

CENTER FOR INSTITUTIONAL REFORM AND THE INFORMAL SECTOR

University of Maryland at College Park

Center Office: IRIS Center, 2105 Morrill Hall, College Park, MD 20742
Telephone (301) 405-3110 • Fax (301) 405-3020

BEGINNING AT THE END: AN APPROACH TO INSTITUTIONAL REFORM IN HIGHER EDUCATION

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**Robert Klitgaard
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Author: Robert Klitgaard, University of Natal at Durban, South Africa

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An Approach to Institutional Reform in Higher Education

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South Africa's universities face remarkable challenges. Experience in other countries suggests that universities under similar strains can easily succumb to a spiral of mediocrity. Change is essential, and I suggest that a key to implementing change is "beginning at the end." This means emphasizing outcomes more than intake criteria or standardized pedagogical processes. A central task for universities is to mobilize abundant, credible information on outcomes, and then to link the incentives of lecturers and students to the results obtained. One possibility is to experiment with the creation and use of international examinations in a subset of subjects, a proposal of merit well beyond South African borders.

Beginning at the End:

An Approach to Institutional Reform in Higher Education¹

Robert Klitgaard²

Changes in the South African environment present severe challenges to the country's universities--challenges that, in less strenuous forms, have devastated universities in many other countries.

Consider three of these challenges:

(1) Declining resources. In the decades ahead, tremendous sums will be needed to elevate black educational levels, beginning of course at primary school, where international studies show the **greatest** benefit-cost ratios. By international standards, South Africa overspends on higher education compared to primary education. It is almost certain that government **spending** on higher education will be slashed in the decade ahead. To meet this challenge, universities will have to change.

(2) Assimilating larger numbers of black students. At the same time as their resources decline, South Africa's universities will face irresistible pressures to enroll many more black students. Yet compared to whites, black students in South Africa may lag as much as two standard deviations in conventionally measured learning ability--compared to a one standard deviation gap in the United States. Most black students will need both financial **assistance** and greater pedagogical resources. To meet **this** challenge, universities will have to change.

(3) Preparing students for an internationally competitive economy. The end of sanctions and the general internationalizing of the world economy mean that South Africa must compete as never before. Experience elsewhere shows that highly trained people

¹Several versions of this paper have been published in South Africa. A longer version **than** the present paper is "Beginning at the End: An Economic Approach to University Reform," *Theoria*, **8** 1/2, October 1993.

² **Professor of Economics, University of Natal, King George V Ave., Durban 4001, South Mica.**
Internet address: gaard@superbowl.und.ac.za

who are able to absorb and create ideas and who are capable of adaptation to change are crucial to economic development.³ Yet South Africa's universities have tended to stagnate with old-fashioned pedagogies and outmoded objectives. **To meet this challenge,** universities will have to change.

How can South Africa's universities meet these challenges? What changes will be required? Can we learn lessons from other countries?

Failures Elsewhere

In July 1991 I had the privilege of participating in a fascinating week-long workshop on higher education, under the auspices of the World Bank. Heads of universities from around the world came to Malaysia to discuss the need for change. I was struck by some similarities among universities from Colombia to Senegal to India to Papua New Guinea. Over the past two decades, many universities in low- and middle-income countries have **been confronted with versions of the same challenges South Africa now must face:** declining real resources, absorbing greater numbers of academically underprepared students, and having to produce an *élite* that can lead the country in an internationally competitive economy.

Most universities have failed to meet these **difficult** challenges. Their travails contain lessons. Here is a simplified rendition of what might be called the "standard university response" to these challenges--a response that did not work.

With regard to **declining resources**, the standard response does not want to face the long-term implications. For political reasons, budgets for student support remain high, while expenditures on **libraries**, maintenance, **and** faculty stagnate. Eventually, the physical facility and the university's most precious resource, the professorate, collapse in mediocrity.

With regard to **expanding enrollments of disadvantaged students**, debates concentrate on two issues: entrance standards and what happens in the classroom. I call these the *start* and the middle of the educational process--as opposed to the *end*, which is the outcomes actually obtained: what students learn and what professors contribute in research and service.

³A remarkable presentation of this idea, which is central to several important new theories of **economic growth**, is Paul Romer's "Two Strategies for Economic Development: Using **Ideas** and **Producing** Ideas," *Proceedings of the World Bank Annual Conference on Development Economics*, 1992, pp. 63-91.

The debate over admissions (the *start*) tends to focus on the preservation of old entrance tests and minimum scores on them. One extreme incorrectly decries the tests as culturally biased and completely lacking predictive power. The other extreme incorrectly treats the tests and minimum scores as sacrosanct. The truth tends to be lost. Around the world, admissions tests tend to be correlated about 0.4 to 0.5 with academic performance at the university and somewhat less with various measures of later-life success. Careful statistical studies seldom find evidence that the predictive power of the tests is less for members of disadvantaged social classes or racial groups. There are large gaps in test scores and in later performance among those groups, but this does not imply “cultural bias” in the predictive sense, contrary to much popular opinion.⁴

The debate over the *middle* tends to revolve around the “relevance” and “standards” of the subjects taught and the pedagogical methods employed. One side seems to equate high failure rates with evidence of social irrelevance and bias. The other side seems to believe that high failure rates are necessary to preserve standards.

In most developing countries, the first side of these arguments tends inevitably to win. Admissions tests are downplayed and standards are lowered, at first with the argument that “the poor should be given a chance at least.” But then when too many of the new entrants fail at university, the next step is pressure to make sure they pass. Then “the middle” tends to buckle: courses become more “relevant” and less “academic.” Eventually, the pressure point reaches graduation itself. The university degree is devalued. And as a consequence, unemployed or unproductively employed graduates are a common phenomenon.

The third challenge is to **compete internationally**. Given the first two failures, it is not surprising that most universities in developing countries have failed to do this. Even the best students are unable to compete with those trained in the industrialized countries. As a result, a country’s economic performance begins to lag, and dependence grows.

The remarkable message of the Kuala Lumpur meeting was that around the developing world, universities are in financial collapse, with vast student bodies serviced by poor quality instruction, producing graduates unable to fulfill national needs. The situation is truly alarming.

⁴ Robert Klitgaard, *Elitism and Meritocracy in Developing Countries* (Baltimore: Johns Hopkins University Press, 1986).

And yet I believe it is fair to say that the challenges that facing South Africa's universities in the decade ahead will in many ways be even more severe. The pressures on resources will be greater. The numbers of disadvantaged students and the extent of their disadvantage will be greater. Compared with the previous two decades, in the **1990s** the pressures of international competition and therefore of international standards of excellence will be greater.

The standard response gives us an idea of what not to do. What might we try instead?

An Economic Analogy

At a workshop about the teaching of economics, I drew an exaggerated analogy. I said that our Departments of Economics at the University of Natal, Durban and Pietermaritzburg, resemble a factory in Vladivostok, embedded in a university that resembles Russia. The students and teachers in this factory are making in many ways a **heroic effort in the midst of a system that suppresses relevant information, provides** meager or even adverse incentives, and hopes to find its way out of crisis by cutting investment and maintenance, raising new funds, and denying that economic principles are involved in the crisis it faces.

This is clearly a provocative if not libelous comparison. But I wanted to point out parallels between our impending crisis and the need for radical reform in countries like Russia. The need there and here is not just for better management, not for more dedication to old principles, not for more central control. Even “more resources” is not, in my opinion, the solution.

Instead, we must experiment with **structural change. *Experiment* is a key word here.** We have no blueprint with the answers; even if we did, we need everyone to participate, **to own the solution, to develop solutions in the plural. No blueprint, then; but many of the** needed experiments will have common themes. To an economist, structural change means **above** all the reform of incentives. Always problematically, never as simply as “let the market work,” prices and wages must be linked to their social values. Competition must be enhanced. Excellence must be rewarded. These themes will be key to the success of reforms in Russia and in many other shattered economies. I believe it is also the key to our avoiding the disasters that have struck many universities in developing countries.

Two Worrisome Tendencies

The University of Natal has admirably **crafted** a mission statement, and even more admirably its leadership is now completing remarkable effort at strategic rethinking and structural reform. I am not privy to the details or the current status of the many proposals being debated. But I do sense two worrisome tendencies.

First, the “standard university response” noted above--the response that failed in so many universities--is incipient here. Many faculty members and students wish not to face the prospect of declining resources in the long-term. The debate over more disadvantaged students has focused on “standards” and “relevance” at the start and the middle. The need to produce many students who can compete internationally has not sunk in--in part **because** of what **I** believe is our overly **inflated** view of our current standards. **We** tend to think that most of our graduates are fine; I’m **afraid** that most of them are not internationally competitive. We still tend to have the idea that an education is the transfer to students’ brains of six boxes of knowledge, instead of the creation of powerful and creative thinkers who can adapt and learn for themselves.

Second, when faced with the need for change, many of us tend to react in terms of process, organization, and resources instead of *outcomes, information, and incentives*. We tend too **often** to seek top-down solutions, rather than ways to **free** up competition and innovation across the university.

“Beginning at the end” is my shorthand description of an **approach that escapes** these two tendencies. Let me illustrate the principle with a brief and schematic example.

International Measures of Outcomes

Imagine the following experiment. Choose a subset of subjects for which “international standards” fairly clearly exist. For example, physics, computer science, statistics, economics, and biology.

Reconceptualize “international standards” not as a binary variable--yes/no, **pass/fail**, meets them or does not--but as a continuum. Thus, a “standard” now means a metric, **through** which it makes sense internationally to say something is **excellent**, something else is good, something else is fair, something else poor. For conceptual purposes, think of a 0 to 100 scale.

Now imagine a consortium of educators **from** these disciplines and **from** many countries, including South Africa, and with the participation of organizations like the **African** National Congress. Suppose this group, supported by foreign donors, designed

tests that measured the continuum of competence in physics, computer science, statistics, economics, and biology **after** the first and third years of university. The tests would measure thinking ability and problem-solving rather than memorization.

As an analogy, consider the standardized achievement tests in these and other fields offered annually to university graduates in the United States. These achievement tests are parts of the Graduate Record Examination. The tests take three hours per subject.

Like the GRE, **no such** test would be perfectly valid or **reliable**. But in the South **African** context, facing the pressures universities will be facing in the decade ahead, creating and using such examinations could offer some remarkable advantages.

1. *Recast the debate.* Using such metrics of performance would focus discussion on the competencies to be gained at the university, rather than on the admissions standards or the particular reading lists and lecture schedules. We would begin at the end, not at the start or the middle.

2. *Improve incentives for students.* Using such metrics of performance would avoid the pernicious tendency of this university's students to think almost entirely in terms of pass/fail. Students would have new incentives for achieving excellence.

3. *Protect against declining standards.* Using such metrics of **performance** would offer a **continuum** of outcomes, credibly and independently certified, with international meaning. Having such scales would enable a variety of experiments without the risk of the unraveling of standards that has sunk universities in other countries. For example . . .

4. . . *Experiment with admissions standards.* Suppose many more disadvantaged students were admitted with lower-than-usual **matric** scores. Suppose that at the end of his or her third year, one such student got a 40 on the 100-point scale in statistics. The student might still protest, but the university would be insulated from the charge of arbitrary, irrelevant, or outmoded standards.

Suppose another student earned an 80. No matter whether "admissions standards have fallen" or whether "the average graduate isn't as good as before," that student's excellence would be credibly earned and communicated to the outside world.

The central point is that today's (binary) credential or signal would be usefully supplemented by a much more fine-grained and internationally meaningful measure of learning. This in turn would enable us to experiment with admissions **standards, including** the enrollment of many more black students.

5. *Transform faculty incentives.* The professorate could be challenged with incentives without fear of grade inflation or corruption.

A recent review of the voluminous research on pay-performance schemes draws several interesting conclusions. Although the linkage schemes vary and methodological problems, as always, plague empirical estimation, a good rule of thumb is that linking pay and productivity induces a 20 percent increase in productivity, other things equal. Another rule of thumb: incentive and bonus payments should **not exceed 25 to 30 percent** of the base pay. Research also indicates, though less robustly, that pay-for-performance schemes work better when employees participate in defining objectives and performance measures.⁵

To the faculty, the idea might be put this way: We all agree that your salaries are too low. In this political climate and economic situation, the only way we can **afford** or justify pay raises is **if we** can show that they are linked to increased productivity and better student outcomes.

One should push for *experiments* rather than master plans. A possibility: "Bonuses of up to 25 percent will be paid based on the performance of your department's students on the international examinations, with special weights for the performance of disadvantaged students."

6. Foment pedagogical innovation. Teachers would be encouraged to experiment with **different** educational techniques, and information about the results would be publicized. Because of new incentives, innovations that worked would spread.

7. Raise the economic value of the education. With these reforms, teaching would improve, students would work harder, and the value of the (continuous not binary) credential earned would increase. Therefore, those paying for a quality education would be willing to pay more.

8. Mobilize international funding. The strategy of beginning at the end would provide a unique focal point for donor-s. Here is a **university** saying it is committed to international standards, but also not constrained by the usual debates over entrance criteria and defenses of status quo teaching techniques. Would this not be an even more exciting place in which to invest in potentially transferable experiments in educational development, pedagogy, and evaluation?

9. Recast the politics of institutional change. From the perspective of institutional change, the battle lines would change dramatically. For example, the role of the

⁵ Alan S. Blinder, ed., *Paying for Productivity: A Look at the Evidence* (Washington, D.C. : The Brookings Institution, 1990).

university's top management would **shift** away **from the perception of** centralized decrees and cut-backs. Instead, a central task for the university's leadership would be the development of rich systems of information about outcomes and strong linkages between outcomes and incentives. This in turn would open up opportunities for different teachers and departments to experiment with pedagogies, to work harder, and to learn from each other. And this in turn would create an environment attractive to the very best faculty members.

In short, the academic **staff** and the administrators would see themselves as enabled **and empowered by the** needed reforms, instead of what is so **often** the case: feeling powerless and victimized by reform.

10. Provide a strategic focal point for university reform. Beginning at the end might provide the basis for a simple, dramatic, and mobilizing example of university leadership. Here is part of an imaginary speech by a new Vice Chancellor of a South African university: "This University proposes an unprecedented program of defining international standards by which its education will be judged. Such standards will enable us to undertake bold experiments to learn for us and for other universities how best to admit, motivate, and educate our students. They will enable us to meet the challenges of educating historically disadvantaged **South Africans** while raising our standards of excellence and relevance. And these standards will enable us to put more pedagogical power back in the hands of the professorate where it belongs."

Problems with Beginning at the End

If beginning at the end were easy and natural, there would be no need to call for it. The proposal is radical, and it faces several important objections. Here are a few:

Measuring results externally violates each department and indeed each professor's desire to set **his or her own standards**. This objection could be partially addressed in two ways. **The departments** could still define where on the scale "pass" would be defined. And in honours and masters courses, the current system of locally defined standards could remain. In any case, given South **Africa's** challenges, the alternative as I see it is not a pleasant status quo but instead the spiral of decline we have seen in universities in other middle-income countries.

Incentives violate the academic culture, which is egalitarian and not individualistic, motivated by an academic calling and not by money. Currently, lecturers' pay is not only low, it is unconnected to their success in teaching. There are many reasons, good and bad,

for this phenomenon. One is that we count on professional ethics and calling, another is that we wish to avoid a training-school mentality. A third is that it is hard to measure outcomes and to control for the extrinsic factors beside teaching that affect them. One can pile on the reasons why incentives in higher education, and indeed in business and government, are not a good **idea**.⁶

And yet. Around the world, reforms in incentives are increasingly seen as the key to institutional reform. In the United States, **efforts to reform** incentives in the public schools have generally moved **from** individual incentives to school-wide or departmental **incentives, from** test scores to peer judgment of teaching excellence. In part because the egalitarian culture of public schools makes competition among colleagues too threatening, team incentives prove more **successful**.⁷ For this reason, the greatest share of the **results-based** faculty incentives might be awarded by department.

*International tests would be **difficult** to impossible to develop for fields like the humanities and the law.* My suggestion is to begin with a few fields for which international standards would be recognized by most people. With other fields, the university's leadership would encourage the university's faculty members to develop their own, measurable standards of excellence--imperfect though these may be. The university's leadership would make it clear that these subjects were equally important and would try to raise funds for them. **But from** the Vice Chancellor on down the crucial message would remain: we must get away **from** the binary measurement of success, must stimulate more information about outcomes, and must link incentives for both students and faculty to those outcomes.

Has this idea worked elsewhere? Incentives based on results are increasingly used in universities around the world. Nonetheless, to my knowledge the reform proposed here has not been tried elsewhere. It would be nice if we could follow many such experiments in higher education and learn **from** them. On the other hand, we can learn **from** many

⁶ **Rosabeth Moss Ranter** emphasizes the importance of performance-based pay in the corporation of the 1990s. She highlights five key **trade-offs** in incentive systems: (1) individual vs. group contributions, (2) whole agency vs. units, (3) discretion of management vs. automatic or **target-based** rewards, (4) incentives related to base pay vs. relative to the value of the contributions to the agency, and (5) a single system vs. multiple systems. *When Giants Learn to Dance: Mastering the Challenge of Strategy, Management, and Careers in the 1990s* (New York: Simon and Schuster, 1989), ch. 9.

⁷ **Linda Darling-Hammond and Barnett Barry**, *The Evolution of Teacher Policy* (Santa Monica, CA: The RAND Corporation, 1988), pp. 5 1-68.

examples in private and public management, and in secondary and primary education around the globe.⁸

Moreover, in environments like ours the alternatives are hardly promising. Experience at other universities that have faced challenges resembling South Africa's suggest that other strategies have seldom succeeded. I conclude that if we adopt an experimental approach, the idea's many advantages are worth a try.

Doesn't "international standards" imply Oxbridge and the Ivy League? A South African university shouldn't try to be a haven of excellence, which is what this idea implies. This objection represents a serious but understandable misrepresentation of my suggestion. Remember how we reconceptualized the idea of international standards as a metric, not a cut-off. The point is to escape a binary classification and think in terms of a continuum.⁹

The point of the internationally certified exams is not that every department should try to be Stanford or Heidelberg, or for that matter Hull or San Diego State. Rather, we hope that an international metric will stress the thinking and problem-solving skills that are needed for our students to be internationally competitive, rather than the "six boxes of knowledge" approach that tends too often to dominate here. We also hope that through an externally set, internationally recognized exam, we will be able to avoid the disastrous dynamics of mediocrity and irrelevance that have plagued many universities in other countries.

Our university does not have the capacity to change. Even if we "begin at the end," we don't have the managerial or entrepreneurial talent or spirit to meet the challenge.

The evidence cited for this view is the lackadaisical, uninnovative behaviour of many faculty members.

I do not have evidence about universities in South Africa. But this argument is an instance of a quite general one, which is often quite mistaken. Evidence in many other areas shows that what looks like laziness or lack of skill in an organization is the

⁸ In addition to the references noted above, see Robert Klitgaard, "Incentive Myopia," *World Development*, Vol. 17, No. 4 (April 1989).

⁹ By the way, a similar misunderstanding plagues discussions in economics of "quality." Two good uses of the word can be mixed up. One is quality control in the sense of zero defects. The other idea is that it pays everyone in the market to have grades and standards so that various levels of quality can be credibly distinguished. The optimal level of quality for a particular firm or organization may not be the highest quality. It is this second sense of quality, that of a dimension measured continuously rather than a discrete target at the top of the scale, which I am advocating.

consequence of a lack of information about outcomes and a lack of incentives linked to those outcomes.¹⁰

Putting it positively: when one does “begin at the end” by creating credible and varied outcome measures and appropriate incentives, one is often pleasantly surprised by the initiative and excellence that ensue.

¹⁰ For an **analysis** of this argument **applied** to decentralized government, see Robert **Klitgaard**, *Adjusting to Reality. Beyond "State vs. Market" in International Development* (San Francisco: ICS Press and International Center for Economic Growth, 1991), ch. 9.