



KUDOS FOR A RADICAL COLLEGE

Daniel Kleppner

Guidelines for a radical institution of higher learning, a utopian college:

Examinations. *The college shall conduct no examinations.* Examinations are hated by students and faculty alike. For students they are torture; for faculty they are a drudge.

Grades. *The college shall assign no grades.* Grades cause unhealthy competition. They can be hurtful to weak students and induce complacency in good students. Grades are usually arbitrary and often unfair.

Degrees. *The college shall grant no degrees.* Love of learning is among the great aspirations of the human spirit. To study for a degree—a scrap of paper intended to satisfy one's vanity or to serve as a mere occupational license—is to compromise this aspiration.

Entrance requirements. *The college shall have no entrance requirements.* Having rejected examinations, grades and degrees, the college would be false to its ideals if it required any sort of accreditation of its students.

"Naive" is perhaps the kindest adjective one could muster for these guidelines. Nevertheless, such a college exists and it functions remarkably well. It is the Collège de France. The Collège de France gives neither exams nor grades, grants no degrees and is open to all. Its small faculty comprises luminaries in science, the humanities and the arts. In spite of its age, over 450 years, and its radical principles, the Collège de France is so successful that it must be ranked high on any serious list of the world's great educational institutions.

Here is how it came about: In the 16th century, the University of Paris had a monopoly on advanced learning in France. The university, however, was a stodgy place. Its faculty took no delight in the fresh breezes of the Renaissance that were blowing across Europe. Realizing the difficulty of

breathing new life into the ultraconservative university, King Francis I decided (with some prompting from his head librarian) to appoint a few Royal Lecturers to spread the new learning. He started off by attempting to hire Erasmus. As academic stars are wont to do even today, Erasmus hemmed and hawed and eventually declined. Finally, in 1530, Francis I elected a faculty of six Royal Lecturers—three in Hebrew, two in Greek and one in mathematics—to give public lectures. The lectures flourished. Over the years new chairs were added, and a little college took form. Its popularity became so great that it sailed through the French Revolution, the only royal institution to be preserved intact. Eventually it acquired its present title, the Collège de France. Today there are 52 chairs, about 20 in the sciences and 30 in the humanities.

To avoid inbreeding, Royal Lecturers were not required to hold academic degrees. This antiestablishment rule still holds. The tradition is more radical than it might seem, for diplomas are venerated in France. Without a diploma, you cannot even aspire to sell stamps. The key to the success of the Collège de France through the centuries, however, is a far more radical tradition. No faculty chair is reserved for any discipline. As subjects wax and wane, chairs come and go.

In his tell-all autobiography, *Time Reversal*, Anatole Abragam devotes a chapter to the Collège de France, from which he retired some years ago. His chair, Nuclear Magnetic Resonance, had previously been Arabic Literature; upon his retirement it became Geodynamics. Although the politics behind the filling of chairs can be Byzantine, the Collège de France has somehow found the secret for avoiding the peril that lurks within Weil's law for faculty appointments, which goes something like "First-rate people choose first-rate people; second-rate people choose third-rate people." Physicists who held chairs at the college include André-Marie Ampère, Jean-Baptiste Biot, Léon Brillouin,

Paul Langevin, Francis Perrin and Frédéric Joliot. On the faculty today are Claude Cohen-Tannoudji, Pierre-Gilles de Gennes, Marcel Froissart and Philippe Nozières. The faculty of the Collège de France is peppered with France's intellectual and artistic leaders. Pierre Boulez holds a chair of Invention, Technique and Language in Music. Claude Lévi-Strauss, Roland Barthes and Michel Foucault were all members of the Collège de France in recent years.

Lectures at the Collège de France are attended by approximately five thousand "auditeurs": scholars and scientists, professional and nonprofessional enthusiasts, and people who are simply curious. The lecture halls often overflow. This spectacle might give the impression that the Collège de France exists solely to provide an intellectual entertainment for the citizens of Paris. However, behind the scenes is a structure of research laboratories and approximately six hundred graduate and postgraduate research students from nearby institutions. In addition, the college has its own laboratories and a small staff of senior research associates.

Utopianism is rampant not only in the philosophical underpinnings of the Collège de France but also in its administrative structure and teaching function:

Administration. A good rule of thumb on administration is that less is better. At the Collège de France there is hardly any. The college is administered by an official elected from its members, who is given the modest title of Administrator. The Administrator is also the chairman of the faculty.

Teaching load. The duties appear to be ridiculously light: 18 one-hour lectures and seminars per year for the scientists, 24 for members of the arts faculty. However, teachers should think twice before rushing to use the model of the Collège de France as an argument for reducing their teaching loads. There is a small but deadly rule of which they should be aware: Lectures are *never* repeated!

The Collège de France teaches new

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knowledge, not old knowledge. The thought of generating enough new ideas to come up with a fresh course of lectures every year would give most scientists the shivers. Furthermore, no cheating! Before every lecture the professor must personally sign a register. However, the college has a more serious method for quality control, a system so insidious that it must cause nightmares: If one's lectures become dull, the audience stops coming.

Can one carry away any useful ideas on education from the Collège de France? At first glance, not many. The Collège de France has no obligation to fulfill the conventional tasks of education. Its goal is to teach at the frontiers of knowledge; getting the student to the frontier is somebody else's responsibility. Furthermore, it is difficult to think of adopting the model elsewhere. The Collège de France is a particularly Parisian institution that flourishes in Paris's heady cultural, intellectual and scientific atmosphere.

Nevertheless there are some useful things to be learned. In the United States we venerate youth and are generally suspicious of old institutions, particularly old elite institutions. The Collège de France is very old and very elite, but excellent nonetheless. In spite of its age, it remains flexible and innovative. For example: Europe is changing rapidly. In many respects, the national boundaries are evaporating. The Collège de France now authorizes the faculty to give one-third of their lectures anywhere in the European Community, and it has established a new chair, the European Chair, to be filled annually by a visiting professor from elsewhere in Europe.

The most important lesson of the Collège de France, however, is that sometimes utopian ideas work. Even today its guidelines are radical—the college seems to have been founded at least four hundred and fifty years ahead of its time. Today in the United States we seem to be heading downhill in science education. Individuals and groups scattered across the country are trying to reverse the slope. A strong streak of idealism is essential to undertake such a formidable task. Idealism in education is easily ridiculed, but the Collège de France gives cause for hope. Idealism can work. Four hundred and fifty years before your time is not necessarily too soon.

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