagement, despite the strong evidence that has consistently demonstrated the relationship*".

In a number of countries, such as the UK and Australia, the research carried out in universities is subsidised by earnings from teaching. This is particularly relevant as a major part of this comes from profits made from overseas student fees. At the time of writing the replacement of overseas students by local students as a result of the Covid-19 pandemic will lead to a loss of income and the inability to keep funding research infrastructure. Unless research costs are fully supported by the research funding agencies, and there is clear separation of funding for each type of activity, teaching will continue to be regarded as a second class activity and research will suffer from being dependent on teaching income.

Again we see the importance and the dangers of the business model, amplified in the sections below on overseas student fee income.

2.5 Local Educational Needs are Ignored for Overseas Student Income

I have previously mentioned my personal experience at the University of Newcastle, Australia of holding a large grant from the Rockefeller Foundation that required us to take students from developing countries to assist with building their research capacity (actually it was that grant that brought me to Australia from London). Although we did spend a great deal of time and energy teaching these students, and travelling to interview them and support them on their return, we did also use the grant to employ more academic staff. We were thus able to open the educational programme to local students. So this was an example of a real benefit to local students from the income from overseas students (whether this is an ethical use of funds given to build capacity in developing countries is another issue).

Today, or at least until today given the disruption caused by the Covid-19 pandemic, there are high proportions of overseas students in many universities in many countries. In Australia the proportion of international students had risen by 2019 to approximately 25% of all university new enrolments, higher than in the UK and much higher than in the USA. This creates a massive financial risk to the future sustainability of the university sector, as has been demonstrated by the Covid-19 pandemic. At the time of writing, universities in Australia, as well as in the UK and probably elsewhere, are laying off staff and are facing an uncertain future due to this sudden income reduction. Elsewhere I discuss the impact on research funding.

Assuming that the 'trade' in overseas students does resume, we need to explore previous concerns about the impact of a high proportion of overseas students. Does it reduce the learning experience of other students, does it lead to the exclusion of local students, or does the income allow for an increase in educational resources (buildings and staff for example) with flow-on for local educational needs.

Do overseas student crowd out local students?

Let's summarise the extent of overseas student involvement in local universities—and I will use Australia as my main point of reference. From 2002 to 2019, there was an almost fourfold increase in overseas student numbers in higher education in Australia (International student enrolments in Australia 1994–2019). This represents around a quarter of all university students, and around 40% of students in the 'Group of Eight' most prestigious universities. The largest number came from China. By

2017, this represented 23% of all operating revenue—over 30% in the Group of Eight.

Babones in his 2019 paper 'The China Student Boom and the Risks it Poses to Australian Universities' (Babones 2019) emphasises the large dependence on overseas students from China. He has explored the situation in seven of the Group of Eight universities, where around half of the overseas students are from China and alerts that "*International comparisons reveal the excessiveness of this China exposure. All seven have higher proportions of international and Chinese students than any university in the entire United States. Indeed, all seven appear to be more dependent on fee-paying Chinese students than just about any other universities in the English-speaking world.*" He concludes: "*Australia's universities are taking a multi-billion dollar gamble with taxpayer money to pursue a high-risk, high-reward international growth strategy that may ultimately prove incompatible with their public service mission. Their revenues have boomed as they enrol record numbers of international students, particularly from China. As long as their bets on the international student market pay off, the universities' gamble will look like a success. If their bets go sour, taxpayers may be called on to help pick up the tab.*" As overseas student numbers plummet in response to the Covid-19 pandemic, his fears have come to pass.

Birrell (2019) points out that among the Group of Eight universities (Go8), in the 5 years to 2017, domestic enrolments were static and all the increase was in overseas student numbers "*Clearly, the Go8 universities preferred to enrol overseas students. In effect, the benefits of the allegedly superior education that these universities offer went to overseas students rather than to local students. This was not because overseas students had superior potential to take advantage of what the Go8 offers. The contrary is the case. The Go8 do not preference high performing overseas students. There are minimal entry barriers to their enrolment other than the ability to pay the huge fees required.*"

There are other indirect financial gains for the population from the large number of overseas student consuming various commodities (housing, food, travel etc.), leading to overseas students representing Australia's third largest export earner, behind iron ore and coal. As Birrell also tells us, this is a direct result of government policy to encourage this trend.

Do overseas students lead to a reduction in educational outcomes or standards?

Foster (2012) has found that "*Adding international or domestic non-English speaking background (NESB) students to a tutorial classroom leads to a reduction in most students' marks, and there is a particularly strong negative association between international NESB student concentrations in tutorial classrooms and the marks of students from English-speaking backgrounds*". Controversially, she also finds: "*the impact on marks of a high percentage of NESB students in a course is positive*" but suggests that this may be due to "*…influences such as downward adjustments to the difficulty of material or grading standards.*" In which case this would compound the problem.

Birrell and Betts (2018) comment that there has been a reduction in teaching standards, partly to accommodate limited preparation and lower language skills of overseas students. In relation to the Group of Eight universities "*Teaching is a second order priority. Students hoping to get the benefits of exposure to top researchers find instead that teaching is regarded as a chore or a distraction by the research stars. Most face-to-face teaching is conducted by non-tenured adjuncts.*"

According to Babones: "*Australian universities routinely compromise admissions standards to accommodate international students. Preparatory programs for students with lower English language test scores function as a paid work-around for international students who do not meet admissions standards. By prominently marketing such alternative pathways, Australian universities are in effect taking actions that reduce their financial risks by increasing their standards risks.*"

Babones further states: "*Much of the growth in international student numbers at the seven focus universities has been directed into business education. The five for which data are available draw more than 40% of their entire business student bodies from overseas; for Melbourne and Sydney universities, the figure is 66.9%.*" Whether this denies local students access to business studies, or actually increases their access since there are now nice buildings and excellent teachers employed from the fee income is not clear and was not studied, but he does conclude that: "*Instead of focusing on providing a high quality education and upskilling Australia's population, the universities sector has become focussed on pushing through as many students as possible in order to maximise fees and profit*".

Of course the universities themselves have a different view on the role of international students, and I have not quoted their side of the story. A press release from the Deputy Chief Executive of Universities Australia in 2018 says (Media Release 2018): "*International education is a modern Australian success story – built from the ground up over six decades to become the nation's third-largest export and the envy of the world.*" The press release does not touch on educational standards, and the university sector will dispute any reduction in standards by overseas students. Following the Covid-19 induced damage to the sector, I think that a press release today might tell a different story.

The theme I am building of the need for a radical re-think of how to provide university education for the future, must include a reduction in reliance on overseas student fees. The next section shows how this, and the underlying problem of the underlying university business model, has a pernicious effect on global educational needs.

2.6 Global Inequalities in Educational Need are Ignored

My experience at both universities of Newcastle and Manchester gave me exposure to issues of the global inequalities in access to education. From Newcastle I travelled extensively across the developing world, and met educators and students in many settings as well as a number of academics and organisations involved in global health research and development. The commitment of all of these people and organisations towards reducing inequalities in access to education was remarkable and empowering.

At the same time, universities were building greater reliance on overseas student fee income. I have a couple of personal examples of how financial gain has hindered global access to education. The first was at the University of Newcastle, when fees for overseas students came in and I argued for low fees for our students from developing countries on our Public Health courses so as to make them more available in low-income settings. I was over ruled by the Vice-Chancellor who said that a low fee would send a signal that the course was low quality and high fees indicated high quality. The other story is from the University of Manchester, where I had set up its first fully online master's degree and managed to keep costs for overseas students affordable so that we could offer this course on Public Health to those who really need it to help their poor populations with major health problems. As soon as I retired, the School accountant doubled the fees for overseas students—as I mentioned in the introduction to this book, it was this experience that led me to develop the Peoples-uni to provide this type of education at low cost.

Of course there is more to it than the financial needs of universities in high income countries. There are global inequalities in access to higher education both within countries and between countries. Despite the observation that access to higher education has increased steadily over recent years, the increase is much greater in high than low-income countries as shown in Fig. 2.3 from a UNESCO report (Policy Paper 2017).

The same UNESCO report (Policy Paper 2017) tells us that the rate of access to higher education among those in the 5 years when access might be expected, following the age of high school completion, varies from less than 1% in the poorest group in the poorest countries to more than 70% in the richest group in the richest countries (Fig. 2.4).

Within a number of countries there are initiatives to widen access to higher education so that it is available to all sectors of society. In a study of 71 countries across all continents, Salmi (2018) found that despite equity of access being an important priority in all countries surveyed, "*only 32% of the countries have defined specific participation targets for any equity group, and only 11% of the countries surveyed have formulated a comprehensive equity strategy. Another 11% have elaborated a specific policy document for one equity group, gender, people with disabilities, or members of indigenous groups.*" Despite 'headline' national priorities, action to widen participation appears to be limited.

But what is the role of the university in helping to reduce inequalities between nations? Is this an appropriate role for the university sector? If so, is global education being offered with the real aim of reducing these inequalities, or rather helping to support their own university sector? I have previously mentioned that the large and continuing grant that my University received from the Rockefeller Foundation arguably helped us as much as the intended recipients—we employed more staff and were able to provide education for more Australians than for overseas students. Although the programme was aimed at building education and research capacity in

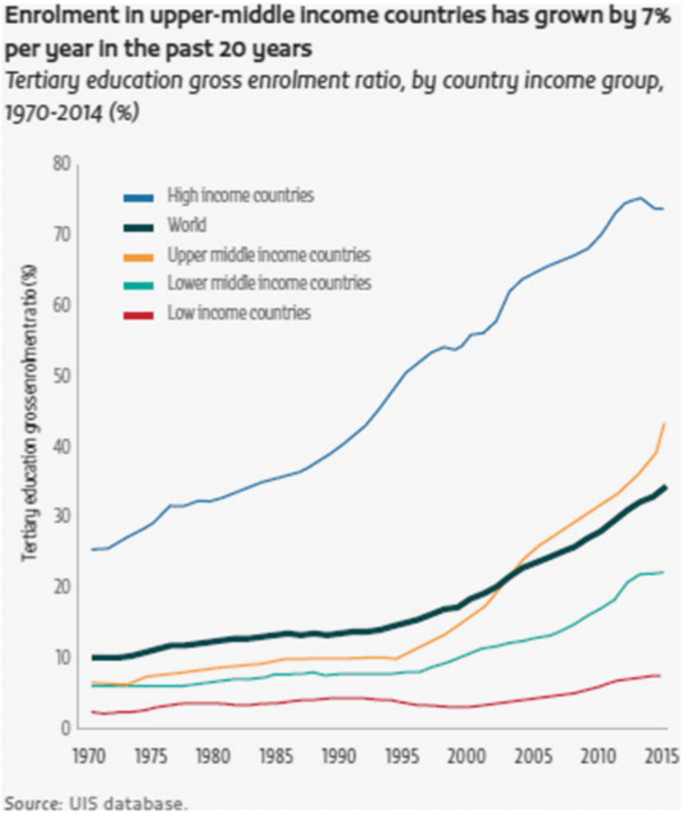

Fig. 2.3 Growth in tertiary education over time by country income group (UNESCO)

developing countries, and has led to long-term teaching and research capacity development, as much capacity was created at our university as in any of the individual target universities in developing countries.

Of course the education sector is not the only one where international aid creates benefit ‘back home’. A study of the Australian overseas aid sector found that one dollar of aid increased Australian exports by more than seven dollars (Otor and Dornan 2017).

We have already discussed the importance to the university sector, and the national economies, at least Australia and the UK, of the fees obtained from overseas students. This has been brought into sharp focus by the Covid-19 pandemic with its travel restrictions which have threatened the viability of a number of universities in Australia which were over-reliant on this income source.

Many western country universities have established campuses in developing countries—and some have become bankrupt due the inappropriateness of the business model. What was the rationale of the establishment of these campuses—financial gain for the university or capacity building in the overseas country?

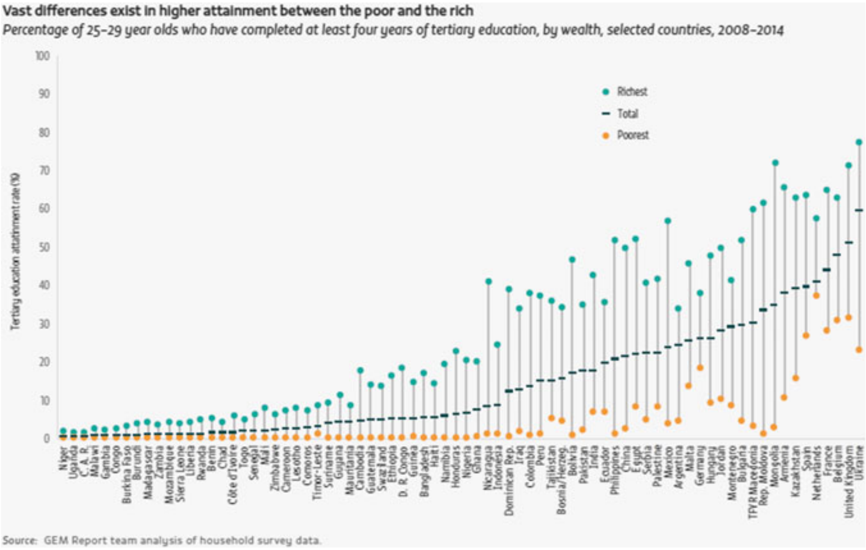

Fig. 2.4 Inequalities in completing higher education within and between countries (UNESCO)

So whose responsibility is it to try to correct the imbalance? We have previously discussed that universities now see their responsibilities primarily as businesses, and secondarily as serving national needs for education. It is not their role to consider global issues of educational requirements, even if many individual academics have that concern. Individual governments should take responsibility for the education of their population, although economic constraints may restrict this ability. No international organisation really has a global oversight, in the way that the World Health Organisation has for global health with a goal '*to ensure that a billion more people have universal health coverage, to protect a billion more people from health emergencies, and provide a further billion people with better health and well-being*'. UNESCO '*seeks to build peace through international cooperation in Education…*' which is much less action oriented. Various non-governmental organisations aim to improve global educational outcomes, particularly for primary school and gender equality in educational access. The Global Partnership for Education https://www.globalpartnership.org/ '*mobilizes investments, both external and domestic, to help governments build stronger education systems, based on data and evidence*' and '*has mobilized more than US$7 billion for education, creating better opportunities for millions of children, their communities and their countries.*' The Sustainable Development Goals include education in SDG4 to '*Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*' and the SDG target 4.3 states: '*By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university*'.

Despite the creation of a global target, there seems to be no body that takes an action oriented approach to reducing global inequalities in higher education.

Hill and Lawton (2018) state that achieving the SDG4 goal "*…will require a monumental reversal of higher education being placed in the service of national goals based on competitive advantage*" and that "*Moral responsibility in tackling inequality is less clear at international level, not only because it would require a heroic level of international coordination, but because it is inconsistent with national policy goals*". Going further, they suggest: "*In spite of far-reaching international teaching partnerships and international cooperation in research, higher education is hard-wired to the pursuit of economic nationalism. For those who believe that growing inequality is a problem worth tackling, this is the opposite of what the world needs from higher education.*"

Marginson (2018) makes a similar point about global research "*In the absence of a global state or regulatory framework, issues of under-production and under-funding of global common goods cannot be fully addressed. Who funds global common goods?*".

There are a number of partnerships between university research groups across the global divide, clearly aimed at boosting local research capacity in developing countries—although Baker (2020) voices concerns that most of the publications resulting from these collaborations are driven by the developed country partner with very little research leadership arising in the developing country partner. "*LDCs' (Less Developed Countries) productivity is significantly boosted by the effect of international collaboration. In 2018, about 15,000 of the 21,000 papers they produced involved cross-border collaboration.*"

Baker points to the UK's Independent Commission for Aid Impact review of the Newton Fund (https://icai.independent.gov.uk/review/newton-fund/) which found "*The Newton Fund is a research and innovation partnership fund managed by the Department for Business, Energy and Industrial Strategy (BEIS), which was established to develop science and innovation partnerships to reduce poverty by generating and putting into use knowledge and technology, with a secondary purpose to strengthen the UK's wider prosperity and global influence….However, the fund was poorly designed to pursue the aim of promoting international development, and in reality its secondary objectives – such as building ties with partner countries like China, India, Brazil and South Africa – have often been the main driver of its work. An estimated 90% of UK aid spent through the Newton Fund stays in the UK with UK institutions, which is contrary, at least in spirit, to the UK government's commitment to untying all UK aid.*" This seems consistent with my anecdote about my experience with my University's grant from the Rockefeller Foundation.

A dated but relevant book Global Inequalities and Higher Education by Unterhalter and Carpentier (2010) explores many of these issues also, and tries to identify "*whose interests do higher education institutions serve?*" Unterhalter (2017) further comments: "*Inequality in higher education capabilities for institutions and individuals tends to undermine investigation into global public goods. That such questions of global public good are ignored has something to do with the way global inequalities in higher education are taken for granted. Naming these inequalities and questioning their foundations is an important project.*"

While my personal experience and many of the publications refer to the situation in the UK and Australia, there are some countries, particularly in Scandinavia, where the universities are really able to focus on real needs in reducing global inequality.

My conclusion is that universities, despite the best intentions of individual educators and researchers, are ill equipped to contribute to reducing global inequalities in education and research capacity, as they respond to their own funding needs and the economic and educational nationalism of their countries. Some kind of global solution is required—and I have made some suggestions later on in this book.

Moving away from the problems of the business imperative that drives universities and the structural and organisational themes I have been discussing, there is a fundamental problem in the way that education is provided to young people. Universities are taking too long to adapt their teaching to the way that young people learn today, as outlined in the next section.

2.7 Universities have Not Kept Up with the Way Young People Gain Information

Much of my personal teaching experience has revolved around individual mentoring or small group teaching. As a clinical teacher I would have small group discussions around an individual patient to identify disease diagnosis and treatment with a focus on the evidence base for both. As a 'lecturer' I would run small group seminars and as an academic supervisor I would mentor individuals as they pursued their own research towards a higher degree. I really dislike both giving and attending lectures. At the University of Manchester, I was lucky to have a junior lecturer in my team who liked being on the stage and she very kindly took most of my lecturing duties. When in the audience, I am also usually very shy about asking questions at the end of lecture. Yet I spend a large part of my day, every day, asking questions to find information that I want or need in a different way—by interrogating the internet. And I did not grow up with the internet.

A few years ago, I was asked to evaluate the teaching programme in a major university in another country, and found that they were giving lectures to 500 students at a time. The students did not like them, nor did the academic staff, but my recommendation to replace lectures with alternative methods was ignored by the administration—their use was said to be 'cost-effective'. Not very costly maybe, but effective?

Lectures, the 'sage on the stage' approach, have been the main educational method throughout the history of universities—their academics are called 'lecturers' for a good reason. This is a form of passive learning, and has been acknowledged as a poor way of transmitting information for a long time. Alternative educational methods through creating active learning opportunities have been introduced in many settings. The results of a meta-analysis of 225 studies of student performance in science, engineering, and mathematics indicate that average examination scores improved by about 6% in active learning environments, and that students in classes with traditional lecturing were 1.5 times more likely to fail than were students in classes with active learning (Freeman et al. 2014). The authors make the point that if such a high failure rate had been found in a randomised controlled trial of a medical intervention, the trial would have been stopped and those in the lecturing arm transferred to active learning for ethical reasons! The authors also state that their results are quite similar to other published studies in the educational literature.

Schmidt and colleagues (2015) think that the problem with lectures is the 'information transmission fallacy'—people need to do something with the knowledge they are given rather than just receive it if they are to remember and use it in the future. Hence various opportunities for active learning, such as problem based learning where students work together to solve a problem, are alternatives to the lecture.

A broader issue than the way that lecturers transmit information, and less frequently discussed, is whether the lecturer is needed or not—is self-based learning not as good as, or better than, the tutor? There are many examples today and historically of autodidacts, who teach themselves and have successful careers based on what they have learned. I don't want to extend this discussion to school based teaching, and I do appreciate the importance of having role models amongst our teachers, but there are some relevant data. In a study of mine (Heller et al. 2019), we ran a couple of online courses for continuing professional development with and without tutor support, and showed no difference in outcome (course completion and grades) between tutor-led and tutor-free options. There are other examples, although not many good trials in the literature. I'm setting the scene for a discussion on the potential for online learning, and as you will see this fits in with many of the other themes I have developed so far.

A 2017 national study of American medical students (Nadell 2018) found that less than half of them reported attending classes or lectures in person 'Most of the time' or 'Often' and nearly a quarter said 'Almost never'. The anecdotal literature is full of similar lack of attendance at university classes. So where can students gain information? The internet is today's answer due to the speed of access, breadth of educational materials available, and the increasing availability of access.

As with all sectors of the global population, young people are accessing the internet in increasing numbers. Teenagers use the internet for various reasons, including finding information especially to help with school projects as schools increasingly use the internet as part of their educational processes. Stimulated by the global Covid-19 pandemic, school classes have been offered online. Young people entering universities have been used to gain their information from the internet, so they are primed for this methods of learning, not for lectures.

The Internet Society (Internet Society. Internet Access and Education 2017) unsurprisingly claims that the internet has great potential to improve education quality, and to contribute to global sustainable development.

I don't think that it is news that the internet is becoming increasingly available and accessed. As the picture below, taken from the Pew Foundation for US data (Pew Research Center 2017), shows, this does vary by age, with very high rates in young people (Fig. 2.5).

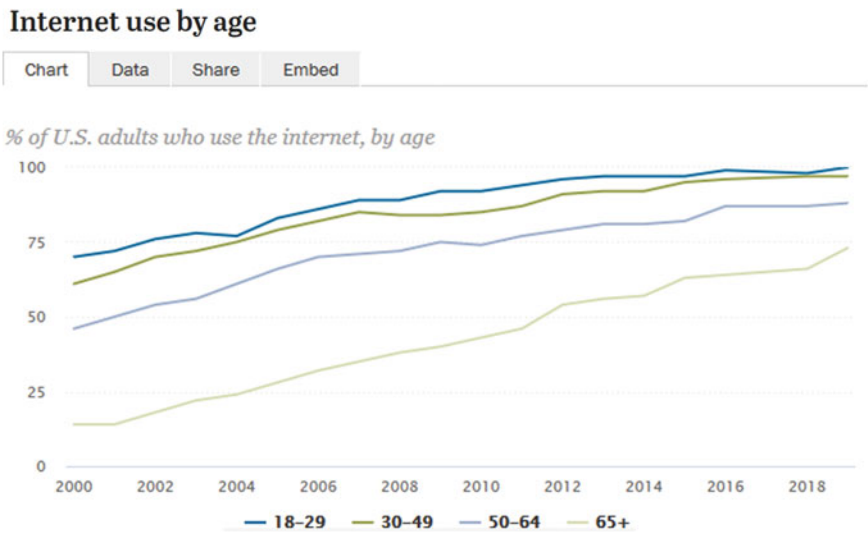

Fig. 2.5 Internet use by age in the US

The age gradient is also seen in Africa, again from the Pew Foundation (Silver and Johnson 2018), where rates are still lower than in other parts of the world, but growing (Fig. 2.6).

There is also a social gradient in internet use, as shown in this figure from the same Pew Foundation survey in Africa where the more educated are more likely to use the internet than the less educated (Fig. 2.7).

This digital divide does pose a problem for relying too much on internet use for education, as it runs the risk of increasing the educational divide within populations. There appears to be an increasing gender gap in digital development, and the majority of those without internet are in the developing world (International Telecommunication Union 2019). A report in the New York Times quotes students in Indonesia who have to climb trees to get a phone signal to allow them to submit their assignments, and that a third of students have limited or no internet access (Paddock and Sijabat 2020). However, over time there have been substantial global increases in access to the internet, and this will undoubtedly improve further over time.

The Pew Research Centre survey (Silver and Johnson 2018) also reports that Sub-Saharan Africans feel that the internet has already had a considerable positive impact on education.

Selwyn (2013) puts it nicely: "..*online practices have been part of young people's lives since birth and, much like oxygen, water, or electricity, are assumed to be a basic condition of modern life….For many commentators, the Internet has always been an inherently educational tool. Indeed, many people would argue that the main characteristics of the Internet align closely with the core concerns of education. For instance, both the Internet* and *education are concerned with information exchange,*

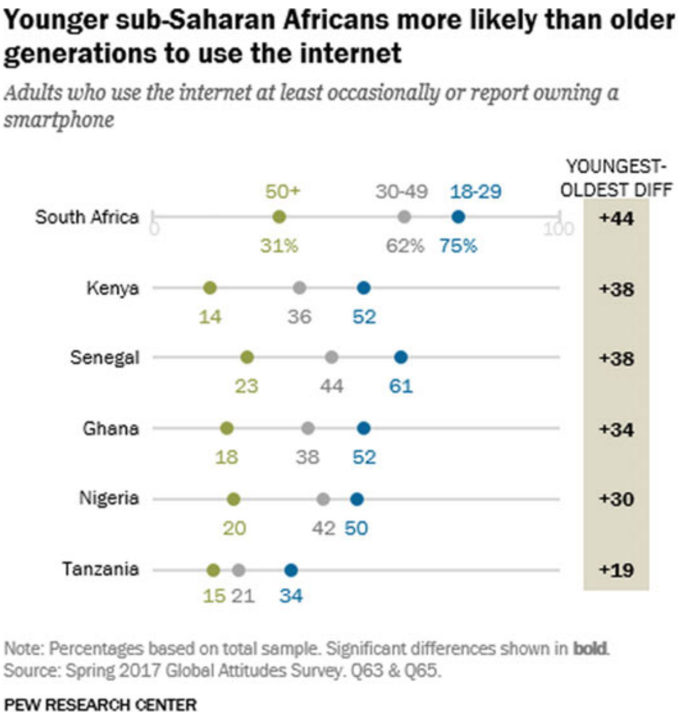

Fig. 2.6 Internet use by age in Sub-Saharan Africa

communication, and the creation of knowledge." Selwyn also lists many potential educational advantages of internet based learning over the more traditional methods.

The acknowledged deficiencies in much of the way that universities do their teaching, the knowledge that young people gain their information online these days, and the potential educational advantages of online education provide a wonderful opportunity to re-cast university educational processes.

The final section in my problems list is probably the most fundamental—that universities' structure and educational methods are not sustainable in this era of climate change.

2.8 Environmental Sustainability is Ignored

It was while working in Newcastle that I attended a conference and went for a run with a colleague on the beach (Australian Public Health conference organisers are no strangers to finding venues that might attract an audience). I asked my colleague if there was any substance to the developing concerns about global warming. He gave me a short (breathless) tutorial about not only the reality and causes of climate

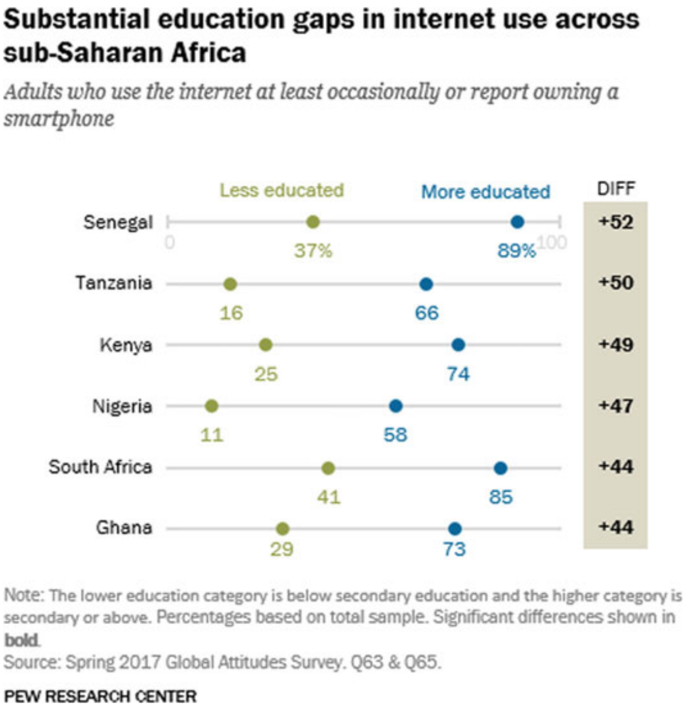

Fig. 2.7 Internet use by education in sub-Saharan Africa

change, but also the health effects. He later went on to become one of the leaders in that academic field.

My personal interest in the environmental effects of climate change evolved slowly. Looking back, my frequent flights between Australia and other countries as part of my work in global health capacity building were an embarrassingly high source of carbon emissions. When I was working at the University of Manchester, as part of the extensive campus building programme an avenue of lovely old trees was cut down. I complained to the Vice-Chancellor and received the reply that when trees were to be cut down, they would be replaced somewhere else on the campus by new trees. I retired before following up to see if the promise had been kept, but of course this was only a very small part of the issue of the relation between universities and environmental sustainability. More important, and much more relevant to my personal experience, is the development of distance and open learning initiatives with which I have been involved throughout my career in the Universities of Newcastle and Manchester, and the International Clinical Epidemiology Network and Peoples-uni. Online delivery of education has the major added benefit of being much more environmentally sustainable than face-to-face education.

There is currently a very active discussion across the higher education sector about environmental sustainability. Universities have a potentially important role in both ensuring that their own practices are environmentally sustainable and offering education and performing research into the issues. As Leal Filho and colleagues (2015) pointed out back in 2015 "*At present, many higher education institutions are becoming more aware of their impact on the environment, and trying to understand the environmental needs and implications of their operations. Going further, some universities are incorporating sustainability principles into their activities. One of the questions that universities are now facing is how education for sustainable development can be translated into practice so that it can be effective in transforming society.*" How far have universities incorporated sustainability issues in the curriculum across faculties and disciplines?

Here are some pictures of beautiful new university buildings in or near Sydney. One designed by a globally famous 'starchitect'. Go inside and they are full of light and space, a wonderful environment in which to study. We have previously discussed how the high number of overseas students are funding university infrastructure—none more than for business schools. What is the impact on the environment of these wonderful buildings? (Figs. 2.8, 2.9 and 2.10)

At the global level, Sustainable Development Goals are the '*blueprint to achieve a better and more sustainable future for all*' (https://sustainabledevelopment.un.org/sdgs). Adopted by all United Nations Member States in 2015, the 2030 Agenda for Sustainable Development provides '*a shared blueprint for peace and prosperity*

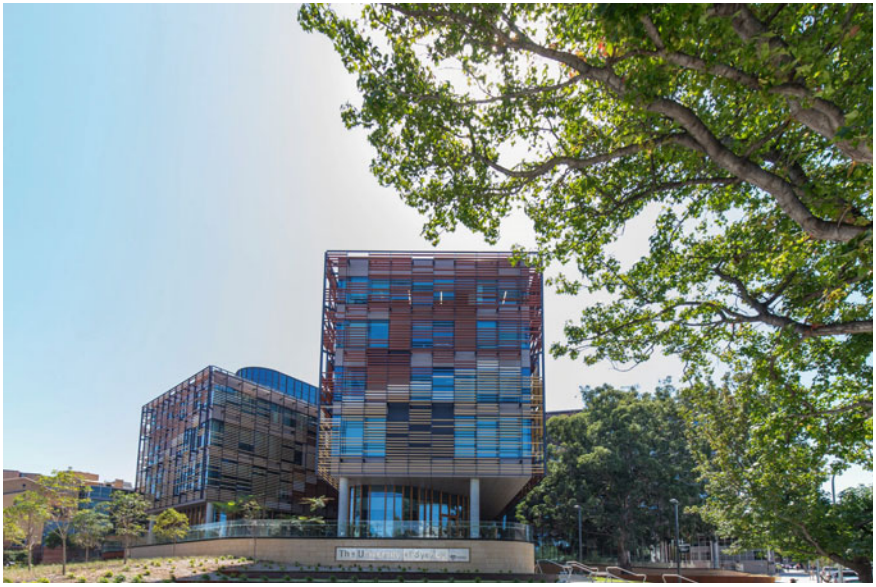

Fig. 2.8 University of Sydney Business School

Fig. 2.9 University of Technology Sydney Business School

for people and the planet, now and into the future. The 17 Sustainable Development Goals (SDGs), which are an urgent call for action by all countries - developed and developing - in a global partnership. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests'. There is a 'Sustainable Development Goal Accord' (https://www.sdgaccord.org/), supported by the Higher Education Sustainability Initiative (https://sustainabledevelopment.un.org/sdinaction/hesi), which is the higher education sector's response, and which has identified five core areas of how educational institutions can engage with the Sustainable Development Goals with a specific focus on SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth) and SDG 17 (Partnership for the Goals):

(1) Teaching sustainable development across all disciplines of study, including through online based platforms,
(2) Encouraging research and dissemination of sustainable development knowledge,
(3) Green campuses and supporting local sustainability efforts,
(4) Engaging and share information with and through international networks,
(5) Engaging universities in local and national government, as well as city development projects.

Institutions and individuals are encouraged to sign the Accord, and it is clear that these 5 core areas of work may make a contribution. It remains to be seen how actively the higher education sector actually embraces these activities. The global

Fig. 2.10 University of Newcastle, New South Wales, City Campus

sustainability agenda is very large, and the higher education sector has a role in it, unfortunately none of the 5 core areas above cover what I really want to discuss.

My focus here is more fundamentally on the impact on the environment of the way universities are established and offer their education. When you base the educational experience on face-to-face contacts between staff and students, such as in lectures, you do need buildings. I want to suggest a system change to mainly online learning. I will present my prescription for a distributed university in the ‘solutions’ chapter of the book.

Bringing people into a physical learning environment involves travel by students and staff, as well as making sure you have the buildings to house them. All of these have an environmental impact. This is magnified for overseas students. In a paper that my colleagues and I have submitted for publication, we explore the environmental impact savings of online education. A cohort of 128 students enrolled in the Manchester Metropolitan University’s Master of Public Health which was actually taught by Peoples-uni fully online (more on Peoples-uni in other chapters). Students came from 31 countries and we estimate that learning online in their home environments rather than travelling to and living in Manchester saved nearly a million kilograms of CO_2. Imagine the savings from a general pivot from face-to-face to online education.

I like this from Warden (Warden 2020) reporting a presentation by Tilbury "*Rethinking not tinkering…Rather than adding on, what is needed is a total overhaul*".

It is a total re-thinking of education which I am also proposing. The various sections so far seem to have a common theme—that there is a need for re-thinking higher education, In the next chapter of the book we will see how each of the areas discussed might be dealt with in a new system.

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