transferred has no effect on the relationship between the junior college GPA's and first semester GPA's at Texas Tech.

Summary

This study indicates that the GPA of a student from a junior college may be related to the GPA that will subsequently be made at Texas Tech University. The GPA of transfer students from one college may be highly positively correlated with their Texas Tech GPA while the relationship may be highly negatively correlated for another college.

The GPA's for students from "feeder" colleges, i.e., those from West Texas and Eastern New Mexico colleges and who consequently usually have three or more transfer hours are more closely related to first semester GPA's at Texas Tech University than for those transfers from colleges outside of this area.

Correlation coefficients indicating the junior college-senior college GPA relationship show that number of hours taken at the junior colleges had no effect on the relationship.

[1] Strait, Leland C., "Do Community College Transfer Students Succeed In Colleges of Agriculture?" NACTA Journal XVIII-4:77-80, 1973.

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PRIORITIES AND INTERPRETATIONS OF TECHNICAL EDUCATION

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From all segments of society comes mounting evidence against the status quo in education. Many observers are convinced that education is in need of significant reform. Citizens are demanding that educators be accountable for their use of public funds and for the outcomes of education. They are asking for evidence of student behavioral changes in response to educational programming.

In the past, educators have been concerned with program standards such as classroom size, availability of display equipment, the appropriateness of visual aids, and other items of a tangible nature. Process evaluation also examines student-teacher ratio, amounts of money budgeted for instructional materials, and salaries for instructors. In itself, however, a process evaluation is not an adequate measure of program effectiveness.

Accountability is readily accepted but rarely demonstrated by those in the classroom. Yet achievement of goals in technical education, when compared with a purely academic achievement, should be relatively easy to measure. Manipulative skill is allied to some degree with almost every technical program and the results of that skill can be quite evident. Such goals as the appropriate mathematical dimensions on a drawing can be measured to effectively evaluate the end product of classroom work.

What seems to be lacking is the instrumentation to carry out a thorough and complete evaluation. We do not have measures to show our accomplishments. The challenge is to draw up acceptable means of analyzing achievement of both a theoretical and performance nature. These would show that educators within the program are meeting their stated goals through proper instruction and curriculum.

Training for More than Skills

However, we must recognize that instructors as professionals are responsible for a level of learning which goes beyond training for technical skills. Professionals, by definition, do not subscribe to a fixed set of common beliefs and behaviors. Professionals do differ as to what constitutes sound professional practice. Dependence on accountability tends to limit the curriculum to those lesser learnings which are subject to classification and quantification. Critics of accountability deplore its seeming potential for neglect of the greater learnings such as development of capacities to raise questions, synthesize ideas, trust one's own insights, make independent critical judgments, make autonomous choices, and specify one's own goals. The professional educator assumes responsibility for these greater learnings along with his commitment to skill development.

In working toward more effective evaluation of their programs, instructors must know clearly the intent of each course they teach. In addition, they must faithfully adhere to the objectives entrusted to them, must develop effective methods to enable students to achieve those objectives, and must realistically test progress and accomplishment. In other words, a good accountability program is one that not only establishes goals but sets up procedures for reaching those goals.

The following are some suggested factors that can be used to evaluate student performance in a viable technical program.

1. Knowledge of subject matter
2. Quality and quantity of achievement
3. Ability to work independently
4. Creativity and imagination
5. Acceptance of responsibility
6. Ability to communicate and work with others

The Technical Student

In evaluating technical education programs, it is important to remember that educational institutions and programs exist primarily for the purpose of educating individuals. So much is said and written about curriculums, physical plant, equipment, faculty, and similar topics that one could easily get confused about the ultimate purpose of education. In evaluating the worth and efficiency of technical education, we must remember that the primary goal is to answer the needs of individual students.

In order to gain a better understanding of the technical student as an individual we must look for the answers to some specific questions about him. Where do students come from, what kind of people are they, and what do they want? What do they actually achieve in school and what is their place in industry? Where do they fit into society and what recognition does society give to them?

Factors in Choosing a Technical Education

Federal-state expenditures are projected toward a student capacity in two-year technical institutes of 750,000 by 1975. Will we have the enrollment to fill this capacity? A student's preference for a technical education is often the result of a desire both for constructive achievement and to please others. But a survey conducted at the University of Syracuse indicated that the desire to please others often dominates the drive for achievement. If a student has a choice of being either a good technician or a poor lawyer, too often his parents would rather have him be a poor lawyer – and that is what he becomes. The chief conclusion of a majority of student surveys is that parents play the major role in their children's choices of (1) post-secondary education as well as later career decisions – much more of a role, for instance, than guidance counselors.

Peer-group opinion is a critical factor in the way the technical school program is perceived by students. The chance to enter a well chosen career field, to learn an occupation and to assume an adult role should be emphasized. Satisfied and successful technical education students are the one best advertisement the program can have. Well trained, productive graduates will provide the community with an important on-going positive evaluation of their education.

Individual Interests

It is often very difficult to discover just which students would prefer the job of the technician over that of the engineer or scientist. Most young people are not really sure just what it is they prefer to do. They are confused at the many possibilities available to them in their choice of schools. In addition, those who advise young people are not always entirely aware of what the job of an engineer or scientist entails. A special aptitude in science and mathematics would certainly indicate a capacity for one of these professions. But is this what the student really wants?

Some advisors seem hesitant to recommend a good student to a program of higher education which does not qualify him for a bachelors degree. Students themselves are also unlikely to select a technical institute program as a higher education goal. Smith and Lipsett (4) point out that on questionnaires many students unrealistically will list prestige occupations such as physician, lawyer, and accountant as career goals. Even though they may not really prefer the professional field, they feel the social pressure for the bachelors degree. This concept was further discussed in the report of the Panel on Two-Year Programs (3) in the June 1971 issue of the NACTA Journal.

Characteristics of the Technical Student

In this discussion of evaluating technical programs, it may be helpful to summarize some of the characteristics common to many technical students. The majority of these students are 18 to 20 years old. At this age a person is still learning who he is, and what he really feels. It is the time during which he differentiates himself from his culture, though on the culture's terms.

In many respects the college is not an agent which influences changes in society through its students; rather, it is an arena in which social forces interact, with students, instructors, and administrators playing familiar roles. The college provides its graduates with a degree which is becoming increasingly important in the search for a decent job in an impersonal society.

The college also transmits some of the knowledge, intellectual skills, and attitudes on which the tradition of Western civilization depends. It continues to contribute to the development of a middle class with some background in the arts, discriminating in consumption, and anxious to maintain a broad interest in its involvement in world affairs.

Another important function of the college for the young adult is to clarify for its students the meaning of their experience of life in their society. The young people of the community need a firm and solid philosophical apparatus for making sense out of their lives, and for communicating with other people.

Growth of the college student can and should lead to a completely human adulthood, defined as the development of a stable sense of self. Our colleges should be places where you can not only learn to be a repairman, a store manager, a food inspector, or a laboratory technician, but learn that you are good at it, and in which your awareness and pride in being good at it become a part of your sense of being you.

The greatest safeguard to any democracy is a continuing community of self-respecting young people who understand and accept their relationship to society. The basic unit of such a community is a stable self to respect. How can all professional members of the educational community cooperate most effectively in the use of their talents to help our young people achieve this goal? In our concern to improve the evaluation of technical programs, we must keep in mind not only the content but also the concepts to be promoted through the educational process.

Use of Student Committees in Evaluation

Student involvement in planning and evaluation can be of significant benefit to a forward-looking technical program. Students represent an untapped source of assistance in the management of the educational system.

Student committees could be set up in an advisory capacity for the technical educational programs in the college. Some of the areas in which these student committees would be most effective are discussed below.

1. Participation in conducting follow-up studies of former students. Student committees could design instruments for follow-up studies, locate former students, respond to items on the questionnaire before distribution, help to analyze follow-up returns and make recommendations based on responses from former students. These activities could be used to help students gain valuable insights into their own future career problems and opportunities.
2. Discussing and reacting to the college's statements of philosophy, goals and objectives. Students could review philosophy, incorporate concepts of their own, and make recommendations that would add a touch of student realism. If students are given a say in philosophy, policy, rules, and procedures, their actions are more likely to support the decisions made.
3. Assisting in evaluating the technical program and formulating recommendations for improving the educational program. Students can provide remarkable insights for improving educational programs. Students holding part-time jobs related to their training have a unique background for appraising the merits of their educational experiences.

The mechanics of formulating and organizing student committees can be very important to the success of such a program. Student committees should be formulated on the basis of selection by instructors and selection by students with staff approval. Committee members should meet predetermined standards based on citizenship, scholarship, school activities, and attendance. The committee should be representative of the student body and should include students from all ethnic, social, and economic groups represented. Guidance and support from faculty advisors is of paramount importance for the successful performance of such a committee.

Committees should hold regular meetings, with a well planned agenda for each meeting worked out by the committee officers and advisors. Without sufficient planning, committee meetings can easily degenerate into gripe sessions. With proper planning, they can be valuable to all concerned. The successful operation of a student committee depends to a great extent on the attitudes and openness of instructors and administrators. Students have much to contribute to our program improvement efforts. They should be helped to do so in a systematic, organized manner.

Evaluating the Performance of Graduates

Evaluation of technical programs by instructors, administrators, and students can give data that fills in only part of the total picture. Still another area must be explored in greater detail. What is actually happening to our graduates? Are our graduates finding employment consistent with their aspirations, capabilities, and interests? Do the dropouts find satisfactory employment? If not, what does happen to them?

We need to increase our use of external measures to evaluate the performance of students after they complete their undergraduate training. The follow-up study is still the best technique available. Such evaluations must be conducted over a substantial period of time – much longer than a single year or two. Concentrated use of a variety of these measures would provide hard data to support the value of the many programs training personnel for responsible positions in the technical field.

Students who leave college without completing their programs should be included in these studies. Many technical college students enter employment before graduation. Some of the questions which should be answered are: why did they leave college, are they employed in the field of specialization for which they were training, did their post-secondary training help them on their present job, and would a degree have been of additional benefit.

Questionnaires should be carefully planned. For maximum efficiency, information available in college records should not be included elsewhere. This would reduce the length of the surveys, and might encourage greater response.

Another important factor which should receive consideration is undergraduate employment experience. Many college students are employed part time, and this employment is often directly related to their field of study. In reporting post-college circumstances such as salaries, position levels, and career advancement, sensitive evaluation requires that distinctions be made between students who attended college to gain career

entry skills and those who already had work experience when they enrolled. Certainly the progress students make and comparisons between student potential and actual accomplishment must also be taken into account.

In evaluating the performance of graduates, more attention should be given to long-range follow up studies. Lifetime career development information in the occupational fields of the graduates is needed to fully understand the educational preparation most suitable for students in given occupational areas.

One example of a long-term follow up of graduates of vocational training is that done by Dr. L. O. Brockmann in 1970(2). Dr. Brockmann sent questionnaires to 615 former students of Fergus (Montana) High School, who had enrolled in the cooperative training program between 1930 and 1944. Approximately 70% of these were returned, and formed the basis for Dr. Brockmann's report, Cooperative Work Experience Education – A Study in Success Twenty-Six to Forty Years Later.

Surveys of this type could be very helpful in evaluating the results of our technical programs, giving a more complete and valid picture of the strengths and weaknesses than can be seen from a survey of graduates of only one or two years. Consideration should be given to selecting a representative sample of each class who would be surveyed at specified intervals after graduation. Continuing studies and reports on their progress and changes in attitudes could be most helpful in evaluating the worth of educational programs in our schools. Dr. Brockmann establishes excellent guidelines that could be used to good advantage in preparing long-range follow-ups of technical students.

Conclusion

In an educational climate which is operating on increasingly limited resources, those programs that can prove their worth through concrete data will have the best chance for survival. The big hurdles to educational program improvement are the barriers in the minds of people. Unless citizens, students, and educators are personally involved in designing and conducting the effort to improve educational programs, it is not likely to result in much success.

Research in technical education has been minimal. The need for broad, in-depth research is apparent in such areas as the process of technical education, individualized instruction, core curriculum development, uses of community facilities, program cost, optimal number of students, and individual versus group hands-on training.

The strength of technical education programs has come from their flexibility and responsiveness to changing needs of students and industry. These qualities can only be maintained through continuing evaluation of the effectiveness of the programs now being offered. Most important of all, this work needs to be carried on with an increasing depth of perspective and a clear sense of purpose and commitment.

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INTRODUCTORY LANDSCAPE HORTICULTURE IN ADULT EDUCATION

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During 1973 the Columbus, Ohio YMCA and the Continuing Education Division at The Ohio State University offered a course on basic landscape horticulture. Advertising for the course was made through normal promotional channels, including mailed brochures and spot announcements on radio stations.

The course was popular with the adults. It was a non-credit course taught once a week between 7:30 to 9:30 p.m. for a 10-week quarter.

An evaluation form was developed to obtain feedback from the adults enrolled on the content of the course and the teaching techniques. An instrument was developed also to measure the adults knowledge relating to the content of the course.

The purpose of this paper is to relate the experiences gained as a result of teaching and evaluating the course.

Course Content

The course was conducted as a lecture-discussion relying heavily on visual aids (35mm slides) to help present the subject matter. The syllabus consisted of the following units or topics.

1. Plant selection for use around the house. (Slides were accompanied by a description of the plants.)
2. Basic design principles for landscaping the public and private areas of the home.
3. Common construction techniques; wall building and patio construction.
4. Maintenance problems typical to most home situations.
5. Flower and vegetable gardening concepts including a laboratory session in terrarium construction with the students making their own terrariums, and discussion of the plot plan drawings the students had been working on throughout the quarter.

On the first day of class, the students were asked to complete a pre-test (Fig. 1). On the last day of class the students were asked to take the same examination as a post-test. This provided means of measuring their gain in horticultural knowledge through the quarter. Only those students who had taken both a pre-test and post-test could be used in making this comparison.

Figure 1.
Some Improved Practices Emphasized in the Landscape Horticulture Adult Education Program

Name _____ Sex _____ Age _____
Occupational Status _____
A homeowner presently? _____ In the near future? _____
If presently, what area? Urban ___ Suburban ___ Rural _____

Your response to the following questions would be appreciated:

	Yes	No	Do not know:
1. The property is developed for three basic areas - public, private and service.			
2. The selection and planting of trees, shrubs and ground covers is based on aesthetics only.			
3. Each facing of the house has a different microclimate and therefore will support various forms of plant material.			
4. Test the soil for pH as well as fertility before making any permanent planting.			
5. Buy and use fertilizer based on its brand name.			
6. The use of sphagnum peat moss in plantings will increase the alkalinity of the soil as well as improve its physical condition.			
7. Use systemic insecticides on plant material which would develop fruit that may be eaten by wildlife and children.			
8. It is best to attempt to establish a quality lawn from seed in the spring of the year rather than fall.			
9. Mow a bluegrass lawn at 1½ to 2", water infrequently, but heavily, and fertilize with at least one pound N/1000 sq. ft. 3 times a year.			