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Twilight illumination of the ash stratum from Tucson, Arizona, 22 November 1974, showing the heavily striated structure of the layer. Saguaro cactus is in foreground. See page 477. [Aden B. Meinel and Marjorie P. Meinel, University of Arizona, Tucson]
Career Education and Liberal Arts

Recently there has been considerable debate on the issue of career training versus liberal arts education. In this debate, we would all benefit from an effort to understand the major issues of personal growth with which students are grappling when they enter the college years.

Although we are able to recognize that a 7-year-old is qualitatively different from us, not just smaller and dumber, very few educators seem to realize that a 17-year-old is also qualitatively different from his adult teachers and even from more senior peers. When they enter higher education our students are adolescents, and during much of the time they spend in college the problems of their lives revolve around the transition from childhood to adulthood.

In three major domains of the developmental process—the intellectual, the moral, and the social-emotional—there is a major transition during the late teens and early twenties. The decisive nature of the late adolescent years in these three areas may be illustrated by the work of three major developmental theorists—Jean Piaget, Erik Erikson, and Lawrence Kohlberg. Piaget proposes that the development of formal, logical thought occurs after the twelfth year. Kohlberg suggests that the constancy and universality of ethical principles do not become apparent prior to this time, and it is, of course, during adolescence that Erikson posits the formulation and formation of individual identity.

In the intellectual domain, our students are usually just beginning to develop the abilities to organize knowledge comprehensively and to manipulate abstract concepts without the necessity to refer to particular content. Yet how often do we take one of two easy roads with our freshman students? We either present predigested knowledge as though the students cannot think at all, or we present so abstrusely that they are unable to use their just developing abilities to think formally and logically. When we teach in a fashion that is mindless about our students' level of intellectual development we are not teaching, we are in combat, and many students will lose the battle.

Kohlberg's theory of moral development has, as its culminating stage, a transition to principled thought. The young person begins to comprehend a morality that transcends any individual authorities. This level of universal, relativistic principle can only be reached when a person can think abstractly and have some real understanding of alternative points of view. As one sophomore recently said, "It was only in college that I really began to understand that everyone did not see everything the same way!"

In Erikson's theory of social-emotional development, adolescence is the period for the resolution of identity issues. The idea that one is an individual in a world of others, with mutual and independent responsibilities, appears to become a salient feature of life only in late adolescence.

We propose that abstract reasoning, a universal (or, at least, a coherent) moral stance, and a concept of the future that is linked to a particular and personal past are three important attributes of adult behavior and thought that are incomplete in the college age student.

Recognition of these qualities in our students should serve to inform the debate on careerism and liberal arts education. Our students are "in process." Although, as seems obvious to us, a too early introduction of career choice may serve only to foreclose on optimum adult development, that is unalloyed by pragmatic experience. In any event, if we do not try to understand who our students are and with what major issues they are struggling, we will remain merely curriculum manipulators and not educators—F. Rebelisky and J. C. Speisman, Department of Psychology, Boston University, Boston, Massachusetts 02215