

THERE is little question but that those associated with the American secondary school must initiate change dynamisms if the qualitative aspects of education are to receive their proper emphasis. If we are really serious about excellence in our high schools, then schools must break away from traditional practices and experiment with new and promising ideas. Perhaps then some of Trump's predictions in *Images of the Future*¹ will become realities. At least this has been the case in one school in Omaha, Nebraska.

A sincere concern for the qualitative aspects of its educational program caused Archbishop Ryan High School, a private coeducational school, enrolling approximately 1,050 students, to initiate a full-scale modular schedule² for the 1966-67 school year. Thus Ryan High, under the direction of Sister M. Pacis, O.S.F., principal, in the ninth year of the school and after two years' preparation with the staff, students, parents and local community, became the first school in Nebraska to implement such a schedule.

Modular scheduling was adopted because of the incongruity of student ability and achievement. Careful stud-

¹J. Lloyd Trump. *Images of the Future*. Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. Washington, D.C.: National Association of Secondary-School Principals, 1959.

²Basically modular scheduling divides the school day into equal units of time which are considerably shorter than the traditional class period. These shorter units, called modules are combined in a variety of ways to meet the individual needs of both the student and the teacher. Consequently, the size of student groups, media for learning and time requirements evolve from the arrangement of modules.

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AN APPROACH TO FLEXIBILITY

ies of student performances on national tests over the eight years of the school's existence consistently showed excellence in ability whereas actual achievement within the school and for four years with alumni at colleges and universities consistently was below valid expectations.

The Problem of Underachievement

A study of the parental background of the students and community revealed that a large portion of the school's enrollment came from highly

nationalistic ethnic groups in which, in some cases, English was the second language in the homes. Summer remedial reading programs for selected incoming freshmen were used as an attempt to reduce the difficulties language barriers present. Additional studies of the curriculum and subsequent revisions were instigated in attempts to accommodate contemporary society and the 75 percent college bound student enrollment.

None of the modifications or plans seemed to have the inherent motivational aspects so essential to student achievement. Consequently, the next effort was to investigate teaching methods, program structure, and personal involvement in learning by the student. This led to the decision to consider a modular schedule.

Initiating the Modular Schedule

Sister Pacis undertook a cooperative staff study of modular scheduling which included its purposes, operation and feasibility. This exploratory phase evolved into an orientation program which included faculty-wide in-service programs, visitations by faculty to other schools and the utilization of resource people. Once the decision was made to proceed with the development of a modular schedule an inventory of facilities and resources—both physical and human—was undertaken.

This inventory included departmental requests as to time allocations—scheduled and unscheduled—for each of the courses and modes of instruction proposed. Reports from the departments indicated space needs and suggested modification of facilities, present usable material resources and

requests for additional materials. The personnel inventory contained the strength and weakness of staff members as they related to the various modes of instruction and any additional personnel requirements. Then the principal and staff, using the inventory as the basic document, arrived at mutually compatible decisions about curriculum content, time allocations, modes of instruction, staff needs and space requirements.

At Ryan, originally built as a traditional school with self-contained classrooms and laboratories for classes of 30 to 35, the necessity for physical changes was minimal. One wall was removed between two traditional typing rooms to make one large business lab with a flexible wall being installed to provide for subdivisions. Room utilizations became more efficient when the large music rooms and the cafeteria were used for large group instruction areas and a supervised study room. In the future, other classrooms, the library and the gym may need to be modified to provide additional flexibility.

Ryan High used a program designed by Charles Elliott and the facilities of the McDonnell Automation Center, St. Louis, Missouri, as an aid in preparing the master schedule, but did not have the computer generate the final schedule. The school prepares its own master schedule manually because this control facilitates better personnel interpretation for both student and teacher needs.

Procedures used in developing the schedule at Ryan were:

1. Register the students for their course selections.
2. Code on a course-request form the

name of each student with his courses specified by course number, track and semester. Submit to the computer which prepares a conflict matrix.

3. The conflict matrix is used to schedule large group lectures avoiding conflicts in student requests, rooms and teachers. Then schedule the small groups tied to the large groups. Code and resubmit to the computer which will schedule and return individual student conflicts.

4. Resolve individual student conflicts manually and send back. Individual class lists and student programs are generated by the computer.

Ryan's Modular Schedule

At Ryan, the school day is reshaped from the traditional lockstep method of programming to a seventeen module day of twenty minutes per module with three minute passing periods. While the basic module is twenty minutes, school subjects are scheduled for a varying number of modules depending on the nature of the course and the request of the teachers of given departments. A class does not meet formally each day, but may be scheduled once, twice, three, or four times a week, depending, again, on departmental requests, nature of the learning activities, and the amount of individual student study or research needed. However, once the schedule for each pupil is established, it becomes as rigid as the traditional schedule.

Basically, learning takes place within three kinds of situations. First, a team of teachers in a subject area is responsible for presentations to a large group of students ranging in number from 90 to 250. Such presentations occur once or, at most, twice a week. The student, in such a large group, obviously cannot

ask questions, but follows an outline which the team prepares and distributes in advance.

The second approach involves sessions in which students are placed in small groups according to their talent. Each small group consists of from 8 to 20 students, with an ideal of about 11, and meets two or three times a week with a teacher as a resource person. Here the students question, discuss, investigate, validate, and evaluate their understanding of concepts.

A third type of activity is independent study. Each student has about one-third of his program unscheduled. During this time he can channel his activity as he needs to. He might do research on his own (either teacher or self-directed) in the library, prepare experiments in a science laboratory, pursue some project in one of the fine or practical arts laboratories, study independently or with a fellow student, confer with a resource teacher, or work in a supervised study hall.

Since classes do not meet for uniform lengths of time, and because modular scheduling tends to place the responsibility on the student for being present for a given class activity at a designated time, there are no intruding sounds of bells. A natural outgrowth of periods of variable length and the concomitant staggered arrangement is that only a small percentage of the student body moves at any time.

There is no congregating in corridors, no waiting for the bell. Instead, students go directly to their next class. Shorter passing periods are needed and the quiet atmosphere which is so much in evidence is enhanced. Without bells the students are made to feel that they have

"appointments to keep," rather than meeting for classes, with a resultant increase in self-reliance and sense of responsibility.

The emphasis has shifted sharply in the school from a place in which teachers present information to a largely passive audience to a milieu in which students learn through an active involvement in instructional media. Professionalism is enhanced on the part of the teacher as he assumes the role of a resource person who occasionally lectures, but with many opportunities for overt interaction with the students.

This does not minimize the role of the teacher who has additional opportunities to work with individuals rather than groups. In fact, teachers are more important as their efforts become more meaningful and professional in nature. The dominant people in the system are self-directed and motivated students, who are actively engaged in the process of learning.

Plans for Evaluation

A longitudinal study is in progress in which several evaluation instruments and techniques are being used to collect data to determine the impact of the new approach of programming on the students, staff and patrons of the school. This study involves the cooperative efforts of the Ryan staff, Creighton University and the Mid-Continent Regional Educational Laboratory.

Since it is agreed that the fundamental purposes of an education are to effect changes in the way the student thinks, feels and acts, these factors will be evaluated. In addition to measures of subject matter achievement, the changes in student self-concept of

academic ability, patterns of study habits and attitudes, and problem-solving skills and critical thinking modes will be assessed.

Such instruments as the Brown-Holtzman Survey of Study Habits and Attitudes, the Michigan State General Self-Concept of Ability Scale, the Iowa Tests of Educational Development and the Scholastic High School Placement Tests will be used. Student interviews and questionnaires are also included in the study. The staff is also keeping accurate records of usage of the independent study facilities, i.e., science, fine arts and other laboratories, incidence of discipline problems, and school attendance. The librarian is recording the kinds of library materials being used and the number of student visitations.

Teacher questionnaires, supervisor reports, course syllabi, teacher projects, faculty departmental and interdepartmental meetings will reflect changes in faculty interaction, morale and effectiveness. Student questionnaires should indicate the changes in teacher-student relationships and the amount of faculty-student interaction. The patron perception of the modular scheduling program will be elicited through a questionnaire and solicited and unsolicited comments.

Conferences with parents should yield information about their viewpoints on the effectiveness of the changes in the Ryan program. Perhaps, at a later date, interviews with individuals selected at random in the community will be incorporated in the study. Data from another follow-up study of alumni will be contrasted with the results of the first studies.

Promising Outcomes

Those associated with the Ryan program and its evaluation are cognizant of a possible Hawthorne effect and of the subjectivity of some of the data. Based on one semester of experience and with the preceding limitations, the following statements by categories are presented.

1. STUDENTS

- a. Label it a program to eliminate boredom.
- b. Scores on departmental tests are significantly higher.
- c. Semester course failures reduced from 63 to 21.
- d. Preparation for classes is somewhat increased.
- e. Discipline problems reduced 65 percent, with no incidents in classrooms.
- f. Behavior is self-motivated, with concomitant reduction of tension.
- g. No truancy or unexcused absences.
- h. Greatest benefits accrue to high and low ability students.

2. FACULTY

- a. Self-concept of professionalism enhanced considerably.
- b. Respect for colleagues greatly increased.
- c. Developed a new respect for the school's instructional materials.
- d. Increased utilization of a multi-text approach, especially in the social studies.
- e. Preparation for classes significantly increased.

- f. Agreement on increased student responsibility for learning.
- g. Greater progress in course syllabi, both in breadth and depth.

3. PARENTAL REACTION

- a. Encourages student maturity and responsibility.
- b. Student's study habits are improved with an increased interest in school.
- c. Places the accent on the student.
- d. Students benefit from the continuous availability of an appropriate resource teacher.
- e. Concerned about the effect on the low-ability student.
- f. Wondering if students will neglect subjects they dislike.
- g. Eighty-nine percent of the respondents approved the program.

4. GENERAL

- a. Changes in attitudes and performance of both faculty and students exceeded expectations of principal.
- b. No accurate tally of inquiries about the program, but 339 administrators and teachers from six states visited the school during the first semester. Some individuals have returned four times, with one school basing its decision to adopt modular scheduling on the visits.

Sister Pacis has stated that the modular scheduling is the first phase of Ryan's implementation of a non-graded school. It is anticipated that Ryan will be using such a plan in about two or three years.



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