

DIFFERENCES IN BEHAVIORAL PATTERNS
OF STUDENTS AND TEACHERS UNDER
ONE-HOUR AND TWO-HOUR CLASS PERIOD SYSTEMS

by 544

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INTRODUCTION

Education in our high schools has a two-fold purpose. First, it is the development of the individual into the best person he is capable of becoming. Secondly, it is the development of the individual into a responsible, contributing member of a democratic society. In our everchanging world, educators have been continually seeking methods of making the learning process more vital and effective for every study. In this seeking they have experimented with many different methods, some of which have proved more effective than the established or traditional methods.

Nearly all phases of the educational program have been affected in the search for more efficient methods. Administrators have sought new avenues to update their schools and keep them moving with the times and looking into what the future may hold and have to offer. Teachers have experimented with posing questions and presenting ideas and knowledge more vital and relevant for the students and have tried to help them become more involved with their work and studies.

Statement of the problem. In searching for improvements to make education more relevant, the Waconda Unified School District 272, located in the north-central counties of Mitchell and Osborne in Kansas, initiated in September, 1966, a curriculum organization which seemed to be unique. In adopting the reorganization, the district endeavored to implement the ideas of Chauncey when he said:

It will require tremendous inventiveness and a willingness to free ourselves from the preconception that there is some preordained way in which people should be educated. Only by such an approach

can we improve and reorganize education in a manner that will meet the increasing educational demands of our society.¹

The purpose of this report was: (1) to trace the development of the program, and (2) to test the ideas in curriculum organization advanced by the administrator to determine if the program was fulfilling its stated objectives.

Purpose of the Study. The curriculum organization seemed to have great possibilities, especially for small schools, in order to utilize the personnel to a greater extent and to permit more individualized attention and independent study for the students. Since no other literature was found which investigated a program like the one set up at the Waconda Schools, this study was undertaken.

The information gathered through assessment of teacher and student responses would help in determining the program's strengths and weaknesses. Administrators could be made aware of felt and real needs of teachers and students, what they considered advantages and disadvantages of the program, and new problems they encountered in its operation. Such information would aid greatly in planning teacher orientation and in-service training as well as student orientation to this distinct approach in education. Teachers, in addition to administrators, could better modify and give direction to their respective programs.

Hypotheses. The following hypotheses were set up as a basis for testing the objectives of this study:

1. There is no difference in the extent to which the teachers in double periods and those in single periods felt they could develop their

¹Henry Chauncey, "Report of the President, 1965-1966," Educational Testing Services Annual Report, 1965-1966, p. 18, 1967.

classroom teaching.

2. There is no difference in the variety of learning used by teachers in double periods as compared to those in single periods.

3. There is no difference in the amount of independent study and of individual help received by students in the double period systems as compared to those in single period systems.

4. There is no difference in the frequency of grouping in the double period systems as compared with single period systems.

5. There is no difference in the amount of control and student discipline problems between double and single period systems.

6. Student evaluation and teacher judgment were not different concerning the advantages and/or disadvantages of the double period system. The same was assumed to be true for the students and teachers in the single period system.

Definition of Terms. An understanding of the following terms will be necessary for evaluating this report:

Single - Any class period fifty-five minutes in duration in which one-half unit of credit is earned in one semester.

Double Period - Any class period one-hundred and ten minutes in duration in which one unit of credit is earned in one semester.

Modular Schedule - Any method of class scheduling which deviates from the traditional fifty-five minute class period.

Method of Study. The research was limited to personal interviews, library research, and questionnaires utilizing the idea of classroom experimental and control groupings. Personal interviews were for the purpose of gathering information concerning the theory of double periods, and

establishing the items to be used on the questionnaire. Library research was conducted to gather information concerning similar modulated programs.

Data from the questionnaires composed the body of this report. The questionnaires were to be completed by all students and teachers of four high schools. They were divided into two groups, which were utilized as experimental and control groups to compare responses of students and teachers in the double period systems to students and teachers in the single period systems.

The first items on the questionnaire were quantitative in nature to establish basis for comparisons. The following items were qualitative in nature to solicitate feelings with reference to preparation, classroom activities, individual help and study, and student discipline. The responses to these items were received through five-point continuum scales and six-point rating scales. The questionnaire closed with open-ended questions to permit additional opinions the respondents wished to share. Letters of introduction and instruction were read to both students and teachers before they proceeded to complete the items.

Limitations of the Problem. The study was limited to four high schools in north-central Kansas. Two schools using a double period class schedule formed the experimental group. The other two schools, using the single period class schedule formed the control group.

All students and teachers of each school were canvassed by the survey. Those students and teachers who were absent on the day of administering the questionnaires at a given school were not included in the survey. The student and teacher populations between the two groups were nearly equal. At the date of administration of the questionnaire, Cowker City had a student

population of 100 and 11 teachers; Downs had 127 and 14 respectively. These two schools composed the experimental group of 227 students and 25 teachers, whereas the control group had 202 and 19 respectively. The control group was comprised of 97 students and 10 teachers in Lebanon and 105 students and 9 teachers in Glasco. All questionnaires were administered in the first part of the school day, and within one week of each other.

REVIEW OF HISTORY

Review of Literature on Modular Scheduling. In the past decade there has been a great deal of nation-wide interest in modulated and flexible class scheduling for secondary schools. In the new directions our schools were moving, Michael stated, "the design of the curriculum would be the servant, not the master of the teaching and learning process."² Bush and Allen continued this thought by stating that the new goal "refers not to amount and numbers (everyone in school for a given number of years) a quantitative standard of the past, but rather to a quality of excellence to be achieved in the education provided for each and every one in high school."³

Seven assumptions were made by Bush and Allen for achieving this goal.⁴ Briefly paraphrased the assumptions were: (1) high school typically included grades seven through twelve; (2) breadth and depth in all basic subject-matter fields was needed in a continuous program; (3) a discrete program was needed to meet the needs of students at various levels; (4) the instructional methods utilized large groups, small groups, independent and individual instruction, and special laboratory facilities; (5) senior teachers were assisted by less highly trained members of the instructional and supporting staff; (6) class size, length of meeting time, spacing of classes, were varied according to the nature of the subject, the type of instruction,

²L. S. Michael, "New Directions to Quality Education in Secondary Schools," National Association of Secondary School Principals Bulletin, 45:261, January, 1961.

³Robert N. Bush and Dwight W. Allen, "Flexible Schedules for What?" National Association of Secondary School Principals Bulletin, 47:347, October, 1961.

⁴Ibid., pp. 350=1.

and the level of student ability and interest; and (7) data processing equipment was used to implement a large degree of schedule flexibility.

If those assumptions were adopted it meant that some of the present methods would have to be rejected. The rejected methods would be what Trump called "togetherness, terminableness, and tightness."⁵ Togetherness included the lock-step rate of group progression, the self-contained classroom, and rigidity in time segments per class, day, week, and semester. Terminableness referred to the number of courses taken per year, the number required, and the age for graduation. School bells and uniformity meant tightness which kept students from caring very deeply about anything. "The 'modular' schedule concept was born of the frustrations in trying to break the barriers imposed by such comfortable, rigid schedules."⁶

There were usually three concerns which had to be dealt with and resolved before any modification in a given program could be successfully achieved. One concern was the lack of resources for change. Another was the fear that change would lead to less effective use of present resources, resulting in a demand for further resources. And lastly was the great fear of violating law, tradition, or intuition.⁷ Thus, when given certain resources, how could the most effective program be constructed?

The Wayland High School began by grouping English classes and

⁵J. Lloyd Trump, "Development and Evaluation of a Class Schedule to Help Each Pupil Learn Better," Journal of Secondary Education, 36:338, October, 1961.

⁶M. E. Robb, "Flexibility" Try a Module," Clearing House, 36:550, May, 1962.

⁷Robert E. Bush and Dwight W. Allen, "Flexible Scheduling," National Association of Secondary School Principals Bulletin, 47:73, May, 1963.

implementing the instructional methods of team teaching, variable grouping, and variable class schedules.⁸ Students were assigned to a large group of one hundred students which was divided into three medium groups which were in turn subdivided into nine small groups of nine to thirteen students each. In addition each student had his individual work program. Thus, for class meetings one teacher's weekly schedule went like this: Monday - two large groups and one small group; Tuesday - three medium groups; Wednesday - one small group and two medium groups; Thursday - one small group and two medium groups; and Friday - four small groups and one medium group. So, during the week one teacher had two large, eight medium, and ten small classes plus fifteen periods for preparation of materials, team meetings, and planning with students, for a total of forty periods.

Another approach was used in the Catskill Area Project.⁹ Flexible scheduling was utilized to capitalize upon the inherent strengths of small high schools. They endeavored to increase the variety of learning opportunities and to develop classes which featured teacher-student planning and group work. Emerging from the Catskill Area Project were longer periods scheduled four times a week instead of five, rotating periods that gave each class more opportunity to meet at optimum learning times of the school day, morning and afternoon schedules that interchanged every two weeks, and two or more master schedules that could be exchanged almost at will. Study halls were dropped, which allowed teachers to supervise the study of their

⁸Edward J. Anderson, "Wayland High School's Flexible Scheduling," National Association of Secondary School Principals Bulletin, 36:354, October, 1961.

⁹The Catskill Area Project in Small School Design, Oneonta, New York: State University Teachers College, 1959, p. 10.

own students, helping them individually and collectively when necessary.

One high school principal summarized the scheduling problems by stating:

It is true that all our efforts to develop new schedules will fail if we are unable to obtain staff endorsement of purposes related to any new time patterns. That does not mean, however, that we should not go on studying and dreaming about new possibilities for the organization of learning activities. It is important that we see the implications for adapting elementary school scheduling on the one hand and college type scheduling on the other.¹⁰

At the Renwick Unified School District 267 at Andale, Kansas, administrators challenged the principals to do something about their out-moded lock-step educational procedures.¹¹ The chief problem was identified as "time" - time for students to talk to teachers, to know each other, for individual problems, for science experiments, for shop students to work instead of getting ready to work and putting the tools away, to do research, for discussion with other students, and to do leisure reading.

Principals visited innovative schools in this and neighboring states. In-service sessions were held for teachers. The resultant changes included elimination of class bells which, incidentally, eliminated the "tardies", grouping of junior English and American history on the basis of ability and achievement, more independent study and research in creative writing, government, and advanced biology, using the contract method of assignments in American history, grouping more or less by ability in freshman and sophomore English with the establishment of a voluntary book club, and using a lab type approach in typing.

¹⁰Ibid., p. 11.

¹¹"What's New in Renwick: A Survey of Curriculum Modification" (Andale, Kansas: Renwick Unified School District 367, n. d.), p. 1. (Mimeographed.)

The key to their modified flexible scheduling was the use of double hour periods with a sixty minute instruction period and a fifty minute "flex" period where students could check out to other teachers, resource labs or centers, or the library. The week's schedule was: Monday - all classes on the traditional fifty-five minute period; Tuesday - first, second, and third hour classes in double periods; Wednesday - fourth, fifth, and sixth hour classes in double periods; Thursday classes corresponded with those of Tuesday, and Friday's with Wednesday's. A seventh period of thirty-five minutes every day was utilized for chorus, study halls and other activities.

What the three examples of modified schedules cited had in common was the domineering concern for the individual student. All provisions made in the schedules were for the development of motivation in the student. According to Trump, motivation was achieved when a given study or project seemed important to the student personally.¹² To facilitate the development of motivation, time was to be structured by the teacher to meet that need, discussions groups were to be composed of no more than fifteen members of like interest and talents. Reinforcements were to be used through programmed studies to allow the student to learn at his own pace and know immediately whether or not he had learned, then continue without instruction from the teacher.

A study was conducted by Speckhard, who desired to evaluate the modular schedule.¹³ He concluded that some of the practices advocated by proponents

¹²Trump, p. 340.

¹³G. P. Speckhard, "Evaluating the Modular Schedule," North Central Association Quarterly, 41:308, Spring, 1967.

of modular schedules were being carried out while others were not. Problems reported most frequently dealt with uses of small groups and unsupervised study time. Low achievers had more problems using the new systems. Sophomores reported problems more often than did juniors or seniors. Students were learning as well, or better than under traditional schedules. Specific tests proved that under the modular schedule students developed a significantly higher ability in critical thinking and had greater growth in the ability to interpret reading materials in social studies. There were no differences in study habits or in attitudes. Data supported the idea that modular scheduling would work well with students in a high school at all achievement levels. No group was disadvantaged.

Development of the Program at Unified School District 272. For the school year 1966-1967, Glen Elder High School, the smallest of the three high schools in the Waconda district, was selected for the pilot project. The project was to test the feasibility of double periods in place of single periods in class scheduling. If the project proved successful in the estimation of the superintendent, principal, teachers, and the Board of Education, the program was to be expanded. The project proved successful and was extended to include the other two schools of the district the following school year.

Events that led to the formation of double periods for these small schools dated back five years. At that time the superintendent, then a principal in another school district, attended summer classes dealing with flexible scheduling. This inspired him to challenge the traditional "lock-step" approach to education at his high school. He considered the traditional approach rigid and inadequate in meeting present educational goals.

Part of the first semester back at his school was spent in a seminar course at a nearby college to grapple with possible scheduling systems that would prove appropriate and effective for the small school. Out of this process evolved the idea of a double period to better meet the needs of that particular school. In the second semester, with the school board's approval, many sessions were held with the teachers to explore the possibilities of double periods and advance various ideas of teaching method innovations.

In the second year the double period class scheduling system was put into effect and was continued for another two years before the school was closed by unification. It was found that those teachers most radically opposed to the idea at first were the most enthusiastic and innovative once the double periods were put into effect. But they had to be enthusiastic to the point of wanting to change.

The double periods, it was assumed, permitted a greater degree of freedom for experimentations with teaching methods. In English the ungraded approach was tried with those students who were unable to succeed in school. This approach proved successful according to the English teacher and the principal. Other methods that proved better than the former ones were programmed math for independent study and an ungraded shop in which students were working on projects of different areas of interest and at various levels of sophistication.

When the principal came to U. S. D. 272 as the administrator for the district, these administrative and educational ideas were brought along.

Objectives of the Program. Some of the objectives of a double class period scheduling system were realized by merely putting the system into operation. Other objectives were variables whose accomplishment was

dependent to a large extent on the cooperation of teachers and their willingness to innovate in meeting the challenges of new demands of the scheduling system. The purpose of the questionnaire utilized in this study was to assess these variables.

The objectives that were fait accompli by the implementation of the program were: (1) to broaden curriculum offerings of smaller schools thereby making available a wider number of courses; (2) to get more mileage out of teachers in that each teacher may teach six units instead of the usual five per school year; (3) to ensure that teachers never had more than three preparations per semester; (4) and likewise, that students had no more than three preparations per semester; (5) to allow students to complete one-sixth more subjects in high school; (6) to eliminate wasted time in study halls where students were not under a teacher qualified in a specific area; and (7) to provide students with supervised study under their course instructor.

The objectives that were variables were: (1) to utilize the positive effect of change on the teachers in having to reorganize, assuming that the change would eliminate "rust" and lead to better and more up-to-date preparations; (2) to allow students and teachers time to delve into the lessons more thoroughly; (3) to give more time for intensified personal help; (4) to help accustom students to college routine, that is, semester scheduling; (5) to allow a wider range of classroom activities to facilitate the processes of learning; and (6) to permit a greater degree of independent study by the students.

Several changes were effected immediately at the Glen Elder High School. Before the double periods went into effect, 30 units of credit were offered.

New courses added were sociology and psychology. Courses such as chemistry and physics that previously were alternated every other year were then offered each year. Study halls were eliminated, thus freeing the library to be utilized by various classes throughout the school day.

During the second year of the project Cawker City and Downs were included. At the Cawker City High School the new scheduling allowed the inclusion of three new courses: international relations, programmed mathematics with students at various levels, and a reading program for students with reading difficulties and for other interested students who wished to improve their reading abilities. Sociology and psychology were extended from one-half unit to one unit each. Study hall classes were discontinued.

The Downs High School added only one new course, agricultural mechanics. Sociology and psychology were extended from one-half unit to one unit of credit each. A number of courses were offered twice per year as compared to only once per year before the project started. These were physical science, chemistry, algebra I, home economics II, driver's education, American government, American history, and English I, II, and III. Four classes of biology were offered as compared to two under the previous scheduling.

ANALYSIS OF DATA

The hypotheses were tested by student opinion and teacher opinion. The data from the questionnaires were subjected to the t-test for significance. The degree of confidence used was at the .05 level.

Comparison of Students of Cawker City and Downs with Glasco and Lebanon. The students who completed questionnaires for this study were from four rural high schools located in north-central Kansas. All of the communities were based upon an agricultural economy. No one school was located more than thirty-five miles from one of the others. Similar regional habitat of the students was considered important for a means of socio-economic control for valid comparisons.

The student population distribution illustrated by Table I showed the breakdown of the number of students involved, by class and by school. The group totals were proximate and great enough to be of use for constructing valid comparisons of the two class schedule systems. The 227 students under the double period schedule systems formed the experimental group. The control group was composed of 202 students under the single period schedule systems.

Another factor used for control was the level of aspiration of the students. A question was asked to determine what the students' immediate plans were following high school graduation. The items were listed in Table II, p. 16, in ascending order according to the amount of further formal schooling necessary for the completion of that item. The last two items were for those who were undecided or had a choice that fit a category other than those listed. The data revealed that there was no statistically significant difference in their immediate plans following high school

TABLE I

Student Population Distribution by Class and by School
for those who completed the questionnaire, April, 1968

Class	Double period classes of Cawker City - Downs ¹		Single period classes of Glasco - Lebanon	
Freshmen	25	42	28	20
Sophomores	26	38	30	24
Juniors	26	28	36	21
Seniors	23	19	11	32
School totals	100	127	105	97
Group totals	227		202	

¹Hereafter "Double period classes of Cawker City and Downs" will be cited as "Double period" and likewise, "Single period classes of Glasco and Lebanon" will be cited as "Single period."

TABLE II

Student plans immediately following
High School graduation

Weight Value	Item	Double period	Single period
1	Get married	2	6
2	Get a job	19	12
3	Join the armed services	17	10
4	Go to business or vocational technical school	24	38
5	Go to junior college, college or university	109	90
6	Undecided or not sure	47	31
7	Other	9	15

graduation. The least selected item was to get married and the most frequently selected item was to go on to college. Almost half of all students indicated that they planned to go to college.

Student satisfaction with school was considered an important element, since it was reasoned that if through the double period system individual needs were being met in a better way students would be more satisfied with their schooling. No statistically significant difference was obtained, indicating that both groups were about equally satisfied or dissatisfied with school. The arithmetic mean for both groups was in the category "no better could be expected under present conditions." However, the category, "reasonably well-satisfied" received the greatest number of responses for both groups. The distribution pattern was similar for both groups. The data, found in Table III, did not demonstrate that one scheduling system yielded an advantage over the other in satisfying the students.

Students in the double periods had only three classes per school day, plus an hour for music. Those students who did not participate in that activity were assigned to a study hall. Students of the single period classes had five or six classes per school day plus a study hall and a shortened activity period or homeroom. It seemed appropriate to ask for their opinions as to how many class lessons each student should be reasonably expected to prepare for each school day.

The results, shown in Table IV, were interesting in that those of the double period group overwhelmingly chose three lessons per school day - in line with the actual number; whereas students in single period classes favored, on the average, four lessons per school day - at least one or two fewer than the actual number per school day. Three and five lessons for a school day were also chosen frequently by the single period group.

TABLE III

Comparison of satisfaction with school between
students of double period and single period classes

Weight Value	Elements	Double Period	Single Period
1	Greatly dissatisfied	11	13
2	Mildly dissatisfied	38	26
3	No better could be expected under present conditions	77	68
4	Reasonably well-satisfied	96	86
5	Highly satisfied	5	9
Mean		3.2026	3.2574

TABLE IV

Responses of students on number of class lessons
that a student should be reasonably expected
to prepare for each school day

Number of class preparations:	One	Two	Three	Four	Five	Six	More than	
							six	Mean
Double period*	3	25	141	30	25	3	0	3.2555
Single period	7	12	46	71	12	8	2	3.9356

* Significant at .05 level.

Following up on the idea of how many class lessons should be expected of a student per school day, the next point of concern was the time length of the classes. The data, shown in Table V, yielded a significant difference in the responses of the two groups concerning the quantity of time spent in class.

Although the double period groups preferred three class lessons per school day, practically a single majority reported that about the right amount of time was spent in class. The next largest group of responses was in the area of "too much time spent in class." Two-thirds of the single period groups responded that the right amount of time was spent in class. But contrasting with the double period groups, the single period groups' next most frequently marked choice was that a little more time should have been spent in class to handle the subject.

Instead of having students qualify their responses on things they would have liked to have done more frequently in class, in conjunction with the hypothesis on various learning activities utilized by teachers in class, students were to simply list learning activities which they preferred to have happen more frequently in class. This open-ended approach brought in an avalanche of suggested learning activities to make class more exciting. Many of the items frequently suggested were similar to those placed on the teacher questionnaire. These included, listed in descending order, more discussions on really important issues and personal problems, films, laboratory work, group and individual projects, oral reports, field trips, and reading time.

Tables VI and VII dealt with the hypothesis concerning students' receiving individual help and independent study; there was a significant difference

TABLE V
Responses of students on time length spent in class

Weight Value	Choices	Double Period [*]	Single Period
1	Too much time spent in class	55	10
2	More time than I need is spent in class	38	19
3	About right amount of time is spent in class	107	137
4	A little more time is needed to handle the subject	23	33
5	Much more time is needed for thorough handling of the subject	4	3
Mean		2.4846	3.0000

^{*}Significant at .05 level.

concerning both activities. The double period groups reported that their teachers gave them more individual help (Table VI). The greatest number of responses were in the "some help" category and the next highest choice was "considerable help." The number of cases in these two categories was distinctly greater than that of the three remaining categories. Responses of the single period groups were more equally distributed on either side of the "some help" category. The "no help" category had the greatest ratio of difference between the two groups, working in favor of the double period groups. This data was recorded in Table VI.

Table VII dealt with the other half of the same hypothesis - independent study - from the student's perspective. This part also yielded a significant difference; the double period groups responded higher. Upon close examination, however, the results were found to be disturbingly low, since one of the goals of the double period was to break from the traditional "lock-step" approach to education, in which, theoretically, all students learned and advanced at the same rate. An overwhelming majority of students in both groups indicated that independent study was happening rarely. About twice as many students in the double period groups indicated this was happening frequently or very often as compared to the single period groups, but these cases were few.

The fourth hypothesis of this study concerned teachers' practice of dividing their classes into various groups and giving them differentiated assignments according to the students' abilities and interests. From the data presented in Table VIII it was found that the students supported the hypothesis that grouping was not more commonly practiced in schools with double periods. The results decidedly indicated that grouping rarely

TABLE VI

The extent of teachers giving individual help
as seen from the students' point of view

Weight Value	Choices	Double Period*	Single Period
1	No help	2	9
2	Little help	21	38
3	Some help	112	101
4	Considerable help	60	46
5	A great deal of help	12	8
Mean		3.3480	3.0297

*Significant at .05 level.

TABLE VII

Students' perception of the extent to which
teachers let students take on independent assignments

Weight Value	Choices	Double Period*	Single Period
1	Rarely	114	119
2	Occasionally	52	49
3	Sometimes	46	27
4	Frequently	10	4
5	Very often	5	3
Mean		1.8546	1.6287

*Significant at .05 level.

TABLE VIII

Students' perception of grouping of students
by teachers within a class

Weight Value	Choices	Double Period	Single Period
1	Rarely	138	134
2	Occasionally	29	39
3	Sometimes	35	22
4	Frequently	17	4
5	Very often	8	3
Mean		1.8018	1.5297

occurred. The double period groups tended to have more incidences in the upper three categories than did the single period group. This tendency was significant at the .10 level, with the double period groups reporting the occurrence of grouping more frequently.

Tables IX and X centered around the fifth hypothesis - student discipline. One of the major factors concerning student discipline was the students' abilities to adjust or adapt to the class routine. Stated existentially, did the class routine help them to apply themselves and to make good use of their school time? No significant difference was determined between the two groups on this part. Both group means were in the "helps some" category. The distribution on both sides of this middle point was more or less balanced, as illustrated in Table IX.

The fifth hypothesis was stated in terms of teacher control of student discipline, but it was felt that the students' views of their own discipline were important. Although the teachers in the double period systems at first had fears that the students would be more difficult to control, it was found in the data presented in Table X, p. 26, that there were few items of significant difference. Thus, from the students' point of view, the fifth hypothesis was supported. Those items which had no significant difference, listed in descending order of occurrence, were participation in discussions, taking class notes, use of study time, becoming bored in class, and cheating.

One item that was in favor of the single period groups was listening to lectures. Conversely, listening to student reports was in favor of the double period groups. Other items of significant differences were movement about the classroom, talking to neighbors, and passing personal notes. The

TABLE IX

Student views on class routine in helping them to apply themselves and make good use of school time

Weight Value	Choice	Double Period	Single Period
1	Not at all	16	16
2	Tends to distract more than it helps	35	25
3	Helps some	121	111
4	Helps considerably	38	42
5	Helps a great deal	17	8
Mean		3.0220	3.0050

TABLE I

Student ratings on various items
related to classroom discipline

Items	0 undecided or not sure	1 never do it	2 seldom do it	3 sometimes do it	4 often do it	5 always do it	Mean
Talk to neighbors							
double periods*: 1	1	8	30	91	46	3.7655	
single periods: 3	-	24	69	80	26	3.5427	
Participate in discussions							
double periods: 4	6	27	66	87	37	3.5471	
single periods: 5	4	23	75	65	30	3.4772	
Listen to lectures							
double period*: 7	6	24	55	93	42	3.6409	
single periods: 5	1	19	42	79	56	3.8629	
Listen to student reports							
double periods*: 3	2	25	55	81	61	3.8571	
single periods: 2	7	33	52	65	43	3.5200	
Use study time in class							
double periods: 3	7	34	68	95	20	3.3884	
single periods: 3	10	22	62	76	29	3.4623	
Move about the classroom							
double periods*† 4	29	92	70	17	15	2.5829	
single periods: 2	36	102	41	13	8	2.2750	
Become bored in class							
double periods: 3	8	22	78	63	53	3.5848	
single periods: 6	3	19	100	43	31	3.4082	
Take class notes							
double periods: 7	47	66	73	25	9	2.7150	
single periods: 5	29	40	68	44	16	2.8883	
Cheat							
double periods: 9	116	67	23	5	7	1.7156	
single periods: 10	99	61	24	5	3	1.7083	
Pass personal notes							
double periods*: 28	82	58	32	17	10	2.58296	
single periods: 7	116	42	19	10	6	2.2750	

* Significant at .05 level.

three items indicated that a greater degree of freedom was allowed or tolerated in the double period groups. It was not argued that the degree of freedom was good or bad, but it did suggest that those classes were less rigidly controlled.

Comparison of Teachers of Cawker City and Downs with Glasco and Lebanon.

The double period groups (Cawker City and Downs) included twenty-five teachers with a resultant teacher to student ratio of approximately 1:9. The single period groups (Glasco and Lebanon) included nineteen teachers with a teacher to student ratio of approximately 1:10.6. Thus both groups were considered numerically similar enough to declare them equivalent for a basis of comparison. Responses of teachers were influenced by factors similar to those affecting the students, proximate locality and socio-economic similarities. The number of teaching years at the same school and the level of academic accomplishment were also found to be comparable.

A comparison of personal levels of educational achievement was illustrated in Table XI. No statistically significant difference was found between the two groups of teachers. The most frequent level of education reported was at the B. A. or B. S. level. Teachers with fifteen college hours beyond the B. A. or B. S. numbered about half as many. Half that number had their Master's degree. It must be remembered that administrators and other specialized personnel were not included on the questionnaire survey.

It was assumed that whenever changes were made in a class scheduling system, in order to facilitate the changeover and insure its success a close working relationship was needed between administrators and teachers. The question was posed as to what extent the teachers felt the administrators

TABLE XI

Teacher population by level of preparation and by school
for those who completed the questionnaire, April, 1968

Level of preparation	Double periods of Cawker City - Downs		Single periods of Glasco - Lebanon	
B. A. or B. S.	5	5	5	3
B. A. or B. S. plus 15 hours	3	2	1	4
B. A. or B. S. plus 30 hours	0	4	1	2
M. A. or M. S.	3	2	0	0
M. A. or M. S. plus 15 hours	0	1	2	0
M. A. or M. S. plus 30 hours	0	0	0	1
School total	<u>11</u>	<u>14</u>	<u>9</u>	<u>10</u>
Group total	25		19	

should be involved in determining the structure of the class period. Results of the two groups of teachers were not significantly different, as was shown in Table XII, p. 32. But the overall indication was that they wanted little involvement by the administrators. The double period groups did tend to respond a little higher in favoring administrative involvement, but still preferred not too much involvement.

Because of the change to double periods, many teachers affected by that change had to redesign their class operations. They could no longer handle the same things in the same way as before. Many teachers had to virtually start all over in class organization. Thus, one of the objectives, ejecting teachers from their teaching ruts, was achieved. Having disturbed the teachers and their old habits, it seemed proper to determine their present satisfaction with teaching.

The data from Table XIII supported the hypothesis that there was no difference in teaching satisfaction among teachers in double periods as compared to teachers in single periods. There was no significant difference between the two groups. The responses centered about the position of being reasonably well-satisfied with their teaching. The double period groups reported distinctly more cases of being mildly dissatisfied.

Table XIV was based upon responses regarding the number of class preparations that should be reasonably expected of teachers per school day. There was a significant difference between the two groups. The double period teachers favored predominately three preparations per day, which was in line with actual practice. The single period groups predominately preferred four per day which was one or two less per day than was the actual practice. All responses fell within the range of three to six class preparations per school day.

TABLE XII

Amount of administrative involvement desired by
teachers in determining structure of class periods

Weight value	Elements	Double period	Single period
1	Not at all	2	5
2	Little involvement	9	6
3	Some involvement	11	6
4	Considerable involvement	2	2
5	Let them set all the limits	1	-
Mean		2.640	2.263

TABLE XIII

Comparison of satisfaction with school between teachers of double period and single period classes

Weight value	Elements	Double period	Single period
1	Greatly dissatisfied	-	-
2	Mildly dissatisfied	7	1
3	No better could be expected under present conditions	5	7
4	Reasonably well-satisfied	13	10
5	Highly satisfied	-	1
Means		3.240	3.579

TABLE XIV

Responses of teachers on number of class preparations that a teacher should be reasonably expected to make for each school day

Number of class preparations:	More than							Mean
	One	Two	Three	Four	Five	Six	six	
Double period*	-	-	18	6	1	-	-	3.320
Single period	-	-	4	12	2	1	-	4.000

* Significant at .05 level

Some interesting facts were illustrated by the data found in Table XV, p. 35. First, there was no significant difference between the two groups in the responses about being able to develop their lessons to the degree desired. Yet one group had twice the time and half the subjects per school day than the other group had. Second, the distribution of the double period groups was more widely spread than that of the single period groups. Both groups centered notably on the category which stated that considerable development of lessons was achieved.

By having a longer class period, it was assumed that those teachers so affected would be innovative in their teaching, doing more and different things to facilitate the learning of the students. They were supposed to have enough time to do those things which they previously said they could not do for lack of time. But the data from Table XVI demonstrated that they failed to meet that challenge. Only two items of fifteen had responses which were significantly different. One was in having debates, which the single period group reported more frequently, although their mean was in the "occasionally" category. The other item of significance was in giving lectures, which again the single period groups reported as doing more often. The double period groups obviously were using lecturing less as a teaching tool, which was encouraging since it was considered one of the less effective teaching methods. Methods which were commonly being used by both groups were discussions and study time. Methods less frequently reported were student reports and playing records or tapes. Occasionally group projects, the overhead projectors, and experiments were utilized. More rarely used methods were student-led classes, field trips, model building, poster making, and guest speakers. Of the methods listed, the one most infrequently used was the enactment of plays.

TABLE XV

Responses of teachers on the development of lessons
to the degree preferred within the class time permitted

Weight value	Elements	Double period	Single period
1	No development	1	-
2	Little development	1	1
3	Some development	4	5
4	Considerable development	15	11
5	A great deal of development	4	2
Means		3.8000	3.7374

TABLE XVI

Teacher ratings on learning activities
carried out within their classes

Items	0 undecided	1 never	2 seldom	3 sometimes	4 often	5 always	Mean
Give lectures							
double periods*:	-	2	5	10	8	-	2.960
single periods:	-	-	2	7	6	4	3.632
Have discussions							
double periods:	-	1	1	5	14	4	4.105
single periods:	-	-	-	4	9	6	3.760
Have debates							
double periods*:	6	8	11	-	-	-	1.579
single periods:	1	2	7	9	-	-	2.389
Enact plays							
double periods:	5	15	5	-	-	-	1.250
single periods:	3	8	8	-	-	-	1.500
Have guest speakers							
double periods:	7	8	9	1	-	-	1.611
single periods:	3	7	6	2	1	6	1.812
Play records or tapes							
double periods:	2	4	7	3	7	2	2.826
single periods:	3	5	2	7	2	-	2.688
Use overhead projector							
double periods:	4	12	3	3	2	1	1.905
single periods:	3	4	4	4	4	-	2.500
Have study time							
double periods:	2	3	1	-	8	11	4.086
single periods:	1	-	1	8	7	3	3.632
Have student reports							
double periods:	1	4	5	6	9	-	2.833
single periods:	2	1	2	10	4	-	3.000
Have student lead classes							
double periods:	2	5	14	4	-	-	1.756
single periods:	2	5	8	4	-	-	1.941
Group projects							
double periods:	2	4	8	8	3	-	2.435
single periods:	2	4	7	4	1	1	2.294
Conduct experiments							
double periods:	5	9	8	2	1	-	1.750
single periods:	4	7	2	3	2	1	2.200
Make posters							
double periods:	3	12	7	3	-	-	1.591
single periods:	3	9	3	2	2	-	1.812

* Significant at .05 level

TABLE XVI (Continued)

Teacher ratings on learning activities
carried out within their classes

Items	0 undecided	1 never	2 seldom	3 sometimes	4 often	5 always	Mean
Build models							
double periods:	3	11	11	-	-	-	1.500
single periods:	5	8	2	2	1	1	1.928
Field trips							
double periods:	2	7	13	3	-	-	1.826
single periods:	2	9	4	2	1	1	1.882

One of the specific aims of the administration in establishing the double period schedule was to permit time for teachers to give more individualized help and allow students to study more at their individual rates and ability levels. Data, shown in Table XVII, supported the null hypothesis that the teachers in double periods were giving no more individualized help than did teachers in single period classes. But, both groups rated themselves quite favorably.

There was also no significant difference between the groups of teachers in having students studying at independent levels within the same classes. The data from Table XVIII showed that teachers tended to rate themselves favorably. The means for both groups were in the "sometimes" category. Both parts of the hypothesis on individual help and independent study were supported by the teachers. The indication was that this goal was not being better achieved by the change to a double period system.

The administration thought that because of the greater amount of time within the class period more grouping could be done in the double period systems. It would be easier to group because there were less restrictive time limits and the teacher could have various groups working on different projects. The data of Table XIX, p. 40, did not support the hypothesis that teachers in the double period system group as frequently as do teachers of single period classes. Grouping was occurring more frequently with the teachers under the double period. Upon close examination of Table XIX it was interesting to note the bimodal distribution of responses. Evidently there were some teachers of both groups opposed to grouping or who thought the facilities did not lend themselves to grouping of students. Grouping must not have been considered a panacea, for no one responded as utilizing grouping very often.

TABLE XVII

The extent of teachers giving individual help
from the teacher's point of view

Weight value	Choices	Double period	Single period
1	Not at all	-	-
2	Very little	3	-
3	Some	4	7
4	Considerable	11	9
5	A great deal	7	3
+			
Mean		3.920	3.789

TABLE XVIII

Teachers' perception of the extent to which they
let students take on independent assignments

Weight value	Elements	Double periods	Single periods
1	Rarely	1	1
2	Occasionally	6	4
3	Sometimes	8	8
4	Frequently	8	6
5	Very often	2	-
Mean		3.160	3.000

TABLE XIX
 Teachers' perceptions of grouping of
 students within their classes

Weight value	Elements	Double periods*	Single periods*
1	Rarely	6	5
2	Occasionally	2	3
3	Sometimes	11	8
4	Frequently	6	3
5	Very often	-	-
Means		2.680	2.474

* Significant at .05 level

Data found in Tables XX and XXI were used in reference to teacher problems of control and of student discipline in the classroom. Table XX supplied data for student adjustment to the class routine in general, while items of Table XXI, p. 43, were of specific acts related to student behavior. The hypothesis was not supported on student adjustment to class routine. Teachers of double periods were of the opinion that the students were having a more difficult time adjusting than did teachers of their students in single periods. But most teachers of both groups responded that student adjustment was good, with nearly all teachers rating their students' adjustment from good to excellent.

The second question, concerning specific acts related to student discipline, supported the fifth hypothesis. Of the ten items, only two were answered with a significant difference. Those were in talking to neighbors and moving about the classroom by students. It was the teachers of double periods who reported these things happening more frequently. Whether good or bad, it did suggest that because students were in the same classroom for a greater period of time, the controls were more relaxed and the students were evidently permitted a greater degree of freedom. Items that both groups rated affirmatively were, in descending order of frequency, student participation in discussions, listening to lectures, listening to student reports, and using study time. Taking class notes and becoming bored in class were rated somewhat lower. The lowest rated item was cheating. Although only two specific items were rated significantly different between the two groups of teachers, the teachers of double periods responded that their students had a more difficult time adjusting to the class routine.

TABLE XX
 Teacher ratings of student adjustment
 to class routine

Weight value	Elements	Double periods*	Single periods
1	Indifferent	-	-
2	Poor	2	-
3	Fair	5	4
4	Good	15	11
5	Excellent	3	4
Means		3.760	4.000

* Significant at .05 level

TABLE XXI

Teacher ratings on student behavior in class

Items	0 undecided	1 never	2 occasionally	3 some	4 often	5 always	Mean
Talk to neighbors							
double periods*:	-	-	7	11	6	1	3.0400
single periods:	1	3	9	5	1	-	2.2222
Participate in discussions							
double periods:	1	1	1	4	14	4	3.7917
single periods:	1	-	1	4	11	2	3.7778
Listen to lectures							
double periods:	1	-	4	7	8	5	3.5833
single periods:	1	-	4	1	9	4	3.7222
Listen to student reports							
double periods:	-	2	3	4	9	7	3.6400
single periods:	3	-	3	4	7	2	3.5000
Use study time in class							
double periods:	1	2	2	5	11	4	3.5417
single periods:	2	1	3	4	9	-	3.2352
Move about the classroom							
double periods*:	2	5	7	8	2	1	2.8696
single periods:	3	6	6	4	-	-	1.8750
Become bored in class							
double period:	3	-	11	10	1	-	2.5454
single period:	2	-	9	8	-	-	2.4706
Take class notes							
double periods:	3	4	8	3	6	1	2.6364
single periods:	2	1	2	6	6	2	3.3529
Cheat							
double periods:	4	7	12	2	-	-	1.7619
single periods:	9	3	7	-	-	-	1.7000
Pass personal notes							
double periods:	3	8	11	3	-	-	1.7727
single periods:	7	7	4	1	-	-	1.5000

* Significant at .05 level

Comparison of Students to Teachers. Considered of great importance was the similarity or lack of similarity between student and teacher perceptions of the same situations. This section was constructed for the purpose of comparing the means of responses between students and teachers of the experimental group and students and teachers of the control group.

Because of the great numerical disparity of students to teachers, an approximate ratio of 10:1, no attempt was made to test for significant differences of their means. Thus, an arbitrary minimum limit of five-tenths in mean difference was set for taking notice of the disparities, though by this method nothing could be proved conclusively. Of some value was the fact that in comparing the teacher groups, all paired items of more than .75 difference in means proved significant. This point was considered to bear some weight for the sizes of the teacher groups were small. Thus, a greater degree of tolerance between the mean differences for the teachers' groups than for the students' groups had to be taken into consideration before it could be stated with a given degree of certainty that a significant difference was proven.

Upon examination of the data, found in Table XXII, pp. 46-47, it was established that many differences between students and teachers in double periods were nearly the same as mean differences between students and teachers of single periods. Evidently teachers of both groups were about equally sensitive or insensitive to students and their needs. One system evidenced no advantage over the other in helping teachers to be more sensitive to student needs.

In all cases where differences of means existed between students and teachers of both groups it was found that teachers had rated the items at

a higher level of occurrence and/or positive value than did the students. The items in which discrepancies were found were discussed in descending order.

The item with the greatest difference between student and teacher means was in independent study. Teachers had credited themselves with giving students more opportunity to study independently from the rest of the class than students thought they were receiving. Students in the double period had indicated they did more independent study than their counterparts, but they were at odds with their teachers, too, on the degree of independent studying they were encouraged to carry on.

Another item, students talking to neighbors, bore out discrepancies of viewpoint between students and teachers. Teachers claimed that talking was going on much more frequently than the students thought they were doing. As was noted, both students and teachers of double periods rated this item significantly different than their respective counterparts. But on close examination of the data, students and teachers in single periods had nearly twice the difference in means than students and teachers in double periods did. This difference suggested again the idea that the teachers in double periods allowed or tolerated a greater degree of freedom in their longer class periods.

Student boredom in class was another item on which student and teacher means were in disagreement. Students claimed they were bored some of the time in class, whereas teachers thought the students were bored only occasionally. One system had not proved itself advantageous over the other in helping to prevent student boredom.

Although teachers in single periods rated their students better in

TABLE XIII

Comparison of student to teacher responses by arithmetic means to nearest one-tenth

Items	Double Period Means students--teachers difference	Single Period Means students--teachers difference			
Satisfaction with school or teaching, Tables III and XIII	3.2026	3.2574	3.579	0.3	
Number of class lessons, Tables IV and XIV	3.2555 ^a	3.3200 ^b	3.9356 ^a	4.0000 ^b	0.1
Length of time in class, Tables V and XV	3.5154 ^{az}	3.8000	3.0000 ^a	3.7374	0.7
Individual help, Tables VI and XVII	3.3480 ^a	3.920	3.0297 ^a	3.789	0.8
Independent study, Tables VII and XVIII	1.8546 ^a	3.160	1.6287 ^a	3.0000	1.4
Grouping within a class, Tables VIII and XIX	1.8018	2.680 ^b	1.5297	2.474 ^b	0.9
Student adjustment to class routine, Tables IX and XX	3.2200	3.760 ^b	3.0050	4.000 ^b	1.0
Classroom discipline, Tables I and XXI Talk to neighbors	3.7655 ^a	3.0400 ^b	3.5427 ^a	2.2222 ^b	1.3
Participate in discussions	3.5471	3.7917	3.4772	3.7778	0.3
Listen to lectures	3.6409 ^a	3.5833	3.8629 ^a	3.7222	0.2
Listen to student reports	3.8571 ^a	3.6400	3.5200 ^a	3.5000	0.0

TABLE XXII (Continued)

Comparison of student to teacher responses by arithmetic means to nearest one-tenth

Items	Double Period Means		Single Period Means			
	students--teachers difference	students difference	students--teachers difference	students difference		
Use of study time in class	3.3884	3.5417	0.1	3.4623	3.2352	0.2
Move about the classroom	2.5848 ^a	2.8696 ^b	0.3	2.2750 ^a	1.8750 ^b	0.4
Become bored in class	3.5648	2.5454	1.0	3.4082	2.4706	0.9
Take class notes	2.7150	2.6364	0.1	2.8883	3.3529	0.5
Cheat	1.7156	1.7619	0.0	1.7083	1.7000	0.0
Pass personal notes	2.58296 ^a	1.7727	0.8	2.2750 ^a	1.5000	0.8

^aSignificant at .05 level between students in double periods and students in single periods.^bSignificant at .05 level between teachers in double periods and teachers in single periods.^cThe mean of students was adjusted because the direction of the positive to negative in the continuum on the students' questionnaires was in the reverse order of the continuum on the teachers' questionnaires. The students mean in the single period groups was unaffected.

adjustment to class routine than teachers in double periods did, students of both groups disagreed with their teachers about equally. Both groups of teachers credited students with doing a better job of adjusting than the students responded that they had made.

An interesting piece of data evidenced that teachers of both groups indicated that the class routine helped considerably in helping students to apply themselves and make good use of school time. If that were true, the fact that students rated boredom as being more prevalent than satisfactory adjustment to class routine remained unexplained.

Grouping was another item on which students and teachers of both groups disagreed. Teachers claimed they were grouping students more frequently than the students thought it was being done, which was rated at a low level of occurrence.

A lesser degree of difference was found in student and teacher perceptions on individual help students were receiving. But again, teachers rated themselves more favorably in giving individual help than did the students.

Other items listed in Table XXII exhibited little or no difference in student and teacher means.

The hypothesis that students' and teachers' responses were not different was rejected on the basis of the foregoing paragraphs. Some noteworthy exceptions to the hypothesis were found and mentioned. Of the seventeen items listed in Table XXII, two items had at least a mean difference of one on the five point scale. Four other items had at least a .5 mean difference on the five point scale.

Reactions of Principals of Unified School District 272. All three principals stated that they preferred the double period schedule to the one

hour schedule for their small, rural high schools. The following paragraphs summarized the principals' experiences and feelings concerning the new schedule.

The teacher orientation for the double period class scheduling system was minimal. Teachers were informed during the summer that the curriculum organization had changed from the familiar fifty-five minute periods to the one-hundred and ten minute periods. This was because the decision to go ahead was made after the previous school year had terminated. During the first week of the new school year at in-service training, a few words were shared with the Cawker City and Downs teachers concerning the change. In short, the teachers were asked to participate without much advanced preparation. The principals felt handicapped for they, too, were inexperienced in the operation of the new program.

The single greatest factor the principals appreciated was the flexibility in scheduling that was possible. Courses could be offered either semester which presented options as to timing of courses. The last thirty-five minutes for all classes were designated as study time thus allowing a common block of time usable for various kinds of meetings and activities. Otherwise teachers could organize their classroom routines as they saw fit to do. This was particularly advantageous for the classes such as laboratory courses, shop, physical education, home economics, and driver's education. With more time for study under a given teacher there was the feeling that students were under less pressure because of the greater amount of controlled study time and no more than three classes per day. They felt teachers were also under less pressure in the sense that they had no more than three preparations per day. Yet, students would have the opportunity

to take approximately twenty per cent more subjects during their high school years.

There were some disadvantages. No adequate time sequence was realized for the music department--band, chorus, group, and individual lessons. Another was that no break was provided during the one-hundred and ten minutes which seemed to make the classes unbearably long for some of the teachers and students. The teachers had no real break throughout the day since noon hours were semi-closed and they had to supervise their own groups at lunch. Balancing of semesters for each teacher in regards to course work and paper work necessitated by certain classes was not anticipated. Thus, some teachers were overloaded one semester while the other semester was light in load demands. Another problem concerned the transfer of students in or out of the system. Where would they be placed since they would either be behind or in advance of their new classes?

The principals felt that many of the problems given above could be resolved by better organization of schedules. In planning for improvements they would include consultation with teachers in the formulation of their class schedules. Also orientation with new teachers would be included during the summer and first week of school to help them better adjust to the program.

SUMMARY

The past decade has witnessed a prodigious amount of activity in flexible class scheduling to better achieve the educational goals of optimum individual development and maximum development for responsibility in a democratic society. Educators sought better methods than the traditional "lock-step" approach to education. The traditional method was considered too rigid and inadequate to meet present educational demands.

Among the modifications was experimentation with flexible scheduling. Some of the new forms of class scheduling resulted in lengthened classes, shortened classes, or rotating classes every other day with various methods of assigning study and research time.

Potential stumbling blocks that had to be overcome were limits of present resources, further resources, and fear of violating law, tradition, or intuition.

Schools that effected flexible scheduling realized innovations in teaching methods to better meet educational demands. Some teachers utilized team teaching, variable grouping, and variable class schedules. Other teachers increased the variety of learning opportunities and featured teacher-student planning and work groups and individual projects.

One study found that problems not frequently mentioned by teachers under schools with flexible class scheduling dealt with use of small groups and unsupervised study time. It found that students under flexible scheduling proved better at critical thinking and ability to interpret materials, yet no student group was disadvantaged.

The idea of utilizing double periods at the Waconda Unified School District 272, Cawker City, Kansas, came with the present superintendent.

In 1966, the Glen Elder High School was selected for testing the feasibility of double periods for the Waconda district, since it was the smallest of the three schools in the district. The year's trial proved successful according to the superintendent, principal, Board of Education, and some of the teachers. Therefore the program was expanded to include the other two schools of the district the following school year.

Some of the objectives of the double class period scheduling system were realized by merely putting the system into operation. Other objectives were variables whose accomplishment was dependent to a large extent upon the cooperation of teachers and their willingness to innovate in meeting the challenges of new demands of the system.

Objectives accomplished by merely putting the program into operation were to broaden curriculum offerings, to enable each teacher to teach six units instead of five per year, to insure that teachers never had more than three preparations per semester, to allow students to complete one-sixth more subjects, to eliminate study halls, to provide students with supervised study under their course instructor, and to accustom students to college routine by semester scheduling.

Objectives that were variables were to improve class preparations by teachers, to allow time for study in depth, to intensify personal help, to allow a wider utilization of learning activities to facilitate learning, and to permit more independent study.

Hypotheses were constructed to test some of the objectives that were variables. To test the hypotheses, four high schools in north-central Kansas were utilized. Two schools using the double period class systems

formed the experimental group. The other two schools, using the traditional single period systems, formed the control group.

Hypotheses were tested by pupil opinion and by teacher opinion. The differences were accepted as significant when the .05 level was attained on the t-test.

The first hypothesis was not supported by the students. The experimental group (Cawker City-Downs) reported that more time than necessary was spent in class whereas the control group (Glasco-Lebanon) reported the amount of time spent in class was just about right. The hypothesis was supported by the teachers. Both groups of teachers indicated that there was sufficient time to develop their lessons to the degree they preferred.

The second hypothesis was supported by the teachers. Two out of fifteen learning activities used in the classroom that were significant were lectures and debates which were done more often in the control group.

The third hypothesis concerning individual help and independent study was not supported by the students. The teachers did support this.

The fourth hypothesis on grouping was supported by the students, but was not supported by the teachers.

The fifth hypothesis dealing with student adjustment was upheld by the students. Teacher responses were mixed.

The sixth hypothesis concerning similarity in student and teacher responses was not supported by either experimental or control group. In nearly half of all paired questionnaire items, teachers had higher arithmetic means.

Some of the objectives of the double period were being fulfilled, but many important ones were not.

CONCLUSIONS

The reasons given for breaking with many traditional methods were that those methods were no longer, if ever, best for educating children. However, the data of the various tables in this report did not substantiate the idea that teachers had broken away from many of their traditional teaching habits. Judging from the student responses many teachers had merely extended their old habits to take up the extra time provided in double periods.

It was encouraging to note that teachers were about as satisfied with teaching as the students were with school. The category which received the most responses by all groups was "reasonably well-satisfied".

It was interesting to note the pattern of responses on how many lesson preparations should have been reasonably expected per school day. Students and teachers of the double periods overwhelmingly selected three classes per day as being ideal. Students and teachers of single periods chose four per day more frequently than any other number. Yet the differences in preference between the experimental and control groups did not seem to affect their degree of satisfaction with school or teaching.

The data from the tables concerning individual help, independent study, grouping, and student adjustment were disturbing. In each case the teachers had rated themselves quite favorably in doing these things. Students rated these same items from neutral to negative. Were teachers failing to be sensitive to the needs of their students? Were teachers seeking security within the confines that the traditional approach so

conveniently provided? Such an approach surely prevented them from getting close and being sensitive to students and their problems. Teachers in the single periods were no more at fault than were teachers in double periods.

Only a few instances were found where teachers were actively concerned with a double period scheduling system. But for the most part they were working alone in their innovating. No coordinated effort was apparent in supporting the individual teacher in sharing approaches and findings.

Thus it was concluded that many of the objectives that were variables under the double period system were not being met at a satisfactory level.

RECOMMENDATIONS

Since the data of this report supports the idea that some of the objectives that were variables were not being met, it was recommended that several approaches be made to achieve those objectives.

One possibility includes a more determined effort to be innovative on the part of the principals and teachers. Some teachers were afraid, justifiably or not, that if they were to undertake some innovative project they would not have been encouraged and supported. There were examples which defeated that assumption, yet that feeling inhibited experimentations by some teachers. The principals needed to provide greater stimuli to encourage the teachers to meet the new challenges.

Another approach would be to bring in fresh ideas from authoritative sources, by inviting teachers or professors who have firsthand experience with innovative teaching methods to share their knowledge and experience.

An opposite approach would be to have teachers visit teachers or professors in other school systems that had a different and potentially successful approach to classroom teaching.

An intra-disciplinary approach might be feasible since there are teachers of the same subject areas within the district though usually not in the same building.

Although the reader may be able to cite other possibilities in facilitating and giving direction to various innovations in teaching methods feasible in double periods, one limitation to all these things is the ability of the teacher to understand the need to modify his teaching methods and be daring enough to better meet the stated educational goals.

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TO BE COMPLETED BY ALL STUDENTS

1. Please mark a check (✓) in front of the school you are now attending.

Cawker City Glasco
 Downs Lebanon

2. Please indicate which class you are a member.

Freshman Sophomore Junior Senior

3. How many years have you attended school in this attendance center?

one year 2 to 5 years 6 or more years (or school district)

4. Please indicate which of the following best describes your plans immediately after high school graduation

get married go to a business or vo-tech school
 get a job go to junior college, college, or university
 join armed services undecided or not sure
 other, please explain:

5. How satisfied are you with school?

/	/	/	/	/
Greatly dissatisfied	Mildly dissatisfied	No better could be expected under present conditions	Reasonably well- satisfied	Highly satisfied

6. How many class lessons should reasonably be expected of a student to prepare for each school day?

one three five more than six
 two four six

7. How do you feel about the length of time spent in each class?

/	/	/	/	/
Too much time spent in class	More time than I need is spent in class	About right amount of time is spent in class	a little more time should be spent in class to handle the subject	Much more time is needed for thorough handling of the subject

8. List some of the things you would prefer doing more often in your classes.

9. To what extent does your teacher give you individual help?

/	/	/	/	/
No help	Little help	Some help	Considerable help	A great deal help

TEACHERS, page 2

9. To what extent are you able to give individualized help?

/ _____ / _____ / _____ / _____ / _____ /
 Not at all Very little Some Considerable A great deal

10. To what extent are students studying independently at a level different from other students in the same class?

/ _____ / _____ / _____ / _____ / _____ /
 Rarely Occasionally Sometimes Frequently Very often

11. To what extent do you give differentiated assignments by grouping students according to their interests or abilities?

/ _____ / _____ / _____ / _____ / _____ /
 Rarely Occasionally Sometimes Frequently Very often

12. What has been the students' adjustment to the class routine?

/ _____ / _____ / _____ / _____ / _____ /
 Indifferent Poor Fair Good Excellent

13. Rate each of the types of student behavior in your classes according to the following scale:

5 - always _____ talk to neighbors
 4 - often _____ participate in discussions
 3 - some _____ listen to lectures
 2 - occasionally _____ listen to student reports
 1 - never _____ use of study time in class
 0 - undecided or _____ move about the classroom
 not sure _____ become bored in class
 _____ take class notes
 _____ cheat
 _____ pass personal notes

14. Please feel free to add any comments, criticisms or suggestions you wish to make about your classes.

15. Thank you for your participation and cooperation.

TO BE READ TO STUDENTS BY THE TEACHERS BEFORE THE QUESTIONNAIRES ARE
HANDED OUT TO THE STUDENTS

All students of Cawker City, Downs, Glasco, and Lebanon High Schools are being asked to complete this questionnaire. A copy of it will be given to each of you in just a moment.

The purpose of the questionnaire is to help us evaluate our school program.

Your answers are to remain anonymous, so please do not sign your names to the questionnaire. Therefore feel free to answer each item as it best describes your own situation.

To help you better understand how some of the items are to be answered, please look at this example (write the continuum rating scale illustrated below on the chalkboard). Many of the items will have a long line with five general divisions. Under each division are a few words which describe that section. You are to select the division which best describes your own situation and mark an "X" in that division. For example, if of these five choices the fifth comes closest to describing your situation, write an "X" in that division.

Are there any questions: (Answer questions)

The questionnaires will now be handed out to you. Go ahead and complete them.

EXAMPLE TO BE WRITTEN ON CHALKBOARD:

To what extent are you enthusiastic about today?

/	/	/	/	/	/	X	/
Not at all enthusiastic	Have little enthusiasm	Somewhat enthusiastic	Considerable enthusiasm			Have a great deal of enthusiasm	

TO BE READ TO TEACHERS BEFORE COMPLETING THE QUESTIONNAIRE

Today we see many revolutions taking place in our educational systems. With any new approach or method we hope we are improving the possibility for our students to learn more effectively and to be better prepared for responsible involvement in the world.

I am asking for your help in evaluating the educational program with which you are currently involved. Your anonymously given responses will be compared to responses of teachers of other high schools. The high schools included in this study, listed alphabetically, are: Cawker City, Downs, Glasco, and Lebanon. We hope that through the comparisons, questions will be answered concerning teacher and student satisfaction with regard to preparation and accomplishment under their present educational program.

Please remember not to sign your name for your responses are to remain anonymous. The results will not and cannot be used as teacher ratings. The only information your administrators will receive will be the final analysis of the total data collected from all the schools included in this study. When he receives this information it should be fully and openly shared with you.

The forms will now be given to you. Please answer all items. Are there any questions?

DIFFERENCES IN BEHAVIORAL PATTERNS
OF STUDENTS AND TEACHERS UNDER
ONE-HOUR AND TWO-HOUR CLASS PERIOD SYSTEMS

by

CURTIS A. STUBBS, JR.

B. A., Southwestern College, 1962
Winfield, Kansas

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirement for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1968

Approved by

Major Professor

Education in our high schools has a two-fold purpose, (1) optimum individual development, and (2) maximum development for responsibility in a democratic society. It was found that many experiments had taken place in search for better class scheduling plans to fulfill this purpose. Some lengthened classes, others shortened classes, or rotated them every other day, with various methods of assigning study time.

The Wacanda Unified School District 272, Cawker City, Kansas, initiated in September, 1966, a curriculum scheduling modification from six single periods to three double periods per school day. The purpose of this report was: (1) to trace the development of the new program, and (2) to evaluate the stated objectives of the program.

The following null hypotheses were proposed:

1. There is no difference in the extent to which teachers in double periods and those in single periods felt they could develop their classroom teaching.
2. There is no difference in the variety of learning activities used by teachers in double period classes as compared to those of single period classes.
3. There is no difference in the amount of independent study and of individualized help received by students in the double period systems as compared to those in the single period systems.
4. There is no difference in the frequency of grouping in the double period systems as compared with the single period systems.
5. There is no difference in the amount of control and student discipline problems between double and single period systems.

6. Student evaluation and teacher judgment were not different concerning the advantages and/or disadvantages of the double period system. The same was assumed to be true for students and teachers in the single period system.

The research was limited to personal interviews, library research, and questionnaires utilizing the idea of classroom experimental and control groupings. The study included four high schools in north-central Kansas. Two schools using the double period class system formed the experimental group. The other two schools, using the traditional single period system formed the control group.

Hypotheses were tested by pupil opinion and by teacher opinion. The differences between the means from the questionnaires were accepted as significant when the .05 level was attained on the t-test.

The first hypothesis was not supported by the students. The experimental group (Cawker City-Dovna) reported that more time than necessary was spent in class whereas the control group (Glasco-Lebanon) reported the amount of time spent in class was just about right. The hypothesis was supported by the teachers. Both groups of teachers indicated that there was sufficient time to develop their lessons to the degree they preferred.

The second hypothesis was supported by the teachers. Two out of fifteen learning activities used in the classroom that were significant were lectures and debates which were done more often in the control group.

The third hypothesis concerning individual help and independent study was not supported by the students. The teachers did support this.

The fourth hypothesis on grouping was supported by the students, but was not supported by the teachers.

The fifth hypothesis dealing with student adjustment was upheld by the students. Teacher responses were varied.

The sixth hypothesis concerning similarity in student and teacher responses was not supported by either experimental or control groups. In nearly half of all paired questionnaire items, teachers had higher arithmetic means.

Some of the objectives of the double period were being fulfilled, but many important ones were not. In order for the program to be more successful it was suggested that administrators work more closely with their teachers, encouraging them and supporting them in innovating to better meet present educational goals.