College IV: Elegant and Lonely

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In May, 1973, seven faculty members, one Dean and one executive assistant to the Dean gathered to begin the task of building a new college. Since it was to be the fourth college of the Grand Valley cluster and since it had no other name, it was called College IV. During the preceding year the Dean, Bob Toft, had secured large federal grants, drafted the College's curriculum plan, and hired the faculty. Some readers will know that the College IV experiment ended with the departure of Bob Toft, who subsequently became Grand Valley's federal contact person in Washington. Doug Kindschi was hired as the new dean. His task was to fashion a new and viable identity for the College within the cluster. Along the way the College acquired a benefactor and a name, Kirkhof.

This is not an historical essay or nostalgic revisiting of College IV/Kirkhof College. Rather, I will focus on the innovative ideas that distinguished College IV, both within the Grand Valley cluster and nationally. I will describe the major innovations, comment on their allure, and say why I think that they were mistaken.

It was the dream of College IV to remove many of the barriers which kept people away from higher education. Some of these barriers were in the physical and social environments. Classes that all students had to attend in "lock-step" fashion prevented those with certain kinds of jobs and/or family responsibilities from enrolling in college. The typical course also assumed that most students were roughly equal in preparedness for the course and that, once in the course, most students would march along productively at the pace set by the instructor. College IV's (especially Bob Toft's) dream for higher education was that the barriers could be dissolved largely by redesigning the curriculum. The heart of the new curriculum was the "module." A module could be any piece of curriculum which made sense as a unit of study. In the simplest case, modules were counterparts to chapters from a conventional textbook, say, an introductory textbook in a discipline. But unlike most textbook chapters being written in the early 1970's, modules were self-contained learning packages. Being self-contained meant that a module opened with a clear set of behavioral learning objectives which told students what to expect on the assessment test. It contained a practice assessment equivalent to the mastery test students would take for credit. Module designers were encouraged to enrich modules with experiential and media components, using the latest instructional technology.

What was the process of study and learning in College IV? What replaced the classes, laboratories, regularly scheduled quizzes and research papers that are conventional college requirements? College IV retained some of these requirements. Modules in biology and chemistry required that students complete laboratory exercises or experiments. There were modules devoted to the process of writing papers. However, instruction was to be largely self-directed and self-paced. A well-
designed module was one which enabled students to prepare for a mastery exam without additional instruction. Tutorials were available with either a faculty member or a student tutor, since it was acknowledged that some students would need tutoring in order to understand the material and to pass the mastery test. But, in theory, a student could move through large chunks of curriculum without a single tutorial; contact with other students could be minimal, almost nonexistent. Furthermore, students could move through the curriculum at their own pace. They took mastery exams when they felt ready; there were no deadlines or quotas for the number of modules mastered in some given unit of time. Passing a module meant correctly answering 90% of the items. Students were not penalized for achieving less than 90% correct; they simply took another form of the assessment test at a later time.

College IV's instructional model rested on two linked assumptions. The first assumption was that any domain of knowledge, including an academic discipline, is composed of an identifiable structure of conceptual knowledge and procedural skills. The second assumption was that these concepts and skills can be decomposed into their atomic components and the logical dependencies between them. That is, one can say how being able to understand or do one thing depends upon being able to understand or do another set of things. For example, being able to write a complete sentence depends upon knowing when sentences lack either a subject or predicate. The elements of knowledge at any level can be decomposed into elements at the next lower level, and so on. These knowledge atoms and their logical dependencies become a map for instruction in the discipline. In principle, one can find a sequence of instruction by which a field of knowledge can be most efficiently learned or mastered.

The notion that knowledge can be abstracted and decomposed into its elemental particles and rules of combination has a long intellectual history. It is the basis for all empiricist philosophies. It appears in the early 20th century as positivist philosophy and in its psychological cousin, Behaviorism. In this time of high technological fashion, it comes clothed seductively as "expert systems," a subfield within artificial intelligence. In building an expert system, "knowledge engineers" interview and observe experts within some domain, say medical diagnosis or oil prospecting, in order to extract the knowledge these experts call upon and the rules of inference they follow. Then computer programmers build a model which emulates the experts.

In College IV, faculty were both discipline experts and knowledge engineers. To press the analogy into stark form, it was the students who were to be programmed.

I believe that the assumptions upon which College IV was founded are strategically useful, but insufficient as a theory of knowledge. The strategy of abstracting the rules of an educational system is what Seymour Papert, a guru of artificial intelligence at MIT, calls a "powerful idea." The very act of trying to say what it is you are doing draws your attention to the central and substantive. You must continually sort out the essential from the nonessential and the consistent from the inconsistent. It is a relentless game of logic. As an enterprise it promises an elegant and economical curricular structure, free of unintended redundancies and waste. If, for example, students have mastered the skills of proposing testable hypotheses in

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psychology modules, they don't need to repeat that training in sociology or biology.

However, this objectivist theory of knowledge is based on assumptions which have been broadly criticized. It assumes that knowledge is objectively specifiable and that it is meaningful, free of the medium in which it is embedded and the context in which it is used. Moreover, the theory of instruction which comes out of this epistemology assumes that this static body of knowledge can be mastered by an individual mind through its own rational and observational powers. The knower's task is to build the best mental representation of a given knowledge domain. Thinking about a problem or situation within that domain means reaching the optimal solution or understanding, usually judged against some specifiable criteria, which can be abstracted from the context.

This model of the individual knowing mind moving about in ethereal knowledge ignores a pervasive aspect of human knowing. Knowledge is a social enterprise; its very fabric is woven from strands of discourse. There is disagreement about how best to represent any given issue or problem; the process of defining a problem is dialectical, with constant reinterpretation. What is the best solution and how best to move towards it are matters for discussion with others. I have become increasingly convinced that any theory of human intelligence and its instruction must be grounded in a social view of knowledge and cognition. The work of L. S. Vygotsky, the Russian psychologist is particularly helpful here. According to Vygotsky, minds are formed by internalizing social processes, especially language. The making of individual minds and of knowledge within society are part of the same social processes. If knowing is, at its heart, such a social process, surely there are implications for teaching and learning. Kenneth Bruffee has been explicit about some of these implications for the teaching of English composition. Bruffee argues that if the origins of thought are in external conversation, then we need to consider the kinds of conversations we set for students. We need to create collaborative work communities which foster desirable conversations among peers.

College IV removed a barrier to higher education by plucking the curriculum out of its socially constrained form. It matched its educational "delivery system" to the socially fragmenting culture many of us live in. However, by freeing students, we also isolated them further. The evaluation team for one of our federal grants coined the phrase "lonely learners" to characterize the many College IV students who were registered but inactive. In order to solve the problem of limited access to education, I think that we created an impoverished and alienating form of education.