

Understanding the College Student Brain

By: Linda P. Rowe

A 19 year old sophomore, having been charged with a violation of his college's code, faces a hearing panel and pleads for mercy. "I don't know what happened. That just wasn't me. It must have been the beer. I would never do anything like that," he implores with apparent sincerity. The panel wavers between skepticism and compassion. "He's rationalizing," argues the conduct officer; "he's shifting blame and refusing to take responsibility for his actions."

The panel wrestles with how to respond to someone who so blatantly tries to separate himself from his acts. The student is placed on probation and required to write a paper about the consequences and effects of his transgressions. The panel hopes that this exercise will teach the student about the seriousness of his actions. The conduct officer remains concerned. She has witnessed this scenario over and over, heard the same excuses a thousand times. She wonders why so many young adults can't - or won't - behave like, well, adults.

Across the country, in spite of myriad educational efforts, years of developmentally oriented programming, prominently posted rules, tougher consequences, behavioral contracts, and creative sanctions, young people continue to make dumb choices. What's preventing them from growing up? Ground-breaking research conducted over the last half-decade suggests that the culprit is: their brains.

The brain, as we now know from imaging studies conducted under the auspices of the National Institute of Mental Health (NIMH), is not likely to reach full maturity until a person reaches his or her mid-twenties. Moreover, the late adolescent stages of brain development render young people particularly vulnerable to their impulses, emotions, and to the effects of alcohol and drugs. "Adolescence," explains Dr. Ronald Dahl of the University of Pittsburgh School of Medicine, "is a time when passions can hijack the brain's ability to make decisions and control behavior, with potentially deadly results" (Ronald Kotulak, "Teens driven to distraction," *The Chicago Tribune* (March 24, 2006), p.6).

Scientists have discovered a biological basis for the process of personal growth that college student development pioneer Arthur Chickering observed and described among students two generations ago (see Arthur W. Chickering, "Education and Identity," San Francisco: Jossey Bass (1969)). Understanding this basis can help us better understand traditional age college students and why they do the things they do. It can help us understand that the 19 year old in the example above might be just as perplexed as we are about the reasons for his misbehavior. It might help us understand that he is not simply making excuses.

Arthur Chickering explained that in order to become mature, fully functioning adults college students work, or need to work, through seven "vectors" of development: competence, management of emotions, autonomy, establishment of identity, interpersonal feelings, sense of purpose, and integrity. Chickering and the developmental psychologists who inspired his work believed that psychological and social crises, often instigated by changes in the student's environment, impelled development.

To this day, student affairs professionals rely heavily on Chickering's model and similar models, to support their mission of facilitating college student development through programming and advising. What student affairs professionals have not known until recently (but have perhaps suspected) is that the brain's physical maturation processes make it extremely difficult, if not impossible, for traditional-age college students to fully achieve these developmental goals before they graduate.

This article summarizes recent research that will help us better understand the behavior of students aged 18 through 25. Such research deserves careful attention when we set out to develop policies and practices to promote all students' safety and well-being. To produce the summary I relied on three main sources: The Chicago Tribune feature referenced above; the PBS Frontline program, "Inside the Teenage Brain," that aired in January 2002 and can be accessed at <http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain> ; and proceedings from the New York Academy of Sciences symposium, "Adolescent Brain Development: Vulnerabilities and Opportunities." The proceedings of the symposium, which was held in New York City September 18-20, 2003, are available at <http://www.nyas.org/ABD> .

According to Dr. Jay Giedd, the NIMH neuroscientist whose MRI brain-scan research was the centerpiece of "Inside the Teenage Brain," puberty and the young adult years comprise a critical time for "brain sculpting." During this period, the frontal lobe or cortex is still changing and developing. This area - often called the "chief executive officer" of the brain - contains the synaptic structure that controls decision-making, judgment and impulse control. As it develops it begins over-producing cells and connections, contributing to the chaotic thoughts and emotions that characterize the early and mid-to-late-teen years. This spurt of cell growth seems to explain why most teens, especially males, have difficulty multitasking.

After cell growth peaks, the brain actually begins whittling away at "excess" cells and synapses as it acquires the focus, the organizational skills, and the decision-making capabilities of adulthood. Until the maturation process is completed, the frontal cortex lacks the ability to adequately oversee and regulate the very labile center of the brain, the part where emotions originate.

The neural networks required to regulate behavior do not reach full maturity until late in adolescence, which we now know may extend until a person reaches age 25. Teens and early twenty-somethings may be as knowledgeable, as intelligent, and as capable of logical reasoning as people twice their age, but simultaneously incapable of recognizing when they are acting on impulse -- until it's too late. Dr. Laurence Steinberg of Temple University, one of the speakers at the NYAS conference, explained that because of what is happening in the brain, adolescence is almost inevitably characterized by increased risk-taking and sensation-seeking. Dr. Ann Masten of the University of Minnesota, another of the NYAS speakers, concludes that "there are good brains out there doing bad things."

The brain remains more plastic through young adulthood than brain experts had previously thought. Scientists speculate that extended plasticity serves an evolutionary or adaptive function. It enables human beings to develop in accordance with the environments in which they find

themselves. Complex, modern societies, they suggest, require a longer period of maturation than traditional societies in which the ability to bear children and catch your own food was synonymous with adulthood.

Frontal lobe maturation is shaped to some extent by a person's genetic makeup, but environmental influences, including social context, nutrition, sleep schedules, peer influences, and the ingestion of substances, can have profound influences at the cellular level on the way the brain's executive functions develop - or don't develop. This means that we must not abandon the student development philosophy that colleges should play an intentional role in students' psychosocial growth. However, we must be prepared to concede that nature, not nurture, instigates the brain's readiness for change, and that biology (nature) will probably have the last word on how quickly or thoroughly change occurs.

Dr. Ronald Dahl, referring to high school students, says "There's an important role for parents, coaches, teachers, other responsible adults and social systems to help support kids so that they can take some risks, do some experimenting, develop some ability for self-control, but not spiral into those terrible outcomes - death, disability, addictions, reckless sex, HIV and all the other problems that are so rampant in adolescence" (Kotulak, supra, p. 6). Because students remain at the mercy of their developing brains after they start college, I propose that Dahl's admonition imposes upon college leaders a duty to be as caring and as intentional as possible in designing campus programs and policies that foster healthy brain development.

What will a brain-healthy campus look like? Dr. Jay Geidd, who is quoted in both the Chicago Tribune article and the PBS program, warns that brain researchers are not quite ready to bridge the gap between neuroscience and practical advice for parents, teachers and society. Nevertheless, to protect adolescents from their brains' vulnerabilities, many adolescent health experts advocate stricter and more conservative regulations over such areas as driver licensing, alcohol and drugs, and exposure to violence and violent images.

Their recommendations seem to reinforce the appropriateness of the trend toward tougher campus policies and closer supervision of student behavior. Arguably, the trend has resulted from legal decisions, but student affairs professionals should be encouraged to keep doing what we're doing -- and to do it more effectively by incorporating brain development knowledge into our skill sets.

Our new knowledge about the brain supports the philosophy that campus discipline must focus on education and development. I am not suggesting that we "excuse" poor behavior or that we eliminate consequences. Rather, campuses should take a hard look at whether the behavioral demands placed on college students are realistic. Throwing young people into situations that their brains can't manage, with no support systems other than the threat of punishment, is a recipe for trouble.

Gradual introduction or exposure to privileges and activities that demand self-regulated behavior, such as off-campus living, attendance at events where alcohol is present, or membership in social organizations, might be preferable to allowing freshmen to leap into everything that college offers during their first term. When students do make poor choices, educational sanctions should

focus on strategies for managing emotions, not simply on learning laws and facts about alcohol, or drugs, or fire alarms. On-campus restrictions or a period of separation from the institution for disciplinary reasons may, in addition to serving as a “consequence,” allow the student’s brain to catch up with the demands of college.

One of the most brain-healthy steps colleges can take is to ensure that responsible, caring adults are on hand to provide the mentoring and coaching and counseling young adults need to navigate the challenges they face. Unfortunately, on many contemporary campuses students rarely if ever have personal conversations with anyone over 25. The group discussions and topical presentations featured in new student orientation classes provide a modicum of guidance for developing brains, but rarely substitute for individual attention. Quite a few conduct officers of my acquaintance report being the first “grown up” official with whom students have meaningful one-to-one encounters. Something is seriously wrong with a system in which a student must misbehave in order to receive an individual summons to interact with an adult advisor.

American higher education relies informally on upperclass peers and formally on peer counselors or mentors to help new students adjust to college. The most widespread type of college-supervised peer mentoring programs is found in residence halls, where Resident Advisors (RAs) interact daily with young students. Given that most RAs are in their early to mid twenties, they are engaged in the process of using developing brains to mentor other developing brains. Careful selection and close supervision of RAs is needed to prepare them for the inevitable challenges to their minds’ abilities to function under conditions of stress, peer pressure, or emergency.

In a study recently published in the NASPA Journal, Audrey Jaeger and Amy Caison argue that the theoretical construct of emotional intelligence may be helpful in the selection and training of RAs. (“Rethinking Criteria for Training and Selection: An Inquiry Into the Emotional Intelligence of Resident Assistants”, Vol. 43: No. 1, Article 8. (2006) at <http://publications.naspa.org/naspajournal/vol43/iss1/art8>). Emotional intelligence is, in essence, the manifestation of an effectively functioning, mature frontal lobe. Jaeger and Caison found that no other factors, including class standing, grades, or gender, were “significant in determining who would be a high-performing RA (as chosen by their peers and supervisors based on a given set of criteria). . . . In fact, RAs with high emotional intelligence scores were 11 times more likely to be identified as outstanding RAs” (p. 161).

Health and wellness programmers should continue to promote students’ understanding of the behavioral and physiological implications of drug and alcohol use, sleep deprivation, emotional challenges, and hormone upheaval for maturing brains. Students need to know about the long-term effects of substance use during the critical post-puberty phase of brain growth, one of which is an increased propensity for mental illness in later life.

However, as most physicians will tell us, information alone is of limited efficacy in encouraging human beings to make healthy choices, especially when the patient is not experiencing acute symptoms or when cultural, social and psychological forces oppose changes of behavior. Anyone who has struggled to manage weight, lower cholesterol, recover from a substance addiction, or deviate from the lifestyle defined by peers, family or heritage can empathize with the challenge.

Therefore, campus policies and programs must be continually reviewed to ensure that the college practices what it preaches in terms of mental and physical wellness. Schedules, services, and policies should make it easier for students to get enough sleep, eat healthily, access good advice, eschew drugs and alcohol, exercise, avoid violence, and study, than to engage in potentially destructive behaviors.

Adolescent brain studies reveal valuable insights into our students' behavioral patterns, and provide scientific evidence to underpin policy-making. Student affairs professionals and scholars should keep abreast of the research and incorporate it into program planning and in the training of new professionals.

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