

Chapter 4

The role of universities in development, the economy and society

Manuel Castells

If we take seriously the notion that we live in a global knowledge economy and in a society based on processing information – as universities primarily are – then the quality, effectiveness and relevance of the university system will be directly related to the ability of people, society and institutions to develop. In the context of a technological revolution and of a revolution in communication, the university becomes a central actor of scientific and technological change, but also of other dimensions: of the capacity to train a labour force adequate to the new conditions of production and management. Universities also become the critical source of the equalisation of chances and democratisation of society by making possible equal opportunities for people. This is not only a contribution to economic growth, it is a contribution to social equality or, at least, lesser inequality. The university's ability to develop new cultures is an additional factor: that is, to be the source of cultural renewal and cultural innovation linked to the new forms of living we are entering. Finally, the university has also been dramatically affected by technological change itself. As an institution that processes information, its own information and communication technologies are deeply affecting the functioning and the culture of the university, sometimes without the full knowledge of what is happening and without controlling these

processes. Yet, in spite of all these challenges, possibilities and opportunities for the university system, in many cases universities continue to be corporatist and bureaucratic, defending their own interests – particularly in terms of the professors – and extremely rigid in their functioning in terms of their administration.

To try to understand the processes of change, I will take a wide perspective of the different types of universities that have appeared throughout history, and that combine in our current experience. It is useful to see the universities as fulfilling different functions which are accentuated in some universities at some moments of history, but that, to some extent, constantly combine and re-combine, and that depend on the emphasis on one or the other function. Hence my notion of the university system – not just universities – because different units serve different functions and the whole system has to combine these different functions.

Historically, universities started largely as producers of values and social legitimation. All the major universities in the world started as schools of theology: Bologna, the first in Europe, and then Cambridge, Oxford, Harvard, Salamanca, the Sorbonne and so on. As theological schools, they were producers of values and social legitimation. Other non-religious universities played a similar role in producing, for instance, imperial values in the case of some major universities, justifying domination and Western superiority in the colonial world.

The second function, and in historical terms equally as important as the production of values, was the selection of the elite and the establishment of a stratification in society, making sure that the elites would go through the selection functions in some of these universities. This function is extremely important both then and now. The Ivy League institutions in the United States, or the *grandes écoles* in France, or Cambridge and Oxford in England, are somewhat better than other universities, but not so much better as to account for the fact that 90% of the elites that govern business and the polity come from these universities. The selection of elites is therefore extremely important, more so than the other functions.

Then the third function, also in historical sequence, was the training of the labour force. This saw the emergence of the professional university – particularly important were the schools of medicine, law and engineering. Engineering schools were critical for the development of industrialisation. Examples include the School of Lausanne (one of the top engineering schools in Europe), Caltech as a pure engineering university in the US, and Imperial College to some extent in the UK.

There is another type of university which is not among those already mentioned, namely the science university. This is the university in which the primary function and emphasis is on the production of knowledge, of scientific knowledge. This is a very late invention that took root in the German universities of the second half of the 19th century. Humboldt was the first to assume that the role of science production was the primary function of the university. This idea was only taken up in the United States much later. The first university to copy the German model was Johns Hopkins – not Harvard or MIT. In the United States, universities that were the so-called Land Grant public universities also developed as science-based universities but with applications into society; for instance, Berkeley started as an agricultural school and Michigan as a mining university. The fourth function is therefore science – science specifically to develop particular industries that were very important for the country.

Fifth then, in historical sequence, are the ‘generalist’ universities, universities that came to elevate the education level of the population at large, bringing in to the universities at least 20–25% of the propertied classes. These were the universities that developed in France, Italy, Spain and Latin America after World War II, and then in Africa after their independence. ‘Everybody should be able to go to university’ was the thinking, and it was important to keep the other functions in relatively separate institutions, so as not to be overwhelmed by mass education. Each country developed systems in which the elite would be formed differently and in which science would be produced differently. In the case of Europe, they separated the research

centres from the universities to create national research centres, and so on. This generalist type of university is what I call the mass teaching university: not to provide training but to provide degrees, with degrees granting access to the labour market and allowing graduates to be trained on the job.

The final function is what I call the entrepreneurial universities. These universities focus on innovation and the connection between the world of business and that of science and technology. The classic example of this type is Stanford, which deliberately organised itself to be a great scientific university while at the same time connecting constantly to the business world. MIT also moved decisively in this direction, as have many other universities in the world – in Singapore, most notably. The notion is an interaction, a very close interaction, between excelling in science and technology, and at the same time being able to develop an entrepreneurial system.

All of these functions are combined in different ways throughout the entire university system; one of the key issues is how to articulate these different functions without downplaying one or the other. For instance, it is obvious that not every university can be a research university. But at the same time, all universities have to have access to the research centres that exist in the university system for specific purposes, and they may develop a small nuclei of research that is, on the one hand, linked to the needs of society and the economy and, on the other, fed by the networks of research that can be constructed in the entire university system. Moreover, because we are in a global economy and in a global research system the notion of universities being stand-alone, major research centres is gone. The critical thing is to be in the networks of global production of knowledge, of research and innovation. For that, what you need is not to be the best or even the best in every aspect. You need to have a ticket to enter one of the networks; you have to provide something that is not necessarily the best in the world but is interesting enough that all the other participants in the global research network of one particular field want you to be in the network. For this, of course,

the internet is crucial. You don't necessarily have to go to other research centres; you can spread your results, connect and work in a global network of research without necessarily having to spend every two years in another country.

In the current condition of the global knowledge economy, knowledge production and technological innovation become the most important productive forces. Therefore, without at least some level of a national research system composed of universities, the private sector and public research centres, no country can really participate in the global knowledge economy.

Resources are not forever. What does endure are people with needs, and if you have and develop talented people, you then have the most important resource in the form of the human mind. There are endless examples of how betting on the human mind has been decisive for the development of countries. The East Asian countries that were extremely poor after World War II, and are now 'tigers', all have one thing in common: a very good education system at all levels that is not only based on the traditional value of education, but also on government investment in the quality and quantity of education, and then later based on investment by companies and private universities. Korea, Taiwan, Singapore and Hong Kong all have great education systems and very good university systems precisely because they prioritised education. There is a direct correlation between the capacity to invest in education and universities at the level of economic growth as well as human development, which is fundamental.

In addition, of course, universities have a major role in producing a quality labour force, not only in knowledge but also in terms of the quality of labour. In our type of economy and society, the key quality of the labour force depends on its education, and the labour force's education depends on the educators; in other words, the quality depends on the educators.

The educators are those who have to be trained by the universities of quality; without that – even if we build schools, even with laptops for every child – if there are no good teachers, there can be no good education. And that requires all kinds of

things, including the working conditions of the teachers. We often talk about Finland as an exemplary case. What is the most important thing about Finland? It is the quality of the education system and how well teachers are paid and respected in society.

This factor starts with being well trained at university level. Moreover, the type of training that we need these days is what I call 'learning to learn', which is the constant re-programming of skills in a constantly changing economic, technological and socio-cultural environment. All the information is on the internet – if you know how to look for it and what to do with it. We no longer have to implant knowledge in young people's minds that will quickly become obsolete. Therefore, their ability to constantly recycle knowledge and skills requires two things: first, that education is basically creating what I call the 'self-programmable ability' of everybody to change in many different directions all through their professional lives; and, second, retraining throughout the life cycle which can only be done in one way – via distance education through the internet, which can be of high quality and not necessarily at lower costs because it is expensive to do it well.

Therefore, the role of distance education becomes critical because it allows two things: first, to constantly 'recycle' people all through their professional lives; and, second, to immediately teach the professionals who train the nurses, the rural doctors, the teachers. The notion that we have to teach children so well that, in 25 years' time, we will have a qualified labour force is self-defeating.

Developing countries have to leap-frog dramatically, and you can only leap-frog in education by using virtual education to teach those who are already in their jobs. In this respect, South Africa has great potential because of the University of South Africa (Unisa) and other institutions. However, their internet teaching is not very advanced. Internet teaching is the only way forward; other ways are inefficient and burdensome, and ultimately result in an inferior level of education, and there's no reason why it should be like this.

Another possible function of the university is, in our current context, the production and consolidation of values – ethical and personal values – and the formation of flexible personalities. What is meant by flexible personalities? We live in a constantly changing world, accelerating change. We need to develop pedagogic models that don't give precise instructions on how to behave in life, but instead provide people with the capacity to adeptly reorganise their lives in response to the incessant transformation of the living environment. At the same time, flexible personalities are anchored in certain values so that they don't fall apart. Students need to be trained to have a few, fixed values – don't abuse others, don't be greedy, etc. – not a general civic education system. We have to be the role models and demonstrate values by setting an example. In short, all that is required are a set of values and at the same time flexible personalities – that is the ideal combination. This is a fundamental function of the university which is usually not taken seriously by any university that I know of, although some are starting to think about it – particularly in business schools that have realised that without ethics in business, you end up doing bad business that collapses financial markets.

Universities increasingly emphasise interdisciplinarity. This is a bad word in many academic circles, and yet this is what our economy, our science and our technologies demand these days. Everybody talks about bio-informatics and new materials – disciplines on the borders of traditional disciplines. What makes interdisciplinarity so obvious and yet so difficult? Disciplines are like peace treaties between warring factions, so delicate that departments and disciplines cannot be changed at will. Interdisciplinarity is only practised in some disciplines, for instance, in communications, or in city and regional planning. I always end up in these disciplines simply because I feel freer; I don't have to demonstrate whether I am a sociologist or an economist or a political scientist. But try to recruit a political scientist in a sociology department. It is therefore essential that interdisciplinarity is promoted by the university itself. The University of Southern California has a policy to reward

interdisciplinarity: if you are interdisciplinary, you get a higher salary. There is also a special chair for interdisciplinary academics. In other words, interdisciplinarity is another critical concern.

Then there is the notion of public and private universities: experience shows that this is not the most relevant matter responsible for efficiency in the university. There are great public universities in the world – Berkeley, Michigan, Cambridge, Oxford. In Europe all the universities are public; only some strange, marginal universities are private. In the United States there is no real difference in quality. There is Stanford, but there is also Berkeley; there is Harvard, but there is also the University of Michigan; there is Wisconsin – all equally good. The private institutions might be more influential in selecting elites, but they are not better. The difference lies in how bureaucratic a university is, how flexible it is, how managerial it is. Private universities which are bureaucratic, and I will not name names, are in fact not competitive. Public universities that are managed efficiently, as was the case at the University of California at one time, can be extremely competitive. How universities are managed is critical. Furthermore, whether a university in legal terms is public or private is not as essential as the university being geared towards the public interest. Institutions may be private but still operate in the public interest. Universities that don't operate in the public interest are businesses, and pay the price for it, in taxation and many other ways. Universities can be private or public but work towards the public interest, accessing both government and private funds, but on this basis.

Finally, there is the notion of the technological transformation of the university – which has to be tackled seriously. We are already in a hybrid system; we are not in either a face-to-face or a virtual university. Face-to-face universities are partly virtual because of the internet – we email our students, we are constantly connected. But all this is happening without any real policy, with no transformation of the university's pedagogic method. Introducing e-learning – not just distance learning – as a critical element in the learning environment at face-to-face universities is

as essential as using it in virtual universities. All this depends on the university's capacity to maintain its autonomy. Universities are the last space of freedom, relatively, in society and it is essential to preserve that space not only for scientific but also for social and political reasons. At the same time, we have to earn this autonomy and this freedom every day and use it in the public interest, not in the defence of our privileges. If we combine these two things, we can continue the tradition that started a thousand years ago. If we don't, pressure from society will destroy the university as a space for reflection and innovation.

Note

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