

# The Unity of Teaching and Research

## *Humboldt's educational revolution*

BY IAN McNEELY

It is an axiom of modern higher education that universities must not only teach what is already known, but also push back the frontiers of knowledge by investing in pure research. Vannevar Bush, the architect of America's post-World War II science policy, helped make this case in *Science: The Endless Frontier*. Writing in 1945, Bush argued that the immediate, practical payoff of basic research can never be seen in advance, but that life-saving and life-enhancing discoveries quite often result when scientists are free to indulge their intellectual passions.

Since that time, government, universities, and the American people have repeatedly demonstrated their commitment to the pursuit of pure knowledge. But in the 1990s, when federal funding was slashed for the Superconducting Supercollider, cutting off billions of dollars earmarked for probing the deep structure of matter, many observers began to fear that the heyday of big-budget "big science" was over. Meanwhile, the phenomenal takeoff of profit-driven corporate research has only fueled apprehensions that universities' research missions might be in peril. Today, professors in fields like computer science and biotechnology routinely leave academia for the private sector to escape teaching obligations while continuing to enjoy intellectual freedom.

All this would have perplexed Wilhelm von Humboldt, the founder of the modern research university, who saw cutting-edge research as inseparable from, and in fact identical to, good teaching. Humboldt (1767–1835) was a German aristocrat, a formidable scholar of classical and modern languages, a close personal friend of the literary giants Johann Wolfgang von Goethe and Friedrich Schiller, and the brother of a famous, globetrotting natural scientist, Alexander. In 1810, as part of a top-to-bottom program of educational reform in his native Prussia, Humboldt shepherded a new university into existence in Berlin. It soon attracted professors like G. W. F. Hegel and Arthur Schopenhauer; its diverse crop of alumni counted both Karl Marx and, much later, the African-American scholar W. E. B. DuBois. The center of German intellectual life throughout the nineteenth century, Berlin provided the model on which virtually all research universities, from Johns Hopkins to

*Quotes by Humboldt used in this essay are from Wilhelm und Caroline von Humboldt in ihren Briefen, edited by Anna von Sydow, and Gesammelte Schriften.*

Harvard in the United States, were either founded or reformed.

Before Humboldt, it was by no means clear that the university, a medieval institution dedicated mainly to training preachers, doctors, and lawyers, would become a sponsor of research at all. The most prestigious universities, like Oxford and Cambridge in England, were best known for refining the manners of young gentlemen, and Göttingen in northern Germany even offered classes in fencing and horseback riding. Magnets for student revelry then as now, many universities failed even at this task and came to be seen as cesspools of alcoholic indiscipline.

Thinkers of the Enlightenment, many of whom scorned the university as a relic of the Dark Ages, placed higher hopes in aggressively modern academies of science founded to support the investigations of gentleman scholars. London's Royal Society, the archetype of the scientific academy, was presided over by no less a luminary than Isaac Newton, and the academy in Berlin was founded in 1700 by Gottfried Wilhelm Leibniz, who shares credit with Newton for inventing calculus.

Looking back a century later, however, Humboldt found that academies had produced little significant research, whereas many of Germany's brightest thinkers taught in its universities. This recognition helped convince Humboldt to combine academic research with the university's historic teaching mission. Synthesizing the best of both modernity and tradition, he forged the world's most dynamic and influential intellectual institution.

Humboldt was an accidental revolutionary. Stationed in Rome as ambassador to the Pope before being summoned to Berlin in 1808 as chief of Prussia's Department of Culture and Education, he was reluctant to leave the Eternal City. His light ambassadorial duties had left him ample time for scholarship and personal cultivation, both centered on the study of the ancient world. In addition, his wife was pregnant, and she and their children would have to stay behind for what was to be a two-year separation. But Prussia had recently suffered a humiliating defeat at Napoleon's hands, and Humboldt felt the call of patriotism and the pangs of ambition. So he set off across the Alps to a homeland ravaged by war.

Prussia's king had lost a great deal of land, money, and power to Napoleon, and resolved (famously but

perhaps apochryphally) to "replace in spiritual powers what we have lost in material strength." Humboldt, having consecrated his life to the values of classical humanism, was a natural choice to superintend Germany's cultural renewal. A personal favorite of the king, Humboldt found an extraordinarily warm reception back in Germany and was granted an open mandate by his ministers. Bemused, he wrote to his wife that "people act as if, without me, no one in Prussia could learn to read." Taking advantage of his happy situation, he determined to make the benefits of his own learning and intellectual well-roundedness widely available to others.

Embarking on a massive overhaul of Prussian schooling, Humboldt constructed the world's first integrated system of education by linking primary, secondary, and post-secondary schools together. At all levels, he emphasized individual cultivation, not the mere mastery of useful skills, as the ultimate end of all pedagogy. The thirty thousand primary schools opened or refurbished in the first half of the nineteenth century helped secure universal access to education as a public responsibility of the state. His elite high schools, the *Gymnasia*, championed study of the classics in an age dominated by utilitarian ideologies of scientific practicality. But the vindication of the university formed the crowning achievement of Humboldt's educational revolution: by solidifying the foundations of schooling through careful, structured design, he could then envision the university as a haven of absolute intellectual freedom.

Humboldt's own university experience had, to be sure, been brief and decidedly mixed. A stimulating year spent studying the classics at Göttingen, at that time perhaps the best institution of higher education in Europe, had followed a disappointing stint at a provincial eastern German university in 1787. There, the teachers were numbingly pedantic, dispensing predigested information in long lists of citations by page and paragraph number and lamely spicing up their presentations with "stiff professor-like jokes." Students became bored and lazy and talked throughout the lectures, and one of them habitually brought a large, noisy dog to class.

Humboldt favored a much freer, more intellectually intense lecture style in the plans he drew up for Berlin's university. A good professor, to him, did not collect and regurgitate dead facts, nor even wrap them

in an enthralling, entertaining, amusing presentation. Better that the scholar should be seen thinking on his feet, clumsily, haltingly if need be, and invite students to think along and come to their own conclusions. Humboldt's ideal learning environment, in fact, was much closer to the seminar, and in his university the word "seminar(y)" ceased to denote a place to train clergymen and came to refer to a group of scholars engaged in active, collaborative research, usually in preparation for high-school or college teaching careers themselves. But the seminar's underlying purpose remained the same: to train the next generation of educators to teach through the spoken word—in the classroom, rather than the pulpit.

It is hard for us today to appreciate the novelty and boldness of Humboldt's redemption of face-to-face learning. Because the eighteenth century had been the golden age of the printed book, its most advanced thinkers had put their faith in the written, not the spoken word. The gigantic (twenty-eight-volume) *Encyclopédie* of Diderot and D'Alembert was the Enlightenment's most celebrated effort to systematize all human knowledge, and its backers honestly envisioned it as a complete, ultra-modern resource for self-education that would fit comfortably on one shelf. That today's high school graduates, rather than procuring a set of quality encyclopedias and setting off into the world, spend far more money and time in college, is a testament to Humboldt's vision.

Spontaneous, ongoing, research-oriented oral interaction between teachers and students not only made more pedagogical sense than codified, objectified book-learning; it also better suited the inherently provisional, incomplete nature of all human knowledge. Among Humboldt's guiding principles was a belief in knowledge as "something still not completely discovered, and never completely discoverable." This appealed to an age when the very success of academic research had made the encyclopedists' passion to systematize and codify all knowledge infeasible. Assembling "mere masses of dead facts" must give way to the much more important pedagogical task of emboldening the "spirit to command an entire field." However faint its echo in today's dry academic writing, Humboldt's fundamentally Romantic conception of scholarship as an endless, Byronic quest lives on in the institution he created.

First-hand experience with the joys and frustra-

tions of what was *not* yet known was the crux of the learning experience at the university level. Nothing, to Humboldt, contributed more to the development, not just of intellectual prowess, but individual moral character. Research taught newly minted *Gymnasium* graduates the virtues of "loneliness and freedom," the ability to stand on their own feet. At the same time, the emancipation from schoolmasterly oversight oriented students toward a higher communal purpose: "The teacher no longer exists for the sake of the student; both exist for the sake of knowledge."

United by the common bond of research, teachers and students would coalesce in "unforced and open-ended togetherness" without any further prompting. All this left state authorities to pay the bills and keep their distance; well-formed citizens would then naturally result, "because only knowledge that comes from the inner person and that takes root in the inner person transforms character, and the state, like humanity itself, is less concerned with knowledge and talk than with character and action."

Such idealism made Humboldt's university much freer than any of its modern counterparts. There were no exams, no grades, no prescribed curricula, and no majors, though students did formally register in one of four faculties—medicine, law, theology, or the research university's new centerpiece, philosophy, where the newly instituted Ph.D. degree, awarded in all the arts and sciences, certified the student's originality within a field, rather than mastery over it.

Freedom of learning was complemented by freedom of teaching. Instructors were allowed to teach whatever they wished. Full professors, salaried by the state, offered public lectures absolutely free of charge. Junior scholars, by contrast, lived from lecture fees paid by students, which made them responsive to student demand and encouraged healthy competition to fill seats. Berlin also lured prestigious scholars from other universities, giving rise to a nationwide scramble for talent that ultimately spurred the rest of Germany's universities to catch up. All the ingredients, in short, were in place for a true marketplace of ideas, and Germany became a mecca for scholars from around the globe in the nineteenth century.

Indeed, in assessing the nineteenth-century origins of modern culture, it is not an exaggeration to say that Germany's educational revolution was to intellectual freedom what the French and American

Revolutions were to political freedom and the Industrial Revolution was to economic freedom. All three transformations promoted a distinctly modern form of liberty centered on the emancipation of the individual. What democracy provided in the political sphere, and capitalism in the economic sphere, Humboldt's revolution provided the realm of what Germans of his generation called "spirit"—a moral character formed independently of any established church or religion, yet linking the individual to the rest of humanity.

Humboldt's university was a temple of secular humanism perched at the very top of the educational system. True, it offered its character education only to the brightest and best-prepared students, and clearly reflected the elitism of Humboldt's own mandarin circle. The distinctively American contribution to higher education, by contrast, has been to couple the traditional mission of the university with democratic inclusiveness. Still, even in this country, the hierarchy of academic merit remains the one form of elitism our egalitarian society actively promotes.

America's democratic commitment to higher education is, in fact, fraught with its own special dangers. In particular, we hear a lot about the difficulties universities face in balancing their research and teaching obligations, with professors being enjoined to cater their teaching to the masses while pursuing ever more arcane avenues to truth in highly specialized research. Yet what many contributors to this debate see as an unresolvable tension, Humboldt would have viewed as a false dichotomy. This suggests that while we continue to insist that the university serve both functions, we have lost sight of what truly unites them in a common educational vision.

The forgotten lesson of Humboldt's revolution, then, is that the modern research university was originally designed to serve humanistic rather than

scientific goals. Research in Humboldt's sense does not depend on big budgets, fancy equipment, or a steady stream of technological breakthroughs making us healthier, wealthier, and (possibly) wiser. But it does depend on making specialized academic inquiry serve a greater pedagogical end.

The research university's highest aim is the cultivation of character, not the ascertainment of truth. Or rather: the uncompromising commitment to seek the truth, to pursue knowledge, a quest that in principle can never be completed, is the distinctively modern twist that Humboldt added to the ancient and medieval conceptions of character education. Teaching through research is one of the few forms of overt moral tutelage compatible with the openness, freedom, and religious diversity of modern society. Its unity at the university level simply forms the highest part of a mission ultimately belonging to the entirety of humanity:

Forming the human being is not merely a task for the educator, the religious teacher, or the lawgiver. Just as every human being, in addition to whatever else he can be, always remains a human being, so it is his duty, along with all the other business he may conduct, always to take practical consideration of the intellectual and moral cultivation of himself and of others.

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