Through the Education Looking Glass
- a future for OR

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Abstract

In support of the conference theme, comes this relatively light-hearted look at a future for OR from the viewpoint of Education. The presentation will go from the macro to the micro: from general trends in education at the tertiary level to anticipate what they might mean for OR in the new millennium.

1 Introduction

Where is the OR discipline heading? Does it matter? The amount of interest generated by such questions is strongly related to the extent that you identify with the discipline. The strength of identification is dependent upon the path you were following when first stumbling upon OR, what you feel you have gained from the stumble and the extent to which you can confidently say what OR really is about. The diversity that exists in all of these factors makes a common identification problematic. OR has thus become a broad collection of topics related to modelling theory and practice, and has moved OR away from the proactive zeal of its post WWII beginnings toward the reactionary end of Ackoff's spectrum of approaches to problem solving [1]. Therefore, to look at where OR is heading, it is necessary to consider the forces that shape us, thus to look at OR education we need to consider education forces in general and management education aspects in particular. This presentation attempts to do this. It will look at three macro moves in education: the move to virtual universities, the move to corporate education and a reactionary move to private institutions. In each of these viewpoints there will be a combination of commonly held opinions along with my own. These will be used to suggest some likely implications and opportunities for OR, particularly in New Zealand (NZ). There may be a "tongue-in-cheek" element to some of this. Certainly the presented form will have that aspect.

2 Education Forces and the Future

Government funding for universities is continuing to fall and fees for students continuing to rise. At the time of writing, the University of Canterbury had just announced uncapped fee increases for year 2000 ranging from 6 to 31%, with University of Auckland

predicting 10-15%. There is momentum here which will take a force of similar momentum to halt. How will students and their parents react? They will tend to both question the advantages of that type of education and look at alternatives. This will further encourage new forms of tertiary education to take up the market niche the new climate provides.

Other forces that will have their effect are the NZ government requiring a return on capital investment, which will encourage institutions to question their need for buildings, and the increasing power and range of telecommunications, particularly in the area of the virtual classroom.

2.2 The move to Virtual Universities

Peter Drucker predicts [4] that "Thirty years from now the big university campuses will be relics. Universities won't survive. It's as large a change as when we first got the printed book". Out of this will come virtual universities. Two emerging examples are the California Virtual University and the International University. The most recent example to cross my path is Cardean, a virtual conglomerate made up of Carnegie Mellon, Chicago, Columbia and Stanford Universities, along with the London School of Economics, promising to "develop online business education courses of the highest quality … with the world's most respected academic scholars and institutions, with the global reach and interactive capabilities of the Internet". The presentation and benefits are seductive. It is a reminder, however, that a full list of benefits are seen by a company as a necessary marketing tactic, while costs are up to the consumer to discover.

In the United Kingdom, Sir John Daniel, of the Open University, sees similar changes. He identifies 11 mega-universities emerging, where 100,000 students "live" in *no* campus, and a variety of delivery systems are used to provide the education, including two way video delivered by satellite.

Inayatullah[3] calls the virtual university school of thought the "technodreamers". Dreamers they may be but there is momentum here, encouraged by the education forces identified earlier. Further, the move to encourage learning skills over the narrower content focus of old, will tend to support the deeper levels of interactivity between student and teacher that it is perceived the net can provide. The social interaction, so much a part of current university life, can be provided in other ways. Hence, there is little to prevent this movement.

What does this mean for OR? As with other disciplines, the few academics remaining in the front line will be the teaching superstars. In harmony with this comes an opportunity for OR, where the relative youth of the discipline is an advantage, for many of the teachers and practitioners who have had a major influence on the development of the discipline are still alive. What an inspirational resource to capture in virtual form before it is too late. More from Russell Ackoff on Systems Thinking, Stafford Beer on Cybernetics, Reg Revans on Action Learning, Peter Checkland on Soft Systems Methodology, Gene Woolsey and his distinctive views on OR practice are but a few of these opportunities which could be available as building blocks for world-wide, net based programmes. The survival of the OR identity might depend on these links with it's history.

Beneath this level of teaching superstars will be the knowledge navigators: those academic helping students to help students in accessing information, interpreting and

synthesising it; turning information into knowledge, sometimes even to wisdom. In the earlier years this will be done within relatively conventional institutions, but with the move to corporate education, which we shall shortly consider, the place and form of these knowledge navigators will change. The presentation will expand on these aspects.

2.2 The move to Corporate Education

The new competitive edge in organisations will be in the area of knowledge creation coming out of much improved Knowledge Management (which will have moved into its second generation, away from IT push, and will now have a major overlap with the subject of Organisational Learning). The leading organisations will be closer to the concept of what we know today as a Learning Organisation (LO), although that term will probably be obsolete. Since Personal Mastery will be one of the critical disciplines, this will encourage organisations to take more responsibility for the continuous education of its employees. There is much interest already in this move. For instance, in the vehicle manufacturing industry in the UK, non-vocational learning while at work is promoted. The growing interest in NZ in the Business for Social Responsibility movement is also an indicator of this interest. Beyond the obvious improving performance for the benefit of the organisation, and for the benefit of the learner, improving learning at work is also often seen as a social investment [2].

In New Zealand, size is likely to work against corporate education extending into corporate universities as has begun to happen in the USA. However, the larger companies will have recognised the advantage of having greater influence over the continuous learning of its employees. With current core university subjects being taught even more by secondary schools, companies will be both recruiting more from secondary schools than from universities and seeing tertiary study as being an integral part of the workplace learning.

What will this mean for OR? With corporates looking for people with multi-disciplinary talents, but with learning abilities to gain current expertise in narrow domains as required, comes a continuing opportunity for OR training of specific form. This form is in the style of advocates like Russell Ackoff and Gene Woolsey: a blend of art and science, focused on process skills in problem solving and opportunity finding, and finding or devising techniques to suit. How this training is acquired, however, will be quite different. Corporate education is likely to become a blend of in-house and external stimuli. Students will use the experiences of the workplace as sources of problem-based learning (which will be formally credited to qualifications). OR education that has a history of student work placement and projects would be well placed to move into this arena. This would open up the opportunity to advise on the theoretical learning that would naturally emerge. However, a bricks and mortar type of university is not required for this.

The need for external stimuli and refreshment, and the need to combat increasing burnout, will lend itself to sabbaticals for company employees. These will have a relevant education slant and be expected to broaden horizons and hopefully to question established beliefs. They will need diversity and for this it is better to be exposed to people from different companies who work in different ways. These requirements can be well met by modified MBA and Executive Education programmes, which OR in its

softer form might well be a part. For refreshment, they need to be in congenial surrounds away from the day-to-day of company requirements and could be housed in private institutions.

2.3 The move to Private Institutions

The efficiency of the virtual universities will see the virtual demise of bricks and mortar tertiary institutions, but they will not disappear. Rather, the socialisation of 17-20 year olds and face-to-face discourse that are their current added values, coupled with a reaction to the stress that the "while-you-work" forms of virtual education encourages, will see their continuance. But, they will have a relative expensive per head cost. Therefore, I see a new category emerging, which will be the equivalent of the private university of today. They will have an elitist stigma to them, but will be set in congenial surrounds, with a deliberately more relaxed atmosphere to them. A partial move in this direction is the building of a $68m student centre at Columbia University, because they believe that "communities and students who are paying more than ever for education want more than a degree in return. They demand facilities that cater to the emotional, physical and academic needs"[5]. In NZ, only private funding looks possible for such initiatives.

3 Conclusions

The macro view of education indicates a move towards virtual learning and from management education as a public to a private good. These moves are expected to continue and will make corporate based education the likely home for OR education.

The worldwide macro view has a dozen mega-universities providing the core of higher education, with a much reduced number of smaller institutions managing to survive by filling the gaps. Smaller institutions will also exist to provide relaxed, congenial education for those that can afford it and out-of-house sabbatical education for some larger company employees. There will also be a growth in the number of students acting independently, arranging their own education through the net, assisted by brokers.

Tertiary education in management areas will be much more in-house for the larger companies, making much use of virtual, net-based technologies. While aspects of modelling will still be taught in disciplines such as Engineering and IS courses (for instance, through sixth-generation DSS, and spreadsheet design and application courses), OR teachers as such will all be dead, replaced by learning consultants principally working for the larger companies. Their primary role will be to provide assistance in learning processes associated with modelling problems and projects using techniques such as Action Learning. OR educators strong in soft processes and problem structuring will have a healthy future here. These same people will make useful brokers, assisting both individuals and companies devise coherent education programmes, built on the core subjects now taught in secondary schools but primarily using net-based courses and qualifications.

As Samuel Coleridge observed: " ..in today, already walks tomorrow". Yet walking through your looking glass should reveal a different world to mine. Is one right, the other wrong? Definitely not, for as Ashleigh Brilliant stated (in Pot-shot No.3217): "Don't call anything impossible, until you've been all the way through the future"!

References

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[3] S. Inayatullah, *Alternative futures of the university. Globalisation, multiculturalism, virtualisation and politicisation*, Futures, 30 (1998), pp 589-602.

[4] R. Lenzner, S. Johnson, *Seeing things as they really are*, Forbes Magazine, March 10th (1997).

[5] M. Patterson, *Edu-catering*, Buildings, 91/10 (1997), pp. 58-62.