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There *Is* an Alternative to Remedial Education

Assessment of retention and academic performance of first-year students led Johnson C. Smith University, a small, historically black college, to eliminate all remedial courses and to develop an innovative Freshman Studies curriculum. It is standard for all freshmen and features inquiry-based instruction, long-term mentoring, and readily available personal and academic support. Ongoing assessment of the new curriculum indicated dramatic increases in retention, academic performance, and cognitive-affective growth. The article reviews events leading to the Freshman Studies curriculum, describes curriculum and assessment strategies, and discusses the reasons for the success of the program.

As startling as it may sound, remedial courses—that is, noncredit courses that claim to remedy basic skill deficits in underprepared students—are not the only way to deal with students who arrive at college underprepared. What's more, despite their popularity, such courses may not be the best choice for either students or the institutions they attend.

Although we do not possess the data necessary to generalize beyond Johnson C. Smith University (JCSU), we think our own experiences with remedial education, and more recently with a far more effective alternative, may be of interest to other educators. In this brief essay, we would like to recount briefly the history of remedial education at JCSU; explain how we managed to move beyond it; describe the formal assessments we have used to indicate how well our alternative is working; and finally speculate about some of the reasons for our success. Assessment has supported our efforts, in different ways, at each step of the process.

The Attraction of Remedial Education

JCSU is a small, historically black, liberal arts college located in Charlotte, North Carolina. The institution was founded in 1868 to provide an education to freedmen. For a century, it attracted students who were among the best and the brightest in the nation. In the late 1960s, however, when the Civil Rights Law became truly operative, we began losing large numbers of students to majority

institutions. Whether accurately or not, faculty members perceived the students we attracted as intellectually inferior or underprepared compared to our former students. At a minimum, we feared the loss of our prestigious academic reputation; at the most, we might be unable to attract enough students with college-level abilities to survive at all.

Under the circumstances, remedial education seemed an attractive alternative. We could recruit bright high school graduates who had not completed a college preparatory curriculum and enroll them in a noncredit remedial curriculum called "Foundations of Education." Our enrollment could be maintained because we could now accept students we had previously rejected. However, there were less positive implications to this strategy as well.

By categorizing students as underprepared and placing them in a remedial program, we could conditionally accept them while avoiding responsibility for their success or failure. Those who were retained and successfully completed the college curriculum were success stories, while those who dropped out or failed to meet academic standards could be dismissed as simply not "college material" in the first place. In addition, faculty not teaching in the remedial program could deny responsibility for the failure of students who completed the Foundations of Education Curriculum by blaming the remedial faculty for poor preparation or the students for lack of ability or motivation.

Only gradually did we come to realize that remedial education has the potential to be a self-handicapping strategy for educators: if we categorized students as academically substandard, we had an excuse for our own failures ("If I had better students, I could produce better results"); and we were tempted to exaggerate our successes ("Just think what I could do with better students").

Assessment as Motivation for Alternatives

Remedial education *can* result in positive outcomes. We assume that it would not have been employed for so many years in so many settings without some evidence of success. Nevertheless, after approximately twenty years of Foundations of Education at JCSU, we were not happy with the evidence we were getting. Close scrutiny of college records revealed that, over the previous five years, approximately 70 percent of each freshman class had been placed in three to fifteen hours of noncredit remedial courses. Freshman attrition ranged from 40 to 50 percent, with a disproportionately large percentage of noncontinuing students coming from remedial classes. Academic performance was poor for those who returned as sophomores, with former remedial students showing lower achievement (as indicated by GPA) than other students.

Our study indicated that attrition *was* correlated with academic progress as defined by cumulative GPA and earned credit hours. A separate study of predictors of academic success at JCSU showed *little* correlation with Scholastic Aptitude Test (SAT) scores. In spite of this evidence, students were placed in remedial classes based on SAT scores. The combined results of these two studies led us to suspect that categorizing

students as underprepared was actually working against their future achievement. Did placement of a student in remedial classes in fact act as a self-fulfilling prophecy, as R. A. Jones has argued?

In any case, the evidence clearly suggested that we were not serving a large proportion of the students we recruited and admitted as well as we wished. We knew that retention is superior to recruitment as an indicator of institutional effectiveness—and our attrition rates were unacceptably high. Beyond that, we realized that with competition becoming keener for a shrinking number of college-bound students, and with external funding becoming scarcer in a declining economy, our very existence depended on student retention. We, therefore, decided to concentrate on the freshman year, where attrition was highest, and develop a completely new Freshman Studies Curriculum, to be required of *all* incoming students.

An Inquiry-Based Freshman Studies Curriculum

We began by eliminating remedial courses. Though we might recruit underprepared students, we knew that placing them in remedial classes was not helping them. Instead, we had to create new courses that would integrate skill development with college-level content for underprepared students. At the same time these courses must offer content that was challenging enough for students who were academically well-prepared. All courses had to earn credit toward graduation and be recognized as transferable by other colleges.

The resulting Freshman Studies Curriculum is now standard for all freshmen. Four three-hour academic courses are required each semester: Rhetoric, Humanities, Social Science, and Natural Science. In addition, students may elect a course in mathematics or a foreign language. All courses are writing and speaking intensive, and the social and natural science courses incorporate quantitative reasoning skills. The method of instruction is not by lecture but uses what we call directed inquiry. This has led to a question-driven curriculum that allows, indeed forces, instructors to serve as model learners and to focus on the methods and distinctions employed in each broad disciplinary area in order to define and resolve issues. There are no rules that define our instructional approach. Some examples of directed inquiry as practiced in this new curriculum will serve better than an attempt to describe the methodology.

The first example is from natural science. Faculty in that area worked together to establish common laboratory experiences for all students that emphasized basic laboratory techniques and illustrated concepts. One laboratory session involved using a water displacement technique to determine the volume of an irregularly shaped solid, weighing the object using a balance, and then computing the specific gravity of the object, which is the ratio of its density to that of water. One student angrily reported to us that after he had performed these standard laboratory procedures and reported his results to the instructor, the latter asked what the specific gravity of water was. The student correctly replied, "It's one." "How do you know?" responded the instructor. "I looked it up in a table in back of the chemistry book," replied the student. "Very good," said the

instructor, "your assignment is to explain how to find out if the value given by the book is correct."

In contrast, as part of the social science course, the class once each week for six weeks watched videotapes that presented the development and main concepts of economic theory. As a study guide for each tape, the faculty member had carefully prepared twenty-five key statements with blanks at key points to be completed by the students. In the following class period, students wrote short essays synthesizing concepts from the study guide in the context of the videotape. These quizzes were followed by a class discussion of how the theory would apply to the present economic situation. The culmination of this unit of the social science course was small group projects presenting original remedies for current economic issues such as repaying third world debt or identifying factors that might account for the economic disparity between the Hispanic and black communities of Dade County, Florida.

Students are encouraged to form collaborative study groups. Personal and academic support is available to any student on request through an intensive two-year mentoring program, with thirteen students per faculty mentor; a professionally staffed Counseling and Testing Center; and the Learning Resource Center, which provides computerized drill and programmed instruction as well as professionally supervised student tutors.

Assessing Outcomes

Implementation of the Freshman Studies Curriculum was painful! Complaints from faculty and students were numerous. Typical faculty complaints included the following: "I'm a (specialty area), let the English department teach reading and writing"; "I had all my old courses prepared"; "We need more time to prepare new courses"; "Inquiry won't work in (subject area)"; "We need to be trained before we can do this"; "It may be a good idea for (other discipline area) but it'll never work for (speaker's discipline)"; and the classic, "We've never done it that way before." Typical student complaints included "Nobody else does this," "These courses will never transfer," "Why don't they just tell us what we're supposed to know so we can learn it for the test," and "My professors aren't teaching anything—all they do is ask questions and when I give the right answer, they ask me how I know." If student and faculty contentment were the criterion for success, the Freshman Studies Curriculum would have to be ranked as a failure.

Still, we persisted. Although we did not anticipate great academic success from students in Freshman Studies, we did expect improved performance as reflected in GPA and retention. In addition, we expected the inquiry-based curriculum to produce related cognitive-affective gains over the course of the freshman year. We began by identifying the traits and abilities we are trying to enhance in our freshmen through directed inquiries, and then chose those that are measurable, given existing time and budget restraints. The resulting list of traits and abilities and the pertinent measurement instruments are listed in Table 1.

Table 1: Cognitive-Affective Measures

Trait or Ability	Measurement Instrument
Abstract thinking, recognizing patterns and drawing logical conclusions based on available data.	Shipley-Hartford Short Form Intelligence Test, Part 2
Expression of meaningful ideas	Ideational Fluency Test
Spontaneous production of ideas related to other ideas	Alternate Uses Test
Efficient production of ideas bearing prescribed relations to other ideas	Associational Fluency Test
Seeing meaningful implications, anticipating consequences, and making predictions	Seeing Problems Test
Capacity to redefine and look at common objects in innovative ways	New Uses Test
Perceived self-efficacy, behavior-outcome contingency, belief in one's ability to control or influence outcomes in one's personal, social, or political environment	Spheres of Control Scale Personal Efficacy Subscale Social Efficacy Subscale Political Efficacy Subscale

In order to infer a causal relationship between Freshman Studies and cognitive-affective gains in the absence of a control group, we decided to employ a quasi-experimental repeated-treatment design. Enrollment and participation in Freshman Studies constituted the treatment, and the four-week semester break constituted the treatment withdrawal period. The entire battery of cognitive-affective measures was administered to all freshmen at the beginning and the end of both fall and spring semesters. Only the scores of students who completed all four administrations of a measure were included in the analysis for that measure.

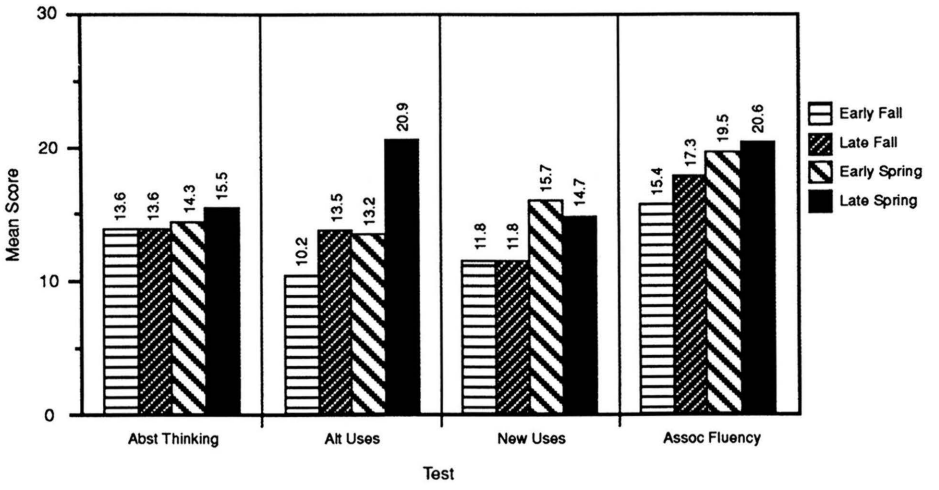
With this design, causal inference requires a significant gain over the fall semester, a significant loss during the treatment withdrawal period (represented by the difference in scores between the end of the fall semester and the beginning of the spring semester), and then significant gains with the resumption of treatment over the spring semester. Obviously,

this design represents a compromise and is not ideally suited to our purposes. The problem is that if the requisite pattern for causal inference is actually achieved, this suggests that the benefits of our curriculum are short-lived because they decline when treatment is withdrawn—hardly the effect we seek in a college education! Perhaps an exploration of alternative assessment strategies will help us to find more satisfactory approaches to project design and method in the future.

Setting our reservations about method aside, we went ahead. Analyses of variance for repeated measures performed on the cognitive-affective measures indicated significant positive gains on four measures out of seven: Abstract Thinking ($\underline{F}(3,285) = 14.19$, $\underline{p} < .001$), Alternate Uses ($\underline{F}(3,51) = 13.27$, $\underline{p} < .001$), New Uses ($\underline{F}(3,39) = 8.51$, $\underline{p} < .001$), and Associational Fluency ($\underline{F}(3,72) = 3.87$, $\underline{p} < .015$).

The patterns of means for each measure over repeated administrations in Figure 1 indicates that none of these four measures allows the pattern of means to infer causality. The pattern for Alternate Uses most nearly approaches what we would need to infer causality, but the difference between fall 2 and spring 1 is not significant ($\underline{F}(1,17) = 2.22$, $\underline{p} > .15$).

Figure 1: Cognitive-Affective Measures Across Time



If the Freshman Studies Curriculum was not the cause of these gains, then to what could we attribute these positive changes? There is good reason to suspect that student maturation is a major cause of these gains. But can maturation alone explain such dramatic differences? In our opinion, the most plausible explanation of these gains is an *interaction* between the unique Freshman Studies Curriculum and the maturation process of cognitive development.

According to researchers in cognitive development, persons should be well into the stage of formal operations by the time they reach late

adolescence. An inquiry-based curriculum like ours encourages precisely the behavior associated with this highest level of cognitive development (e.g., systematic, deductive reasoning that permits consideration of multiple solutions to a problem). Piaget's theory also asserts that each cognitive stage is intrinsically reinforcing, that is, participation in each cognitive stage is so gratifying that individuals are naturally motivated to seek the upper limits of each stage. Yet, our own observations of public education lead us to believe that student engagement in formal operations is more often discouraged than encouraged in the classroom—and particularly in remedial education.

In our inquiry-based Freshman Studies Curriculum, higher-order thinking skills, which have traditionally been discouraged in classroom settings, are encouraged, even demanded. We have found that students are initially suspicious and distrustful of this method of instruction, based perhaps on their past educational experiences. But then we find dramatic gains as indicated by the patterns of means in Figure 1, particularly over the spring semester. These gains occur perhaps as students become more comfortable with this new approach to learning, enjoy the feelings of personal and intellectual efficacy that it generates, and are reinforced, perhaps by unexpectedly good grades that are a result of exercising their growing skills in formal operations. In other words, we speculate that intrinsic and extrinsic reinforcement may interact to cause these dramatic gains, particularly toward the end of the first year.

In terms of its cognitive-affective impact, our Freshman Studies Curriculum was not an unqualified success, but it is hard to imagine that a remedial program would have served our students better, even on the one variable for which results indicate negative outcomes. The analysis of Ideational Fluency was limited to the first and last test administrations because no students participated in both the late fall and early spring administrations. A t-test for related groups indicated a significant decline in mean scores between fall (Mean = 49.62) and spring (Mean = 40.06, $t(81) = 4.44$, $p < .001$). There were no significant differences on any subscale of the Spheres of Control nor the Seeing Problems test.

One of our primary motives for implementing Freshman Studies was, of course, improved retention. Figure 2 illustrates the dramatic increase in the proportion of students returning as sophomores that began with freshmen entering in 1988, the first year of Freshman Studies—a return rate that has continued at near 70% for four years. The slight drop for 1991 does concern us; it may be accounted for by higher tuition, more stringent financial policy regarding student debt, effects of the recession, or our failure to provide adequate sections of required sophomore-level general education courses.

In addition to retaining more students, we are increasing student achievement as indicated by both internal and external measures. Freshman GPAs are higher, with fewer students on academic probation; and, as Figure 3 clearly shows, the percentage of sophomores achieving Level 1 or higher on all categories of the Academic Profile (ETS) has risen steadily. The results are amazing when retention and achievement are considered together. Not only are we increasing achievement (which could be accomplished by eliminating weaker students), but we are also increasing

achievement for a larger percentage of students. In other words, Freshman Studies is not a more efficient weeding out process. It seems to support academic growth in all students.

Figure 2: Freshmen Retention

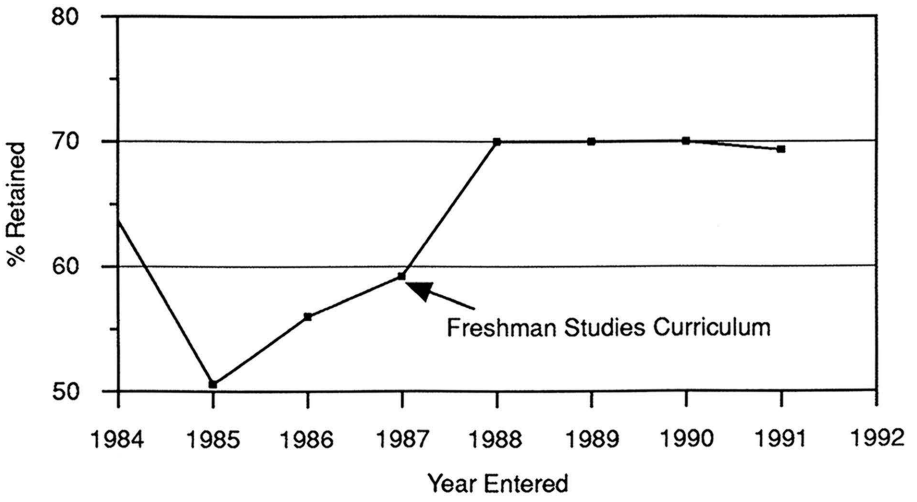
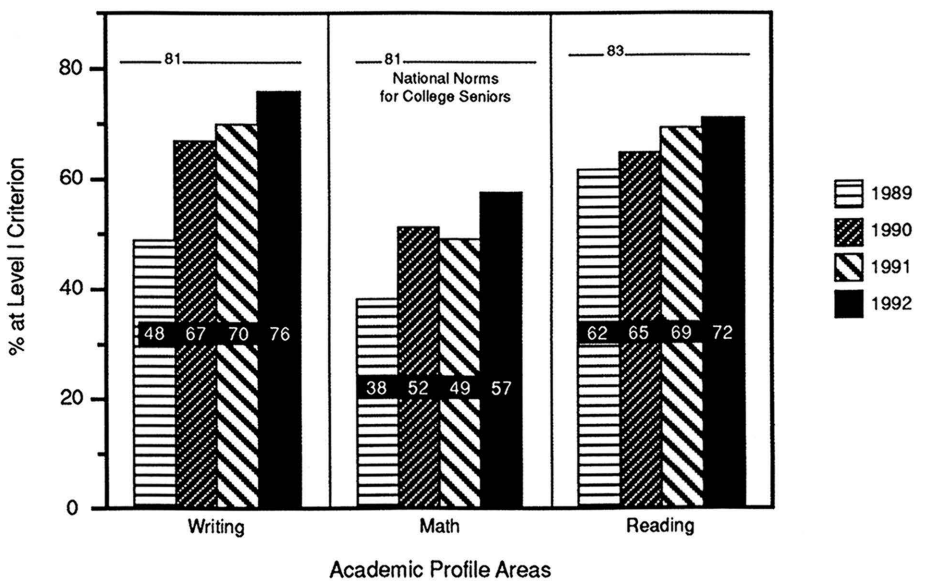


Figure 3: Sophomore Competency Development



Explanation and Discussion

Frankly, we were startled by the dramatic success of the Freshman Studies Curriculum in terms of cognitive-affective growth, academic achievement, and retention. Explaining this success in a way that allows generalization to other campuses or even from year to year on this campus is problematic at best. After the first year of implementation, we suspected that we had a Hawthorne Effect, that is, that all the attention students were getting in the assessment process, rather than participation in the Freshman Studies Curriculum, was responsible for the positive effects. After the second and third years, we eliminated that explanation and surmised that the outcomes were caused by faculty discomfort with a new curriculum, similar to the "honeymoon" effect often associated with a new faculty member. That is, we suspected that by changing the curriculum we had, in a sense, created new faculty by making them teach relatively unfamiliar material in an unfamiliar way. Now, after a fourth year, faculty are more comfortable with the curriculum, yet the positive results continue. All of this leads us to believe that there are two key affective variables capable of making any curriculum exciting and successful: (1) establishing and maintaining a spirit of inquiry and (2) creating a context for assessment that is positive, indeed, self-fulfilling.

What is a "self-fulfilling context"? Part of assessment is the strategy we choose, the instruments we employ, the data or evidence of student learning and development that we may gather. But those activities take place within a larger context, one characterized by our values, assumptions, and commitments, as well as our expectations for ourselves and our hopes for students. It is a context embodied in the vocabulary we choose and the narratives we weave to make sense of our work. It is within that context that we *interpret* our assessment data and decide what, if anything, we will do about them.

Ultimately it is not assessment *per se* that matters, but rather the context of educational values that frames assessment and acts on its results. "Remedial," as a part of the educational narrative of teachers and students, can describe a pedagogy and a curriculum as well as an assessment. It can function not only as an unacknowledged predictor of the kind of instruction and assessments that the student is likely to encounter in a university classroom, but also of the kind of expectations that the student will encounter as well.

What happens if we ask ourselves, "What is my intervening narrative of curriculum and instruction for a remedial student"? There is a strong (and certainly understandable) strain of thought in postsecondary education represented by a classic piece from the *Chronicle of Higher Education* called "The Long Walk to Room 114: The Realities of Teaching Remedial English in College." The piece insists on stripping "basic" or "developmental" education of its euphemisms—along with its supposedly misguided, misplaced hopes. That essay happened to come out, ironically, just at the time we were trying to convince the JCSU faculty of almost the very opposite: namely, that there *was* hope for our so-called (no doubt euphemistically) "underprepared" students, but not within the old conceptual framework of remediation. When we talk of hope nowadays,

it is not so much in reference to the results of specific assessments, but to the narratives inside which those assessments are carried out.

Ours is a hope that produces a narrative of encouragement; it is a hope that is enacted in the archetypal scene of instruction between a human parent and the child first learning to speak. For we suspect that the miracle of human language would never happen if it were not for the way parents enact hope, speaking and listening to their offspring as if their noises matter long before the infants are capable of even attempting to speak or listen—much less speak and listen correctly.

Translated into a narrative of instruction at JCSU, no matter how atrocious the so-called "problems" in Freshman Studies may be, they are not what really matters. We know that our students are already real writers and real readers—even though they may have funny stories about what they understand reading and writing to be. Our most fundamental responsibility to them is to design institutional and pedagogical narratives that will re-enforce each student's aspiration to enter and succeed at the university.

Suggested Readings

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