Chapter Four
Institutions and the Future I – Education, Teaching and Learning

4.1. The nature of education, including higher education, is in a process of constant change. This is not a new phenomenon, but the speed of change, both within the practice of formal education, and more generally within society, gives reason to pause and reflect. The very fact that whereas once education was regarded effectively under the heading of teaching, but is now spoken of under the broader headings of teaching and learning, is itself symptomatic of some of the changes.

4.2. The changes are driven by four broader social and intellectual phenomena. These are the changing face of the demography of education; the increasing focus upon the implications for the economy of particular kinds of educational outcomes; the impact of technological development on teaching and learning; and lastly the changing nature of the development of knowledge. I shall discuss each of these in turn.

The Changing Face of the Demography of Education

4.3. Historically, most of the discussion of the demography of education focused upon how much of education was compulsory, and at what ages transition from one sector to another (usually primary, secondary, and post-secondary) took place. Thus, in Hong Kong compulsory education is available to young people up to the age of fifteen. At post-secondary level, the public sector provides a range of options, including university or higher education sector places for 18% of the 17-20 age group. That situation is already changing quickly.

4.4. Across many developed countries there has been a move towards a mass higher education system. The most obvious and successful example is the USA where over 60% of the age-group 'go to College'. This is no longer the single striking exception and, for example, Scotland has a participation rate of around 50% and England at 33% is energetically pursuing a similar target. In fact, it is important to note that Hong Kong's equivalent figure is above 30%, rather than below 20%, when one takes into account those pursuing publicly-funded sub-degree places at the UGC-funded institutions, the Hong Kong Academy for Performing Arts, and the Vocational Training Council; those pursuing self-financing courses in continuing education (including programmes offered by the Open University of Hong Kong); those undertaking various post-secondary courses at private institutions (e.g. Shue Yan College, Chu Hai College); and those who choose to study overseas.

4.5. Another important sign of changing demography in education is the explosion internationally of continuing professional development/education, driven by the speed of expansion of relevant areas of knowledge. All of the main traditional professional bodies, e.g. doctors, lawyers, engineers, teachers, accountants, and so on, have seen a

growth of required professional development as a condition of continuing professional recognition and accreditation.

4.6. The term 'lifelong learning' and most of what it implies has entered forcibly the lexicon of education policy-makers and practitioners. This has implications of when and to whom adult education is available, but also significant implications for the nature of the educational process and aspiration in earlier years. No longer is it adequate, if it ever was, to assume that education is a matter of spending a few years of learning what is imparted by one-directional teaching and then living off educational capital for the rest of one's (working) life.

4.7. Hong Kong has responded to these changes in a number of ways, and detailed attention is currently being given to others by a variety of groups from teachers and professors to the Education Commission. The higher education sector was expanded in the first half of the 1990s to its current size. I have no inclination, nor have I sensed any pressure, to expand the current higher education target of providing for 18% participation for 17-20 years olds in the UGC sector. The universal response to my question about this has been that the first priority must be the quality of entrants and graduates, and I share this view. I should point out, however, that many countries have significantly expanded higher education without sacrificing quality, and that there is no educational validity in controlling quality purely by entry gates.

4.8. However, there are two policy decisions in Hong Kong which will bear directly on the question of educational demography, both of which have strong implications for higher education. The first is the decision to expand post-secondary participation to 60% of the age group over ten years. This is both bold and commendable. It will impact on higher education in a number of ways. As already noted in Chapter Two, the sector is likely to be a major supplier of the planned associate degree programmes and community college capacity. This has implications for financial accountability (as Recommendation 4 noted). It also has implications for the size and shape of higher education provision of a rather different kind. As the associate degree programme expands, so a demand-led market will be created from successful students to enhance these qualifications, by entering higher education programmes in the second or succeeding years and completing first degrees. Over the next few years, the UGC will have to work with the emerging associate degree sector to ensure sufficient flexibility to meet this demand. In particular, the UGC's funding mechanism will have to be capable of creating extra capacity for new entrants other than through the current first year first degree quota. In turn, the Government will have to weigh the financial consequences of meeting the demand which its policies will create.

4.9. The institutions will also have to devise means of articulating relevant credits from associate degree holders into their curricula to provide smooth transition routes to graduate status. The need for appropriate quality assurance processes has already been dealt with in Chapter Two. What is required is a qualifications framework, underpinned by credit accumulation and transfer that facilitates student mobility. Funding by credit units as an alternative to funding by student numbers will have to be further examined. There are pros and cons for this approach, but on balance the arguments favour a new methodology. ***Appendix E*** sets out a UGC discussion paper which proposes a model for funding teaching by credit units.

4.10. The essential message here is that changing educational demography will require new definitions of fitness for purpose and new forms of flexibility in university admissions, credit-allocation, and curricula, as well as in UGC funding mechanisms. The bonuses for the system, which could become specific points of mission-focus for some institutions, are the creation of new markets and sources of public and private funding. If local, publicly funded institutions do not seize the opportunities, there is no doubt that private and international competitors will. Thus, some institutions may find a central role and market in devising user-friendly, credit unit degree programmes which will meet the many future needs and demands for lifelong learning.

4.11. A rather different policy – the change of the normative length of secondary school courses from seven years to six – will also have radical implications for higher education. This is an opportune moment to consider articulation between the school and post-secondary sectors. Specifically, we need to find ways for university admission requirements to be broadened so that high quality students can be admitted to universities not simply on the basis of achievements in public examinations. Currently discussion has focused upon the need for, and costs of, the extension of the standard first degree programme from three years to four. The great need now is for creative attention to be given to the uses to which such extra time in the degree programme might be put. Simply to assume that it will be more of the same would be to dismiss the single greatest opportunity in this generation for re-thinking the curriculum and the way it is delivered and assessed. The whole of this chapter is in part intended as a contribution to that discussion.

Education and the Economy

4.12. Internationally there has been a subtle change in language from talking about the *cost* of education, to talking about the *investment* in education. This reflects a profound shift in perception. It recognises the importance of education for the knowledge economy. It also implicitly raises the question of whether the outcomes of the education process are adequate for the changed economic circumstances. Complaints are made of graduates who lack some of the generic and transferable skills necessary for graduate level employment – for example, language skills (which always figures in Hong Kong discussions), and the skills of communication, and group participation and teamwork, as heard in many other societies.

4.13. The development of bi-literacy and tri-lingualism can only properly be dealt with by the whole education sector, starting with teacher education, kindergarten and primary schools. Detailed discussion of these issues belongs elsewhere. However, as a remedial action, the proposed introduction of a voluntary common proficiency assessment in English for all graduating students, which would inevitably become a requirement of employers, would provide some help. My intention, however, is not to offer a detailed prescription for higher education curricula and educational practice, but rather to stress, that as for all the other reasons given in this chapter, curricula will feel the pressure to develop and evolve to meet the various new circumstances, so the primary significance of university education for most students – improved job prospects – will also feature inevitably in the re-calibration of the higher education system. None of this is to deny the higher ideals of education – well-stocked critical minds capable of major contributions to the culture, democracy, science and economy of developed societies.

But higher education must show to the public and private purse-keepers of society good quantifiable reason for investment in education at all levels. Both types of aspiration are essential.

4.14. Whilst on the issue of improved job prospects, a significant number of taught postgraduate programmes have in recent years found niche markets to serve manpower needs in the knowledge economy, as well as to enhance career development of members of the workforce. Given the limited resources in higher education, there is a strong case for these taught postgraduate courses to be run on a self-financing basis, reflecting the benefits to be derived by both employers and employees.

Technological Development and Education

4.15. The means of providing education and the sources of learning have been dramatically widened in the last decade because of the development and wide availability of the new technologies. The only thing which we know for certain about the future is that the changes will be even greater. This has happened before with the invention of the printing press – when Bill Caxton rather than Bill Gates was simultaneously changing education and society in England.

4.16. All that was five hundred years ago, but as with now, the world of education and learning was never the same again. Interestingly the changes then were not the replacement of teachers and professors by publishers and librarians, any more than the end of the teaching relationship is written in the virtual sky of the worldwide web. But equally, it is certain that the nature of that relationship has changed with the information and communication technologies, as have the opportunities open to education to reshape itself.

4.17. Electronically-based teaching and learning is changing what happens in the classroom next door, just as dramatically as the opportunity to provide distance learning and 24-hour global delivery. This increases rather than diminishes the need to educate critical minds for there is more dangerous junk on the web than ever to be found in the most liberal of libraries. Yet positively, the technology offers vast resources for learning and opportunities for creative and interactive forms of delivery. There is also a sense in which the learners in the current generation will set the pace in education in a way that has never previously been known. Their capacity to access resources in their own time to fit their own development schedule means that the notion of a uniform age cohort moving like a herd through the school is fast disappearing.

4.18. Electronic delivery is at present in its infancy. However, it is already clear that in the future it will assist in delivery of content and subject materials, and enable communication and dialogue between tutor and student, and between students, that will transform the bricks and mortar institutions. Institutions are already developing ‘virtual learning environments’ and ‘managed learning environments’ with tools and vehicles to facilitate the tuition, support and management of learners on- and off-campus. Electronic delivery will also assist the development of collaborative inter-institutional teaching. But this will put pressure on new skills required in authoring content, in supporting students, and in managing and maintaining the infrastructure that will need to be disseminated across the sector.

4.19. To fulfil its leadership and strategic planning role, the UGC should identify sources of funding to pump-prime initiatives that enhance skills and knowledge in learning, teaching and assessment. In this fast changing environment, it is important to invest in staff development so that university teachers can keep up-to-date with the technologies so as to enable the students to learn effectively. This is an important role for the leaders and management of the institutions, but the UGC's funding mechanisms will need to make that possible.

> **Recommendation 7:**
> **That the UGC and the institutions jointly assess the need for staff in the sector to develop new skills to respond effectively to technological and other changes in higher education, and jointly support initiatives addressing these needs, including the dissemination of best practice across the sector.**

4.20. The new technologies are also changing the competitive landscape of higher education. The web, in particular, has freed education from its historical geographical constraints. Distance learning courses serve students without regard to location. Institutions can operate satellite campuses or work with partners while retaining close virtual contact with core academic staff members. Non-traditional providers, including for-profit organisations (e.g. corporate universities and entrepreneurial universities), compete across broad geographies in selected (i.e. profitable) markets. Universities of the 21st century will have to operate in this virtual space of a global market and meet global standards for education quality and cost effectiveness.

4.21. Technology also changes staff roles and responsibilities. E-learning modules can now be acquired from outside the institutions, rather than custom-made by local staff. Such modules facilitate on-campus instruction as well as distance learning. They offer more options for delivering content and honing student skills, which allows staff to work with students on interpretation and other high level activities. To use a phrase now popular with technology leaders, 'The staff role shifts from sage on the stage to guide on the side'. In addition, staff must become expert at balancing the costs and benefits of alternative learning methods, selecting materials for supporting and managing more complex educational processes. Content expertise – including expertise that stems from research and scholarship – remains necessary for good teaching, but it is no longer sufficient. The aforementioned intensifying competition will seriously disadvantage any institution that fails to perceive and respond to these changes.

The Changing Nature and Development of Knowledge

4.22. The English author and book reviewer, Frederick Raphael, wrote, 'The last man who knew everything lived and died in the eighteenth century'. The main reasons for that are twofold. The first is the absolute explosion of the knowledge and understanding of ourselves and our world which has taken place since the advent of the printing press and which is now expanding exponentially in cyberspace.

4.23. The second reason for the truth of Raphael's aphorism is that the successful expansion in our knowledge has been premised upon the fragmentation of that knowledge. The content of knowledge as well as the techniques for expanding it have become more and more specialised. Often the specialisation is technological in that literally new techniques whether, for example, those of the human genome project, or of nanotechnology, have been created to expand the sum of human knowledge. The consequence is that even if we had the time, most intelligent human beings could not absorb or understand all the avenues and byways of this explosion of human knowledge and understanding.

4.24. Interestingly, the situation often goes full circle, so that a specialist in one field sees the need for the expertise of another field in order to advance. Thus the chemist who wishes to understand the implications of his work for proteins, learns to talk to the biochemist and the biologist, or the software specialist working on speech recognition technology comes to realise that the linguist working on natural languages is a partner who is essential if progress is to be made.

4.25. What does this mean for education, teaching and learning? First and foremost that, although we need specialists, we also need those who can as necessary move beyond that specialism – not usually by becoming a specialist in two areas, but by seeing creative and unexpected connections and building teams with varieties of skills and the capacity to work together in a trusting but sometimes appropriately intellectually critical manner. What is true for the advancement of knowledge and technology is equally true for project management and team-participation which comprises so much of the business sector. Educationally the challenge is clear, and nowhere more so than in higher education where the specialism of the single honours degree has been so dominant in some societies.

4.26. Finally, the changing shape of knowledge is altering the world in which we live. The huge growth in impact of information technology and biotechnology over the last decade or so underlines the need for institutions to have both the vision and the capacity to manage change required to navigate in such waters (see Recommendation 6 above and Appendix D).

Conclusions

4.27. First, it should be recognised that education in theory and practice is subject to dramatic and changing influences, pressures and opportunities, some of which have been outlined in this chapter. The need for flexibility of thought, planning and response is evident. Rather than list innumerable specific recommendations some of which could at best be informed hunches, I would rather address a specific recommendation to the UGC about funding and add a coda for the attention of institutions.

4.28. This will mean that the criteria for distributing the teaching element of the block grant will change, as will the mechanisms for funding. The UGC will need to investigate the development of performance indicators to assess the outputs of teaching which are as robust as those that it intends for research. This will in turn be related to the further development of mission- and performance-related funding. Institutions should manage themselves and their missions accordingly.

4.29. Further, the UGC will have to develop patterns of funding in which it is possible to support the needs of courses and course units, as well as the 'package' of first year first degree, entry based programmes. This will mean modifying the funding methodology to incorporate an element of funding by credit units (see paragraph 4.9 above). A more radical approach would be some kind of voucher system where the student holds a funding entitlement, but with little support at present among stakeholders this is an issue for the future.

4.30. Much of the success of the sector in confronting and exploiting the new opportunities will depend upon an internal change of culture – not least the culture of rewards where currently it is found easier to reward and promote on the basis of innovative research than on the basis of innovative teaching.

4.31. The UGC should also find ways of supporting innovative teaching programmes. At one level the support would take the form of specific funded places either by course unit or by programme. At another, the initial support needed will be for development work, followed by dissemination.

4.32. Finally, institutions and staff should recognise that the aforementioned forces necessitate a comprehensive view of education quality, and they need to have in place a rigorous process that assesses and maintains quality. In a similar vein, the UGC needs to develop further the TLQPR, bearing in mind my earlier proposal in Chapter Three that this could be subsumed in an institutional audit. The continuous improvement of excellence in teaching should be a goal shared by institutions and the UGC, as the development of mission- and performance-related funding continues.

Recommendation 8:
That the UGC's support for teaching and learning be informed by continued attention to the educational opportunities created by demographic changes in the demand for education, by the economic case for investment in education and the technological revolution which is reshaping both the means of delivering education, and the opportunities for learning.