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ABSTRACT

The need to develop students' critical thinking skills is examined in this paper, along with existing academic support services, federal regulations and requirements, data on minority group students, and measures of program effectiveness. Many programs provide tutorial services to help the student meet the demands of coursework and to increase basic skills of reading, writing, and mathematics. It is usually thought that acquisition of sufficient basic skills will enable students to compete successfully in the classroom. Federal regulations and requirements are vague in suggesting any methodology by which program goals may be achieved. There is a higher rate of attrition in school among low income and minority students compared to middle and upper income students. Innovative programs and methodologies are needed to teach formal operational thinking processes. The student needs to be able to use a wide variety of symbols and understand abstract relationships. The fields of behavioral and educational psychology should be studied to determine effective methodologies for teaching critical thinking. (SW)

A NEW FOCUS FOR ACADEMIC SUPPORT PROGRAMS

by

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I was hoping that the title of this presentation would be sufficient to encourage a large attendance today. From discussions held with TRIO colleagues over the past year, I have been impressed by the variability of focus in the programs, the similarity of stated program objectives, the differing procedures used to effectuate program goals, and the frustration many colleagues express in attempting to comply with the federal regulations and requirements governing program activities.

It seems that after 10 years of hard work, many of us sense that our gains have not been commensurate with our efforts.

While all the federal regulations and requirements governing TRIO programs are admittedly relevant, those most directly concerned with academic support programs are the following:

1. Development and utilization of procedures to identify and select eligible students, including a comprehensive academic needs assessment.
2. Provision of personal, career and academic guidance in those areas that affect the students' academic performance.
3. Provision of remedial and other special services such as special classes, tutoring and educational and cultural activities without creating a long-

range dependency on the project, and the

4. Development and utilization of special curriculum and instructional methods which will enable students to complete required courses in a reasonable period of time.[1]

These requirements are established to accomplish the fundamental goal of the federal regulations, and by extension, the fundamental goal of those responsible for program implementation. This goal is to increase the retention and graduation rates of eligible students.[2] It is therefore not surprising that program objectives are so similarly worded.

Yet, in attempting to comply with federal regulations and requirements, the procedures used in various programs to identify, define and select eligible students, the provision of academic and career guidance, remedial and other special services, and the use of special curriculum and instructional methods, are perhaps as variously defined as is what constitutes a comprehensive academic needs assessment. While all of the above categories are important and deserve further consideration, a definition of what constitutes a comprehensive academic needs assessment is critical to academic support programs.

Some programs assess students' needs by reviewing past performance indicators such as high school grade point average, high school percentile rank, standardized test scores, etc. In others, diagnostic and placement tests are

administered and students may or may not be required to participate in academic support programs such as reading, writing and mathematics laboratories, skills development classes, test anxiety workshops, etc. Some programs think it sufficient to request students to complete self-assessment questionnaires.

The variety of means used to assess student needs is exceeded only by the variety of ways in which tutoring is performed and the special curricular and instructional methods that are utilized within various programs. Most tutoring services appear to be little more than referral agencies. Tutors are usually self-selected, must have a satisfactory grade point average in the content area, and sometimes, faculty recommendations. Once tutor and student are together, they are usually left to their own often inadequate resources. In some programs, the tutor may be required to provide interim and/or final progress reports on the student. At the end of the relationship, the student may or may not be required to evaluate the tutor and program in terms of satisfaction variables. Some programs attempt to provide some training to tutors in order to hopefully improve their effectiveness; however, the elements of tutor training are also widely variable and evaluation of their present efficacy has received only cursory attention.

For the most part, special curricular and instructional methods are confined to the use of remedial texts in the content areas, locally designed supplements, personalized

systems of instruction utilizing some form of the Keller method, individual and small group tutorials, individual counseling, audio-visual aids, and etc. In addition to providing tutorial services to help the student meet the demands of coursework, many programs are also concerned to provide services to increase the basic skills of reading, writing and mathematics. The development of basic skills proficiency is usually the sine qua non of program activities and it is usually thought that acquisition of sufficient skills in these areas will Ipso Facto enable students to compete successfully in the classroom.

Most programs conceive of their activities as remedial and some as developmental. All assume that their activities act to decrease students' disadvantages in the classroom, but it has been difficult to prove that this is so.

That there is a wide variability in the means chosen by individual programs to implement policies and procedures to comply with federal regulations and requirements should come as no surprise. However, while the regulations under which we operate direct and determine the means we choose as well as the effects we choose to measure, they are vague in suggesting any methodology by which our goals and objectives may be achieved.

Since the regulations focus on access, retention and graduation, program success has necessarily been conceived in terms of the numbers who come in, the percentages of those who stay in, and the number who receive the degree.

Now I don't mean to stand here and disparage these measures, for they are certainly necessary and important. This is especially so when we consider that nationally, it is estimated that between 60% and 70% of all first graders who happen to be Black or Brown will never graduate from an American public high school[3] and that only 11% of those who do matriculate to college will receive the degree.[4] Neither do I wish to imply that there have not been some significant successes in some academic support programs. Those at Southern Illinois University and Marquette are examples of programs that have documented significant success.

Nevertheless, despite our efforts and increases in federal funding, recent years have seen little relative improvement in the success rates of minority students enrolled in higher education institutions. The gap between Whites and Blacks who have completed four or more years of college has been widening and is continuing to increase. In 1960, it was seven percentage points and in 1974 it increased to almost 13 percentage points.[5] Recent public reports, however, imply that the situation for Blacks and other minorities is improving; however, I consider this public optimism highly suspect. In 1947, there were only about 3500 Blacks in the nation who had received five or more years of college.[6] In 1974, there were 700,000 Black college graduates. By 1977, this figure had increased to 984,000.[7] Of the 1,062,000 Blacks enrolled in post-secondary institutions in 1977, 60% were enrolled in two-year

colleges, vocational and technical schools. Of the 40% enrolled in four year, post-secondary, degree granting institutions (424,000), half were attending one of the 107 historically Black colleges. The other 50% attended predominantly White institutions.[8] How can public optimism be sustained when the institutions for which we work can show such a pitiful increase after over a decade of so-called "educational opportunity?" In 1970, seven of every 100 college students were Black; in 1974 nine of every 100 were Black.[9] Figures such as these give me little cause for optimism.

Our efforts to measure retention have shown that disparate rates of attrition continue to exist among low-income and minority students as compared to middle and upper income students. Data from Astin's 1975 study suggests that Blacks in historically White colleges have attrition rates approximately 50% higher than either Whites in predominantly White institutions or Blacks in Black institutions.[10] For every 10 Black males who enter college, only three are still enrolled three years later.[11]

When we measure program effectiveness in terms of graduation rates, we find that in 1976 only three percent of the Baccalaureate degrees awarded by predominantly White institutions were granted to Black students.[12]

However, only a small percentage of those gradua are entering graduate and professional schools sufficiently prepared to successfully complete degree requirements. This

fact can be illustrated by comparing the percentage of Baccalaureate degrees awarded to Blacks to the percentage of Blacks enrolled in graduate and professional schools. In 1970, while minorities received 7.8% of the B. A. degrees awarded, only 5.4% were enrolled in graduate and professional schools. This represents less than a one percent increase over the 4.8% total minority graduate enrollment of 1960. It is significant to note that of the 52,734 Baccalaureate degrees awarded to Blacks between 1973 and 1974, over 46% were conferred by 88 historically Black colleges.[13] With the exception of the post World War II period, the proportion of minorities receiving the doctorate has never exceeded 2.2%.[14]

An increased mood of conservatism, most recently expressed in the national election results, the recent Supreme Court decision on BAKKE, the passage of proposition 13 type measures, increasing inflation and declining resources, has jeopardized our base of federal and public support. Under these pressures, TRIO directors are encouraged to develop and employ evaluation techniques that will measure success in terms of access, retention and graduation rates, all of which are concepts requiring quantitive measurement, and which seek to provide information for policy decisions external to the Program. Frustration may be a necessary consequence of inappropriate focus within internal program structures.

Here it may be useful to remind ourselves of the socio-

political context from which the TRIO programs emerged and the reason for this existence. I won't attempt to reiterate that history here. Mayor Hatcher made sufficient reference to it in his speech on Sunday. But it should be stressed that long before the 1954 BROWN decision, Black leadership recognized that the only effective means available for eradicating the all pervasive racism that oppressed and oppresses us, was to acquire the knowledge and skills that reside in the halls of higher education, and that for generations was withheld from us, knowledge and skills without which survival in an increasingly complex technological society will soon become impossible.

The unrest of the 60's forced the passage of legislation from which emerged the programs which have come to be known as TRIO. It must be remembered that these programs were intended to provide a mechanism by which the historically excluded could achieve an education through the provision of educational opportunities. At that time the focus was on the concept of education. But it soon became clear that opportunity as a concept was too passive to overcome the active resistance of institutionalized racism. By 1972, the concept of affirmative action in employment had been applied to institutions of higher education and soon, the concept of student affirmative action was born -- a concept that was no more willingly accepted by institutions of higher education than it was willingly accepted in business and industry. The latest indication of this resistance to equal educational

opportunity is to be found in the Bakke decision.

These issues lead us to question whether we should now attempt to identify a new focus for our efforts. In attempting to identify such a new focus for our efforts, I am not advocating that we should no longer be concerned with increasing access, retention and graduation rates. Nor am I suggesting that quantitative measures of the effect of our efforts be abandoned; however, I am suggesting that it is now appropriate to examine the means by which we are attempting to meet our objectives. I will suggest that a specific focus for the achievement of both internal program objectives and external program goals might appropriately be placed on the concept of the mastery of critical thinking rather than the more general and diffuse focus characteristic of our efforts to date.

What is meant when we speak of critical thinking? The concept has lately received considerable attention, yet there is little consensus among educators as to its meaning. To some it is analogous to the concept of problem solving -- one becomes aware that an inconsistency or problem exists and defines it so that it can be solved, then an hypothesis is developed and tested in terms of relevant data. If the hypothesis is correct, the problem is solved; if not, new hypotheses are generated and tested. To others, critical thinking is analogous to the principles of logic -- to teach critical thinking, one teaches principles of logic and

shows how they are applied in some context such as chemistry, social studies, math and etc.

Robert Ennis, a pioneer in the field of critical thinking, proposed a linguistic definition when he defined critical thinking as the correct assessing of statements, and categorized the concept as having a logical, a criterial and a pragmatic dimension.[15]

Essentially, a review of the literature on critical thinking reveals such concepts as "scientific method," and scientific, productive and reflective thinking. I refer you to the works of Dewey, Ennis, Watson and Glaser, Ballou Skinner, et. al., for further investigation. Critical thinking seems also to be concerned with criticism, which implies standards of judgment.[16] It would therefore follow that:

> "teaching critical thinking involves helping students develop standards or criteria for judgment and developing their skill in employing these in assessing the object of criticism. Prerequisite to this is providing an understanding of basic principles of semantics, logic and the theory of values."[17]

If the focus of our programs is expanded from teaching basic skills to teaching critical thinking we can, as Henderson (1972) suggests, approach that concept either through teaching problem-solving or applied logic; but our objective would be to require the student to engage in reflective thinking:

> ". . . which, to borrow some ideas from Dewey, is the careful and persistent examination of an action,

> proposal, belief, analysis, or use of knowledge in the light of the grounds which justify it, and its probable consequences. It is also to engage in criticism interpreted as evaluation -- what is good, if anything is good, and what is bad, if anything is bad, about the action, proposal, belief, and so on, and about the grounds which support it."[18]

Earlier, it was suggested that some programs have been successful in improving certain skills, such as math and rhetoric, but not completely successful in helping students get the degree with adequate preparation to compete successfully in graduate school. This might be because mastery of just these skills leaves students still at a disadvantage in a wide area of subject matters (ranging from the A of anthropology to the Z of zoology) required for the degree. We can help students out of this bind by teaching them to think better critically. They can then be expected to receive benefits far beyond those gained by successful completion of elementary mathematics and reading skills courses.

When we examine the environment in which we live in relation to the populations we serve, we can come to no other conclusion that that our primary role must be to bring about an increase in levels of complex cognitive functioning in our students. To do this, we must develop instructional materials and teaching methods to accelerate the student's ability to use a wide variety of symbols and understand increasingly abstract relationships. Piaget, the Swiss developmental psychologist, has theorized that there are four distinguishable formative stages to development; the

sensori-motor, the preoperational, the concrete operational and the formal operational. Complex cognitive development is thought to increase as the individual masters mental operations characteristic of the stage of formal operations. A great deal of developmental work has shown that the individual achieves a biological capacity for formal operational thought usually between the 11th and 15th year.[19]

However, recent studies have indicated that "as many as 50% of U. S. college freshmen have not reached the stage of formal operations, but enter college in the concrete operational stage." Individuals in this stage "can only recognize possibilities based on his or her own experiences," while those at the stage of formal operations can "understand abstractions without the necessity for experience with tangible objects."[20]

Since experience seems to be a necessary prerequisite for development, Piaget's theory implies that:

> ". . . concrete operational students would be better served by . . . teaching methods . . . that introduce new concepts by providing students with opportunities to interact with concrete materials, time to draw conclusions about the possible relationships between observable variables and a period for discussing and testing these conclusions prior to beginning consideration of the theoretical concepts which provide a rationale for those observations."[21]

Since thinking occurs in what Bloom defines as the cognitive domain, Bloom's taxonomy on educational objectives will be a useful tool for educators who are interested in an increase in students' critical thinking ability.

If we fail to develop innovative programs and methodologies that in their function fulfill this requirement of

improving formal operational thinking processes, then we will continue to fail in being able to effectively demonstrate that the students we serve can compete with the advantaged student in the broad areas requisite to obtaining a degree. If that happens, our programs will come under serious attack -- and perhaps justifiably so.

It is, then, to the direct teaching of critical thinking that we must direct our efforts. We must research and develop appropriate technologies and methods. We must become intimately conversant with learning and developmental theory and develop new theories as necessary, based on the populations we serve and the instruments that are needed to provide them with the education to develop these cognitive thought processes. We must research and develop methodologies for providing this information at an increased rate so that our students can equal or excel students who have not had formal training in the development of complex cognitive processes. We must find out what works and we must publicize and share it.

Sufficient evidence exists to indicate that the teaching of critical thinking is not outside the realm of possibility. Arthur Whimby, of Bowling Green State University has had some successes that may have significant influence on future program methodologies and structures. He has constructed a workbook that uses techniques such as dyadic pairing, verbalization, sequential repetition, analysis and synthesis to teach students specific types of cognitive learning skills. The New Dimensions in Learning Program (NDIL)

at the University of Iowa is presently conducting a pilot study and making a content analysis of it to determine the quality and quantity of change that may occur in students' performance as a result of its use. Since improved critical thinking performance may not be immediately observable, this study is necessarily longitudinal.

Examples of programs focused on the teaching of critical thinking are the ADAPT program at the University of Nebraska/Lincoln; the SOAR program at Xavier University and the DOORS program at Illinois Central. Initial evaluations of these programs seem promising.

It must be emphasized that it will be necessary to provide specific training to those teaching critical thinking. Additionally, we must explore the fields of behavioral and educational psychology to determine effective methodologies to enhance our efforts. We must also develop quality control mechanisms to insure that the materials and methodologies we develop are placed in practice and their effect evaluated. We must not only fill the information gap -- we must fill the process gap. Federal regulations require us to assess our students' educational needs, determine appropriate instructional materials and methodologies to satisfy those needs, and then to measure the results of our activities. If we emphasize the mastery of critical thinking in our programs, materials and methods, the results of our efforts should be apparent not only in an increased level of retention and graduation, but also in increased completion rates in

graduate and professional schools.

In summary, we as persons concerned with academic support programs have taken on the difficult if not impossible task of attempting to compensate for America's failure to provide a meaningful education for many of its youth. This failure results from inadequate primary and secondary education. It is the product of economic deprivation and often the product of physical disability. When we assess our students' needs, we find that their most pressing problem is to develop the cognitive thinking skills to successfully compete in college and in the wider realm of our increasingly technological society. Increased critical thinking skills mean an increased ability to think scientifically. To think scientifically is to approach a problem with several solutions and test them until the right solution is found. It is at this level of formal operational thinking that we must begin to direct our attention. If we do not develop innovative programs and methodologies that teach formal operational thinking processes, then our efforts will ultimately have made no difference in the overall structure of American society.

FOOTNOTES

1. Federal Register, vol. 42, no. 100, Tuesday, May 24, 1977, p. 26544.

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3. Roueche, John, in Proceedings of the National Conference on Remedial/Developmental Studies in Post-Secondary Institutions. Chicago, Illinois, March 17-18, 1977, p. 18.

4. "Social Indicators of Equality for Minorities and Women," U. S. Commission on Civil Rights, August, 1978, p. 26.

5. Conley, H., et al, "Desegregation Dilemma and its Impact on the Quality of Life for Black Americans -- Year 2000." Eric Documents ED 141-150, 1977, p. 4.

6. "Availability Data - Minorities and Women," Office for Civil Rights, Department of Health, Education and Welfare, 3/73, TAB-D.

7. "Boost for Academic Parity," Des Moines Register, 7/19/78.

8. Watson, Bernard C., "The Status of Black America, 1978," National Urban League, 1/78, p. 56.

9. English, R. A. and Settle, T. J., "Minority Men and Women in Graduate Education; The Case for National Action," presented at the National Black Alliance for Graduate Level Education Conference, 1975, p. 3.

10. Mitchem, A. "Directions for Equal Opportunity in Higher Education: Financial Aid or Supportive Services," paper presented at George Washington University, 6/8/77, p. 7.

11. Ibid.

12. Ibid., p. 8.

13. English, R. A., et al, op cit., p. 3.

14. Ibid., also see, "Minority Groups among U. S. Doctorate Level Scientists, Engineers and Scholars, 1973," National Research Council, p. 23.

15. Ennis, R. H., "A Concept of Critical Thinking: A Proposed Basis for Research in the Teaching and Evaluation of Critical Thinking Ability," Harvard Education Review, 32:81-111, 1962.

16. Ibid.

17. Henderson, K. B., "The Teaching of Critical Thinking," The Educational Forum 37-1, Nov. 1972, p. 46.

18. Ibid.

19. Carmichael, J. W., et al, Project SOAR (Stress on Analytical Reasoning), Piagetian Based Multi-Disciplinary Program for College Freshmen, Fall 1977, p. 165.

20. Ibid.

21. Ibid.