

Curricular Responses to “Electronically Tethered” Students

Individualized Learning Across the Curriculum

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PERSPECTIVES

Curricula must be designed to move students toward ever-greater intellectual autonomy and self-confidence, obviating by design the need for dependency on previous mentors

MOST AMERICAN STUDENTS enter college at a time when they are still forging their identities and seeking a place in the world. Yet many or most of today's students are increasingly dependent on their parents and stay more firmly connected to previous support networks via the “electronic tether” than did their predecessors. A recent e-mail from a close friend confirms that even well-intentioned parents are fulfilling their own desire to be needed by enabling dependent behavior. About two weeks after delivering her son to a private liberal arts college, my friend writes that “Biff [not his real name] has yet to say good-bye, but I.M. and cell phones keep us close. I have proofread a few [of his] papers . . . we are not missed.”

While it's good to know that parents love and care for their kids, it's also troubling to find that many students rely on their parents for help with papers and lab reports—and it's disturbing that parents don't see anything wrong with that. In a recent study (Hofer et al. 2009), 19 percent of students reported that parents proofread their papers and 14 percent admitted that parents edited their papers. Kennedy and Hofer (2007) found that, on average, college students communicate with their parents ten times per week. Recent surveys have also found that students *want* parents to be hovering

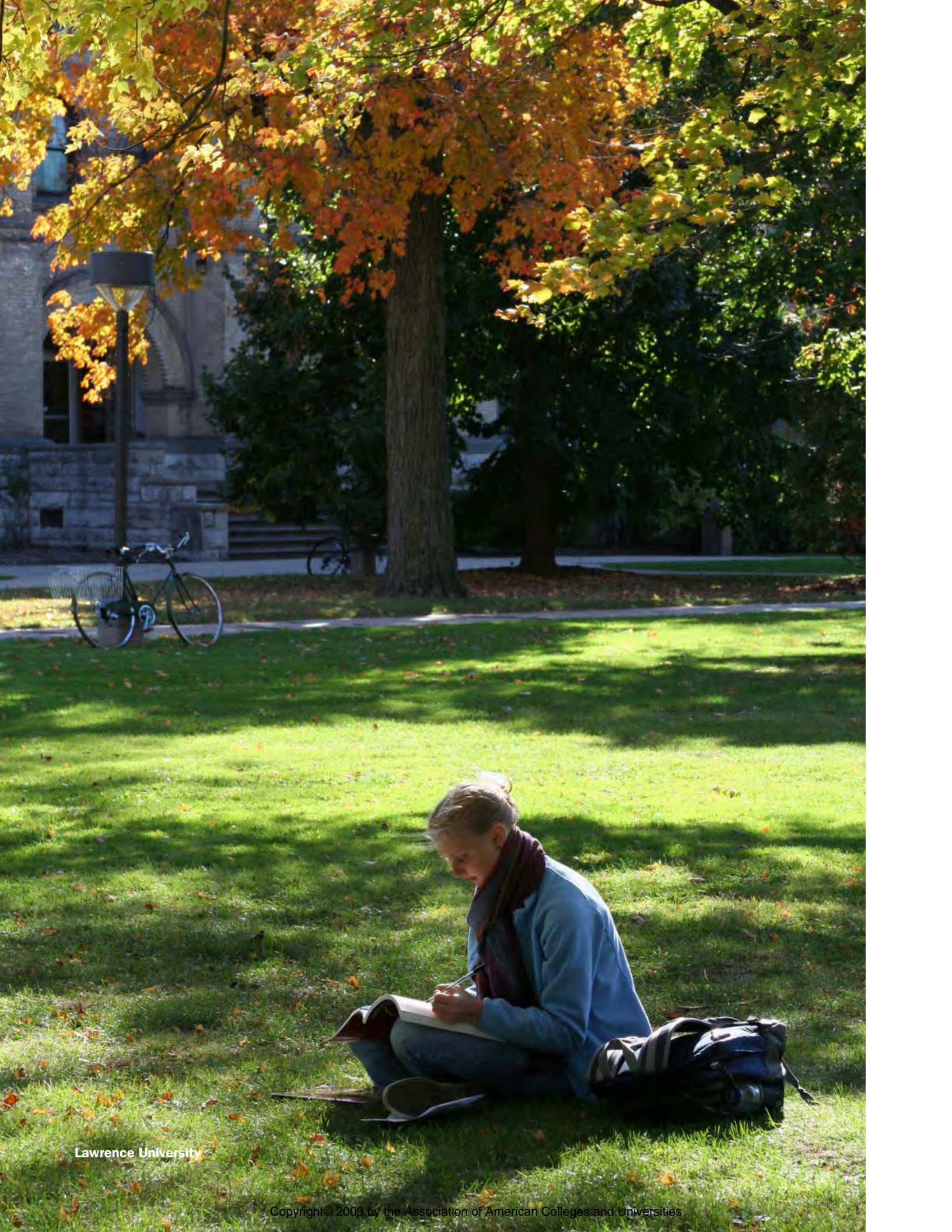
and might even welcome additional parental input in student decision making (Hoover 2008). Not surprisingly, Hofer et al. (2009) found that the high frequency of communication is related to increased dependency and parental regulation of both academics and student behavior, and it is correlated with reduced student autonomy.

Many colleges have responded to the issue of “helicopter parents” with parent orientations, newsletters, and new administrative officers—parent coordinators who “manage” parental interactions with the university administration (Coburn 2006; Lum 2006). All of that is fine, but what about the students? We know that the most academically successful students are those who are self-regulating and responsible for their own behavior (Hofer, Yu, and Pintrich 1998). How can we prepare our students to take on the challenges of the twenty-first century, much less become leaders, if we can't discourage them from relying on Mom and Dad?

We argue that the professoriate needs to be ever more mindful of the most basic goals of a college education and of how those timeless goals intersect with current student environments. More specifically, we suggest that curricula must be designed to move students toward ever-greater intellectual autonomy and self-confidence, obviating by design the need for dependency on previous mentors. Our claims emerged from a yearlong, campuswide study of what we have come to call “individualized learning,” a way of reaching students where they are intellectually and developmentally and bringing them to increased intellectual autonomy.

The term “individualized learning” at first raises visions of exclusive use of one-on-one tutorials and other time- and labor-intensive

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Lawrence University

pedagogies. In our year of discussions, we learned that individualized learning can also occur in thoughtfully structured seminars and courses, even large ones, in which students play a significant role in their own learning. Equally important to individualized learning is an atmosphere that nurtures diverse interests, values initiative, and celebrates accomplishment. It is our view that the emergence of distinct individuals—-independent thinkers, leaders, and innovators—depends on a commitment to individualized liberal learning.

Studies show that giving students increasing responsibility for their own learning, even in group settings, builds autonomy. In fact, McGlynn (2005) and others argue that millennial students may best be engaged by cooperative learning exercises and decision making that is part of coursework. Similarly, Hawker (2000) and others argue that individual learning ought not to take place in isolation, and they exhort college professors to design coursework that puts students in close working relationships with both instructors and other students, where students can practice what they are learning.

At Lawrence University, the use of collaborative environments is key. Over the years, Lawrence has moved to a developmental model when thinking of our curricula, both at university and departmental levels. We have infused inquiry-based, active-learning techniques throughout the curriculum, in keeping with research in the fields of education and cognitive science that demonstrates the increased effectiveness of less-traditional pedagogy (e.g., National Research Council 2000). We further argue that our students are well served by the input of a diverse set of peers and mentors, to understand both the *breadth* of human knowledge and experience and the *various possible reactions to that experience*. The use of collaborative environments has the added benefit of being less costly than exclusive tutorial instruction, while helping students prepare to jump into more independent learning environments later in their college careers and beyond.

Building autonomy: The transition to critical thinking and analysis

At Lawrence University, students take their first steps toward intellectual autonomy in Freshman Studies, a two-term course that serves as an introduction to liberal learning. Created in 1945

by then President Nathan Pusey, Freshman Studies is a collaborative, multidisciplinary effort, with faculty members from every academic department each working with about fifteen students on texts from a common syllabus drawn from all areas of the liberal arts. Recent syllabi have included works by Stanley Milgram, Elizabeth Bishop, Plato, and John Coltrane.

How can such a course fit into a program of individualized learning? Don't all the students read the same works at the same time? The answer to those questions begins with the dedication of individual faculty members, who often spend hours working with small groups of students on papers and oral presentations. The point of those sessions is not simply to correct mistakes or clear up the argument; it is instead to help students understand what interests or grabs them about a text—and thus to suggest that, unlike the writing they did in high school, college-level papers and essays must be engaged with meaningful problems and questions. Further, by teaching freshman studies in a seminar setting, we strike a balance between intimidating first-year students with intense individual attention while providing individual challenges and supportive encouragement for students. Typically, a first-year student has begun to read more closely, write more carefully, and indeed to think independently after Freshman Studies. That is, he or she has cast off a familiar identity, that of a passive receiver of knowledge, and begun to take on another, that of an engaged thinker.

Research opportunities at the introductory level: The natural sciences.

Having discussed the multidisciplinary introduction to the liberal arts provided by Freshman Studies, we will now describe ways in which individualized learning is applied within disciplinary areas to help students learn to think and create knowledge.

We begin with the natural sciences, noting that the National Research Council and the National Science Foundation have both called for early exposure to research in science disciplines. Undergraduate research significantly increases students' understanding of science, their confidence, and their expectations of earning advanced degrees (Russell, Hancock, and McCullough 2007). Research experiences at the introductory level also enhance learning outcomes. Student researchers

The use of collaborative environments is key

not only become more knowledgeable about their research subjects, but they also learn how to ask questions, look for additional information, integrate new facts into an existing framework, and pose new problems productively. In short, they become independent learners (Merkel 2003).

While all the science departments at Lawrence are committed to inquiry-based methods, we focus here on the introductory biology course serving just over one hundred students in two course offerings per year. Each student, in a team with two or three others, works with a faculty mentor to design and implement a five-week research project. Faculty members designate broad topics as appropriate for short projects, such as “insect behavior” or “DNA fingerprinting,” and advertise their general areas of expertise so students who have project ideas of their own can find mentors.

In undertaking these projects, we have several goals for student learning. As part of taking on the role of active scientists, students must narrow a broad topic of interest to an answerable research question, design a well-controlled

experiment to address the question, and learn to implement their plans. Faculty mentors guide the scientific process and the preparation of final oral reports, but the projects belong to the students. For most students, this is their first college-level science course, but they are already getting the opportunity to flex their creative muscles and hone their organizational and collaborative skills in ways that parallel the methods of practicing scientists. They gain ownership of their projects, of the spaces in the building, and of their own learning; they are becoming “disciplined” in every sense of the word.

Among the respondents to a voluntary online survey, 80 percent of recent graduates and 87 percent of current students either agreed or strongly agreed that their introductory research project was an important part of their education. Interestingly, recent graduates valued these projects even more highly than did current students. Given the success of research projects at the introductory level, we have included student-directed research projects in intermediate and advanced laboratory



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courses in biology and in the multidisciplinary environmental studies program. The overarching goal in each case is to build students' capacity for independent learning and creative work.

Individualized instruction in a collaborative context: The social sciences

Hands-on learning through research is not limited to the natural sciences. The collaborative, mentoring approach taken by the Lawrence psychology department treats students as creative individuals and budding scholars. Instead of learning about psychology in a passive manner, students engage in collaborative scholarly pursuits, learning perhaps the most important aspects of psychological inquiry: the processes involved in creating new theories and novel research to test meaningful hypotheses about the human condition. Such varied opportunities ensure that each student gains critical-thinking skills, hones his or her creative talents, and gains an understanding of the interplay between theory and research.

Although the psychology major is the second largest in the college, the curriculum ensures that each major will have many opportunities to work closely with faculty mentors on research and theoretical projects. The sophomore research methods sequence is centered on small-group collaborative projects designed by teams of two to three students. Over the course of twenty weeks, students create a research question, do background research, design and execute their studies, analyze results using appropriate statistical tools, write a manuscript using American Psychological Association guidelines, and present their findings in a poster session. The research methods project provides students with a formative learning experience and often leads to independent studies and capstone projects in which they explore their interests in greater depth. These projects have led to twenty conference presentations and publications coauthored by students and faculty since 1990, suggesting that the course motivates students to continue their independent learning and to disseminate their findings.

To provide students with a culminating experience during their senior year, we developed a two-term senior capstone sequence in which small groups of students meet in independent course sections supervised by a faculty mentor. Groups of seven to ten students each form a

capstone class based on their interests so that a knowledgeable collaborative environment can be fostered. The sections discuss topical and project-related readings, offer constructive criticism of each other's work, and provide a sounding board for ideas and problems. Discussions, papers, and presentations are all designed to develop students' abilities to conceptualize important questions within the context of the discipline, formulate answers to those questions, and present ideas clearly and cogently in both written and oral form. This developmental sequence, anchored by research methods and the senior capstone, not only sharpens skills and builds confidence, but it also nurtures intellectual autonomy.

Intellectual community and individual growth: The humanities

Faculty members in the humanities, particularly in the foreign languages, have been using immersion weekends, technology-based learning tools, and off-campus travel to foster intellectual growth for many years. More recently, other humanities disciplines have incorporated methods courses and student-directed projects into their core curricula. One such example at Lawrence is found in the history department, where the senior capstone course, the Practice of History, entails more of a communal experience—or, if you prefer, a more social-democratic one, whose motto might well be “it takes a village.”

Students arrive at Practice, at least in theory, with a paper topic that has been worked out previously in a seminar, tutorial, or independent study. Each class section of no more than fifteen students is overseen by one professor, whose primary role is to help focus and shape the final product. The students thus become members of a collaborative scholarly community designed to guide each of them toward the composition of a substantial and original piece of historical writing based on primary sources.

The communal nature of this enterprise becomes apparent on the first day of class, a library workshop overseen by one of Lawrence's fine research librarians, who, as she hears the students describe their projects in class, begins to construct individualized, Web-based research maps for each, highlighting various paths toward relevant sources. For further scholarly support, students may call on a second faculty adviser—typically, the member of the history

department who is most expert on their topic. The same faculty member also serves as second reader of the final paper. The body of the course amounts to an extended group tutorial on historical research and writing. Students are guided through a series of written assignments, from a short primary source exercise through a full rough draft. Here again, the professor plays a shepherding role, pulling and prodding each student toward greater clarity, stronger focus, more effective organization, and better mechanics. But the students also pull and prod one another. Organized by topic into groups of three or four, they read and comment on each other's work, offering the crucial perspective of an intellectual peer who does not necessarily know, say, who Heraclitus was, or why the Watts riots took place. In sum, the Practice of History creates for each student an academic community to which each is responsible. Students must both give and receive criticism, thoughtful insights, and support as well as learn to argue their points and construct a historical story.

One of our favorite Practice of History success stories is that of a young man who in four years at Lawrence had almost never spoken in

The overarching goal is to build students' capacity for independent learning and creative work

class. The student in question, a record-setting wide receiver for Lawrence's football team, lived for nine weeks in quiet terror of the fifteen-minute presentation of his paper. But by week ten, he had become so immersed in Iowa's so-called "cow wars" of the 1930s, so conversant with the topic, that he delivered one of the most engaging talks heard since the inception of the course. He spoke with an unforced fluency for twenty minutes and fielded questions with aplomb for another ten. Today, he is a popular history teacher at a local high school.

The success of the Practice of History hinges less on the unique, one-on-one relationship between student and professor than on the student-centric nature of the enterprise. Each student in Practice becomes the focal point of an adjustable scholarly network custom designed to foster his or her intellectual growth and autonomy.

Conclusion

While none of us fully understands the ramifications of the increased electronic tethering of our current students to their families and friends, it is clear that many students are



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extending the time period of their emotional and academic dependence. It is our hope that by creating curricula that explicitly address issues of independence of thought and action we can maintain the positive effects of tethering and build upon the collaborative spirit of millennial students, while also fostering the intellectual autonomy that will allow students to reach their full potential.

We have evidence that our concerted curricular initiatives in the area of individualized learning are having a positive impact on student development. While we may not have grounded the “helicopter parents,” we seem to be rerouting the traffic: students beyond the freshman year use parents as editors much less frequently than first-year students; more importantly, they seek out student-driven learning opportunities in very high numbers. Our recent studies have found that enrollments in independent studies and tutorials (student-driven courses of study that go beyond the established curriculum) have been steadily rising. In 2005–6, with a total enrollment of 1,450 students, 477 credit-bearing tutorials and independent studies were offered; 85 percent of these had a one-to-one student-to-faculty ratio. In 2008–9, those number rose to 526 individualized learning courses (84 percent were one-to-one) with a total enrollment of 1,496 students. Since faculty members deem such courses as successful only when the students are the main driving force behind their own learning, and since a survey of faculty opinion revealed that faculty members rate 85 percent of all offerings as successful, we conclude that our students are becoming intellectually curious, autonomous, and willing to direct their own learning in a sustained and deep way.

To make even more explicit to students our goals for the development of student intellectual autonomy, the college will soon begin a program of senior experiences. Further, to reward faculty for their enthusiastic support of highly individualized curricula, we will begin a faculty incentive program linked to additional opportunities for professional development. If Peter Kugel (1993) is correct that a focus on students’ independence is the fifth and final stage in the development of highly proficient teachers, perhaps the faculty development piece is the most important.

In summary, it is our belief that the current professoriate needs to devise new ways to

advance the intellectual development of traditional college-age students who are ever more tethered to their parents and high school support networks. We have evidence that curricula rich in individualized learning opportunities succeeds in fostering a culture of intellectual autonomy on campus that nourishes the growth of each student. □

To respond to this article, e-mail liberaled@aacu.org, with the authors’ names on the subject line.

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