



PEB Exchange, Programme on Educational Building 2001/13

The School of the Future

David Istance

<https://dx.doi.org/10.1787/772611613181>

THE SCHOOL OF THE FUTURE

On the occasion of its 30th anniversary, PEB invited experts to debate the continuing need for educational buildings at a one-day seminar in June 2001 entitled "Temples of Learning or White Elephants? What Future for Educational Buildings?" Manfred Hinum (Austria), an active member of the PEB Steering Committee throughout its existence, gave an overview of the developments in educational building that have been the focus of the Programme during the past three decades. The OECD Centre for Educational Research and Innovation presented possible scenarios for schools over the next 15 to 20 years (see page 11). The effects of information and communication technologies (ICT) on the learning environment were addressed at both school and tertiary levels, as well as the views of teachers and other users of educational facilities.

Effects of ICT

Stephen Heppell (United Kingdom), director of ULTRALAB, Anglia Polytechnic University's learning technology research centre, issued challenges to received wisdom about grouping classes by age group and about young people's capacity to learn. To illustrate the latter, he presented a virtual school used to teach those for whom school had not worked. Notschool.net¹ is an online learning community. Each student, or "researcher", is given an attractive I-Mac and accessories to use at home. With the help of retired teachers, undergraduate students and experts from museums, galleries and elsewhere, the researchers engage in interactive programmes where they learn music, mathematics, sciences, etc. Though they had been out of school for at least four years, 99% of the people in the pilot group were still actively participating in the programme at the end of the first year.

Tony Bates (Canada) of the University of British Columbia described some current developments in distance education and speculated about the future for campus universities.² Three models for the learning environment were discussed: classroom, distance and mixed mode. Bates reported that with the increasing use of ICT, students are asking for more social areas on campus. It is unlikely that the cost of higher education will drop with the increasing use of ICT, given the high costs of faculty training and of replacing computers and servers approximately every three years. The danger of global dominance by a few private sector or public/private partnerships was also mentioned.

Clive Booth (United Kingdom), chair of the Teaching Training Agency, questioned whether computers would be transformational and spoke about the importance of social interaction in the classroom. He emphasised how little the classroom has changed over the last 100 years. This is evidence perhaps that the traditional classroom layout has served its purpose up to the present and has been relatively cost-effective. He stressed the necessity of finding a medium between what has worked and embracing new possibilities. Booth stated that the 7% of parents in England who pay private schools for their children's education do so for small class sizes rather than for ICT. Interaction between people has its place in education, and the teacher has a moral influence on his or her pupils. The teacher can play an important role in giving young people a sense of purpose and a set of values that will transcend the immediate environment.

Users' views

Marie-Claude Derouet-Besson (France) of the National Institute of Pedagogical Research gave a users' perspective of educational buildings. She told of the grand inauguration a century ago of France's first high school for women, a beautiful, modern construction. When it came time for the director to make her speech, she disappointed the eminent gathering by listing everything that was wrong with the new facilities, all the equipment that was missing. Users, quipped Derouet-Besson, are never satisfied. And listening to them instils fear of increasing costs. Users, however, are the inventors of school spaces. Building should begin with the needs for teaching. Not only teachers must be taken into consideration but children, parents, child specialists, etc. In France, local authorities are not obliged to consult future users. The occasions for dialogue with architects are very rare; the gap that exists between the architects and users is exacerbated because users rarely talk about space except in general terms, e.g. "renovating a laboratory" or "building a playground". To be able to express themselves, users need to be made aware of architecture and to become conscious of space. Derouet-Besson recommends confiding to users the responsibility for facilities, such as classroom furniture, that directly concern them and that have a short life-span.

1. A description of Notschool.net as well as of the Learning in the New Millennium project presented by Heppell are available at <http://www.ultralab.ac.uk/projects/>

2. Visit <http://bates.cstudies.ubc.ca>

DIFFERENT POSSIBLE FUTURES FOR SCHOOLS AND THEIR BUILDINGS: THE OECD SCENARIOS

Introduction

This article reports six scenarios for the future of schools developed through the Schooling for Tomorrow programme of the OECD Centre for Educational Research and Innovation (CERI). It also raises some questions concerning how buildings and facilities might be affected by each of the six. These are preliminary and illustrative, with the view of stimulating discussion. Each scenario is described, and questions concerning buildings are presented, along with more general issues arising for each possible future.

Scenarios are tools to stimulate policy thinking and invite reflection on the strategic choices to be faced over the medium to long term. Those presented below are neither purely empirical (predictions) nor purely normative (visions) as they combine both elements – already-visible trends, plausible inter-relationships and guiding policy ideas. None of these alternatives should be expected to emerge in a pure form as they are “ideal type” possible futures. Perhaps surprisingly, forward-looking policy thinking has been relatively little developed in education compared with other sectors, despite education being *par excellence* about preparation for the future with very long-term impacts.¹

The Schooling for Tomorrow scenarios have been developed through international discussions, in larger and smaller groups, culminating in the November 2000 Rotterdam conference on “Schooling for Tomorrow”. They were presented to the ministers of education at their April 2001 conference as a chapter in the most recent OECD *Education Policy Analysis* (OECD, 2001a), and the full report is being published in October 2001.² In their full versions, they have each been constructed around the following dimensions:

- attitudes, expectations, political support;
- goals and functions for schooling;
- organisation and structures;
- the geo-political dimension;
- the teaching force.

The six scenarios have been clustered into three main categories – two described as the “status quo extrapolated”, two as “re-schooling” and two as “de-schooling”.

The status quo extrapolated

Scenario 1

Bureaucratic School Systems Continue

- Strong bureaucracies and robust institutions
- Vested interests resist fundamental change
- Continuing problems of school image and resourcing

The scenario described: This scenario is built on the continuation of systems characterised by powerful bureaucratic features and strong pressures towards uniformity. Robust systems prove extremely resistant to radical change, given the strength of vested interests in present arrangements. In fact, while a common complaint directed at schools is their resistance to change, many actually feel more comfortable with the familiar and with gradual evolution only. Nor in this scenario do resource levels pass the thresholds that would allow for radical change, while the new tasks and responsibilities that are continually added to the remit of schools further stretch available resources. There would be the continuation of a distinct teacher corps, sometimes with civil service status, while professional status and rewards are problematic in many countries.

Buildings and facilities: This scenario supposes a substantial degree of continuation with present arrangements, and hence a broadly similar range of opportunities and problems confronting school buildings. A wide diversity would be apparent in the quality of buildings and facilities, and the necessary investments would continue to struggle in the face of intense competition with the alternative calls on resources. Pockets of innovation and new sources of funds would develop alongside very conventional arrangements. A general conservatism would oppose radical developments in flexibility or educational design across most of the school system.

Some issues arising: While bureaucratic systems are commonly criticised, they address a range of fundamental tasks, especially of guardianship and socialisation, that generally pass unnoticed compared with the obvious ones relating to school knowledge and diplomas (Hutmacher, 1999). If strong systems were not in place, the question arises of what alternative arrangements for schooling as a whole would meet their very diverse responsibilities more effectively. Despite the powerful factors acting to maintain bureaucratic school systems, emerging forces – the spread

1. Ylva Johansson, the former Sweden Education Minister, emphasised this point in her conclusions as chair of the Rotterdam conference, in describing forward-thinking approaches as being “woefully under-developed in our field.”

2. OECD (2001), *What Schools for the Future?*, Paris.

of information and communication technologies (ICT), new forms of accrediting competence outside formal education, teacher supply problems – may yet prove powerful enough in a time frame of 15 to 20 years to seriously disturb the “status quo”.

Scenario 2

Extending the Market Model

- *Widespread dissatisfaction leads to re-shaping public funding and school systems*
- *Rapid growth of demand-driven “market currencies”, indicators and accreditation*
- *Greater diversity of providers and professionals, greater inequality*

The scenario described: Trends towards more market-oriented schooling models are much closer to the experience and cultures of some countries than others, and cover a widely diverse set of developments.³ In this scenario, these become significantly extended as governments encourage diversification in a broader environment of market-led change. Many new providers are stimulated to come into the learning market, encouraged by thoroughgoing reforms of funding structures, incentives and regulation. A flourishing set of indicators, measures and accreditation arrangements start to displace direct public monitoring and curriculum regulation. There would, in contrast to Scenario 1, be a less distinct teaching force as a wide range of new professionals with diverse profiles – public, private; full-time, part-time – are pulled in. Flourishing training and accreditation for these new professionals would spring up.

Buildings and facilities: As in their nature, a wide range of market-driven changes would be introduced into the ownership of, leasing of, running of and investing in, the learning infrastructure. Very innovative solutions could be expected to flourish. What would happen to existing premises is a major question raised by this scenario. Another is how far smaller scale/fragmentation would permit a high degree of specialisation in educational plant and facilities. A third question concerns the widening inequalities between different areas and communities, and the extent to which this would be mirrored in flourishing educational resources in some places contrasting with decaying infrastructure in others.

Issues arising: The development of this scenario would be fuelled by a strong sense of dissatisfaction by “strategic consumers”, especially articulate middle-class parents and political parties, in cultures where schooling is already viewed as much as a private as a public good. Wide differences of educational performance would add weight



Höhere Technische Bundeslehranstalt, Vienna, Austria

This vocational and technical college is housed in a former tobacco works. A classified historical monument, it is owned by the Federal Real Estate Company, which has restored the building and leased the facility to the college. An active partnership has been established between industry and the college, providing financial support for the purchasing and maintenance of technical equipment.

to the criticisms, while the flourishing of the “market model” would itself depend on a relatively high general tolerance of inequalities. Innovation abounds but so do painful transitions, while inequalities worsen. The likelihood of a fully-fledged market scenario emerging depends partly on the level of education in question – it is more plausible for the higher than lower cycles of schooling.

The “re-schooling” scenarios

Scenario 3

Schools as Core Social Centres

- *High levels of public trust and funding*
- *Schools as centres of community and social capital formation*
- *Greater organisational/professional diversity, greater equity*

The scenario described: The school here comes to enjoy widespread recognition as the most effective bulwark against social fragmentation and a crisis of values, stressing its role as “social anchor” and fulcrum of residential communities (Kennedy, 2001; Carnoy, 2001). This is still further supported by those analyses suggesting the erosion of “social capital” to the detriment of individual well-being, society and the economy (OECD, 2001b). Levels

3. Depending on the country, this scenario might more convincingly be classified under the “de-schooling” scenarios.



Tomaree Education Centre, Australia

Following discussions with the local council and other government service providers, this education centre (foreground) was designed as a wide-ranging educational and community resource centre for the Tomaree peninsula. It provides for primary, secondary and tertiary education and includes a health clinic, library, multipurpose centre and sports facilities for both school and community use.

of financial support would probably need to increase well over current levels in order to meet demanding equalising requirements for quality learning environments in all communities and to ensure the high levels of esteem for teachers and schools that underpin this scenario. Current trends in favour of individualised learning would be tempered by a strong collective and community emphasis. This would not necessarily be to the neglect of the cognitive but it assumes widespread post-school opportunities for lifelong learning taking over some of these tasks. There would be extensive shared responsibilities between schools and other community bodies, sources of expertise, and institutions of further and continuing education. The involvement of many other professionals, community players, parents, etc. around the core of teachers would complement rather than conflict with high status teacher professionalism.

Buildings and facilities: Very major investments in buildings and facilities would be part of this scenario, some of them raised from the local tax base as communities recognise the importance of schools to their vitality. Such investments would be aimed at improving the quality of the premises and equipment in general, at opening the school facilities towards new forms of community learning, and at extending the range and quality of social functions that the school would serve. Greater diversity of funding and involvement could be expected, from community and corporate sources, but also a very significant public investment especially to ensure that major divides do not widen between richer and poorer areas.

Issues arising: This future, however desirable, would imply substantial changes in most countries. Re-definitions of purpose and practice would have to be identified, widely endorsed by all the main stakeholders, and the requisite means made available. Fundamentally new practices and structures would need to be established. Furthermore, the very problems in communities, families and social capital making this scenario attractive could equally hinder its implementation – much closer ties between schools and communities might only serve to exacerbate the gaps between the vibrant and the depressed. This would clearly need to be avoided if the future is to lie with this scenario.

Scenario 4

Schools as Focused Learning Organisations

- *High levels of public trust and funding*
- *Schools and teachers in networks and learning organisations*
- *Strong quality and equity features*

In this scenario, schools are revitalised around a strong “knowledge” agenda rather than prominent social/community responsibilities. This would not mean, however, a return to traditional methods as experimentation is the norm; curriculum specialisms flourish, as do innovative forms of assessment and skills recognition. Teachers would in general be highly motivated; conditions would be favourable, with a strong emphasis on research and development, continuous professional development, group activities and networking. ICT are used extensively alongside other learning media, traditional and new. The very large majority of schools would now justify the label “learning organisations”. As with the previous scenario, educational politics are characterised by high levels of trust and generous resourcing. Close links flourish between schools (especially at the secondary level), tertiary education establishments, media companies and other enterprises.

Buildings and facilities: This scenario would likely lead to intense competition between the different sources of funding, as it calls for substantial investments in all aspects of schooling. It is likely to result, however, in the burgeoning of flexible, state-of-the-art facilities. In part, this would be afforded through partnerships with the corporate sector. The distinctiveness of schools as learning centres, as opposed to community centres, would be clearer than in Scenario 3, while blurring boundaries with tertiary education would lead to more diversity in educational plant than visible at present, as well as more diversity in ownership and leasing arrangements.

Issues arising: Such links notwithstanding, the strong “knowledge” focus of schools lessens the risk of schools being burdened with an unrealistic array of social tasks, picking up pieces when other solutions have failed. Many would regard Scenario 4 as a desirable future, but how realistic is another matter given the gap with much current practice (OECD, 2000a). It is not obvious how a highly supportive media and political environment can be created if these do not already exist, still less if there is actual hostility. Its equality assumptions are also highly demanding.

The “de-schooling” scenarios

Scenario 5

Learning Networks and the Network Society

- *Widespread dissatisfaction with/rejection of organised school systems*
- *Non-formal learning using ICT potential reflects the “network society”*
- *Communities of interest, potentially serious equity problems*

Issues arising: In this scenario, dissatisfaction with available provision leads to a quickening abandonment of school institutions in favour of diverse learning networks, further stimulated by the extensive possibilities opened up by powerful and inexpensive ICT. The result is the radical de-institutionalisation, even dismantling, of school systems as part of the emerging “network society”. More diverse cultural, religious and community voices come to the fore in the day-to-day socialisation and learning arrangements for children, some very local in character, but some using distance and cross-border networking. There is no longer reliance on particular professionals called “teachers”: the demarcations between teacher and student, parent and teacher, education and community, blur and even break down entirely.

Buildings and facilities: The thorough-going dismantling of the system would imply substantial reduction in public facilities and institutionalised premises. Diverse market arrangements would take their place to some degree as in Scenario 2, and community and private facilities would also play an important part. A key problem could turn out to be the decline in specialised learning facilities, as smaller groups and individuals find themselves too fragmented to invest at levels comparable with education authorities. Another issue would be how existing premises would be dealt with and used, and whether sold off altogether. The possibly temporary nature of the scenario would also raise critical issues relating to premises if it had resulted in wholesale sell-off of schools that would prove prohibitively expensive to re-acquire at the market rate.

Issues arising: Advocacy of “de-schooling” is not uncommon, especially among futurists searching for clear alternatives to bureaucratic school-based models. It is in tune with themes underpinning the broader lifelong learning agenda (flexibility, individualisation, non-formal learning, etc.). Some see home schooling as already growing quickly even if it is only still small-scale (e.g. Hargreaves, 1999). The scenario gives rise to serious questions, however, of feasibility and sustainability. How well would such de-institutionalised arrangements meet the range of critical “hidden” functions, including of socialisation, currently performed by schools? What would happen to those individuals and communities not actively participating in the “network society” – far from this scenario bridging the “digital divide” (OECD, 2000b), it might deepen it. Do visible trends lend plausibility to the “networks of interests” model as the dominant social structure? However attractive to some, it may well not describe a viable or “steady-state” future.

Scenario 6

Teacher Exodus – The “Meltdown Scenario”

- *Severe teacher shortages tend to be unresponsive to policy action*
- *Retrenchment, conflict and falling standards leading to areas of “meltdown”, or*
- *Crisis provides spur to widespread innovation but future is still uncertain*

The scenario described: This “meltdown scenario” postulates a major crisis of teacher recruitment that would be relatively impervious to the usual policy responses. It could be triggered by a rapidly ageing profession, as is already visible in some countries, but this would not be the only cause. There would be a sustained period of high net outflows of teachers that would be difficult to offset given the long time lags involved before recruitment measures make a tangible impact on numbers of practising teachers. This would be exacerbated by tight labour market conditions and general skill shortages impacting on the relative attractiveness of teaching as a career. The sheer size of the teaching force makes improvements in relative attractiveness extremely expensive. As the teacher exodus takes hold, potentially very different outcomes could be part of this scenario. At one extreme, a vicious circle of retrenchment, conflict and decline sets in, exacerbating the inequalities and problems further. At the other, the teacher crisis provides the spur to radical innovation and change, with different stakeholders joining forces behind far-reaching emergency strategies. More evolutionary responses lie between the two extremes.

Buildings and facilities: One eventual outcome of the scenario might be to move to an alternative – the market model, one of the re-schooling scenarios, the network society – each with its own set of implications for buildings and premises as discussed above. As the meltdown took hold, however, it would be likely that investments in physical capital would be very badly squeezed, as funds switch increasingly into salaries in an effort to attract more teachers. The detrimental effect of this on working conditions might be recognised as counter-productive, however, leading to some rectification of the neglect of educational plant.

Issues arising: There are many uncertainties in this scenario, but its value is perhaps less in its predictive power and more in sharpening awareness of the possibilities and their consequences. Some might judge it to be unlikely given the proven resilience and adaptability of school systems: they would argue that some matching of teacher supply and demand will always be achieved and “meltdown” avoided, though perhaps with costs to be paid in educational quality. Perhaps, indeed, the scenario is less plausible for affluent societies with burgeoning professional labour markets and more likely in societies where the highly qualified job market itself suffers wholesale collapse.

References

- Carnoy, M.** (2001), “Work, Society, Family and Learning for the Future”, in *What Schools for the Future?*, OECD, Paris.
- Hargreaves, D. H.** (1999), “Schools and the Future: The Key Role of Innovation”, in *Innovating Schools*, OECD, Paris.
- Hutmacher, W.** (1999), “Invariants and Change in Schools and Education Systems”, in *Innovating Schools*, OECD, Paris.
- Kennedy, K. J.** (2001), “A New Century and the Challenges it Brings for Young People: How Might Schools Support Youth in the Future?”, in *What Schools for the Future?*, OECD, Paris.
- OECD** (2001 a), *Education Policy Analysis, 2001 Edition*, Paris.
- OECD** (2001 b), *The Well-being of Nations: The Role of Human and Social Capital*, Paris.
- OECD** (2000a), *Knowledge Management in the Learning Society*, Paris.
- OECD** (2000b), *Learning to Bridge the Digital Divide*, Paris.
- OECD** (1999), *Innovating Schools*, Paris.

Article by David Istance
Principal Administrator
Centre for Educational Research and Innovation (CERI)
OECD
Tel.: 33 (0)1 45 24 92 73
Fax: 33 (0)1 45 24 91 12
E-mail: david.istance@oecd.org

THE INTELLIGENT SCHOOL

On 14 and 15 December 2000 the Milan Centre for Educational Innovation and Experimentation (CISEM), a research institute reporting to the Province of Milan and the Union of Italian Provinces, held an international seminar sponsored by the province and entitled “Intelligent School – Towards the Scholastic Architecture of the Future”. It was attended by some 150 people from various professions – architects, local officials, researchers, teachers and education system administrators. Most of them were Italian but the topic also attracted speakers from other countries (Austria, Belgium, France and Mexico). François Louis was invited by the organisers to speak on behalf of the OECD in his capacity as chair of the Steering Committee of the Programme on Educational Building (PEB) since 1997. The present article is the contribution he made to the seminar.

Since its launch in 1972, PEB has been providing assistance to OECD Member and Associate Member countries participating in the Programme, the aim being to ensure optimal use of educational building resources at all levels. In liaison with various tiers of local government, it seeks to promote international exchanges on both policy issues and research and experimentation in the field of educational building, bearing in mind three main objectives:

- to improve the quality and suitability of educational buildings and thus contribute to the quality of education;
- to ensure the best use is made of the substantial sums of money which are spent on building, running, cleaning, heating and maintaining educational buildings;
- to give early warning of the implications for educational facilities policy of trends in education and in society as a whole.

The “intelligent school” approach developed in PEB’s work, particularly during the 1990s, ties in very closely with the vision emerging from the many other viewpoints expressed at the Milan seminar, particularly that of the CISEM. First, the “intelligent school” approach encourages the design of school architecture and environments that serve and foster learning. However, designing “intelligent schools” does not mean confining reflection to the role that new information and communication technologies and “smart” buildings should play in the school environment. It also means rethinking schools as “intelligently” as possible in terms of their mission and their environment.