

Semestering and the Teaching–Learning Situation

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Le but de cet article est de décrire des écoles utilisant ou non la division en semestres (périodes d'enseignement qui divisent l'année scolaire en deux parties égales) à partir de la dimension proprement scolaire: programmes, activités en situation d'enseignement–étude, relations professeur–élèves. On a sélectionné pour cette étude six écoles secondaires regroupant différents types d'enseignement, comptant chacune environ 1500 élèves, dans quatre conseils scolaires urbains. Pendant le premier semestre, on a mené des entrevues avec 83 professeurs dont environ deux-tiers avaient enseigné à la fois dans des écoles utilisant la division en semestres et des écoles ne l'utilisant pas. Deux questionnaires ont permis de recueillir les données concernant les élèves; l'un était relatif aux activités propres à la situation d'enseignement–étude, l'autre aux relations professeurs–élèves. On a utilisé un χ^2 pour tester les différences des données provenant des entrevues des professeurs, et une analyse de variance pour tester les différences des données provenant des deux questionnaires.

Cette étude a révélé que les professeurs des classes utilisant la division en semestres passaient plus de temps à la planification d'un cours que ceux des classes n'utilisant pas cette division. En ce qui concerne les activités d'enseignement–étude, elles s'avèrent être beaucoup plus variées dans les classes utilisant la division en semestres que dans les autres. Enfin, élèves et professeurs s'accordent à reconnaître que les professeurs des classes utilisant la division en semestres connaissent plus personnellement leurs élèves.

D'un point de vue théorique, les données de cette étude pourraient générer des hypothèses pour une étude plus systématique. D'un point de vue pratique, cette étude pourrait donner aux éducateurs une plus grande compréhension des possibilités de la division en semestres.

THE CREDIT SYSTEM AND SEMESTERING

"The primary purpose of a school is to help students develop to the maximum of their potential as individuals" (Ontario, 1975, p. 2).

In order to realize this objective of individualized education in the secondary schools of Ontario, the credit system was implemented in 1966. The organization of education on a credit system has the potential to allow students to have programs suited to their individual needs and aspirations. The system permits a variety of structural arrangements which can involve longer or shorter cycles, block or modular schedules, and annual, semester, or trimester organizations.

One of these arrangements, semestering, is essentially a re-allocation of time wherein school terms are shortened and class periods are extended. In a semestered system the school year is divided into two terms, with the

first semester usually running from September to January and the second from February to June. Courses taken during the first term are completed in January and those during the second term are completed in June. A typical semester consists of four or five courses with period lengths that range from 60 to 80 minutes, as compared with the traditional eight courses of 40 minutes per period.

Although semestering has been a popular form of secondary school organization in Alberta and British Columbia, there has only been recent interest in this type of organization in Ontario. For example, in September, 1976, 155 of the 620 secondary schools in the province were operating on the full-credit semester, 64 were operating on the half-credit semester, and 13 schools were trimestered.

ORGANIZATION OF THE STUDY

A number of areas of concern have been examined in the literature on semestering (Fleming, 1974; King, 1972; Hill, Note 1). However, it is important to note the type of research findings to date. Most studies are attitudinal surveys and lack a statistical base suitable for determining what occurs in the semestered and non-semestered environments. The present research was designed to describe semestered and non-semestered schools on a number of classroom-process dimensions. Because of limited resources, this study focused on a few specific areas which seemed to have the greatest potential for understanding what occurs in semestered and non-semestered schools: curriculum, activities in the teaching-learning situation, and student-teacher relationships. Apparent relationships are described, but it is not within the scope of the study to explain *why* they exist, that is, to prove a cause-and-effect relationship between variables. It merely attempts to discover what relationships there may be in order to generate hypotheses and to lay the groundwork for later, more systematic and vigorous testing of hypotheses.

Six composite secondary schools, each with an enrolment of approximately 1500, from four urban school boards, were selected for study. Two schools were non-semestered and four were semestered. The semestered schools had been functioning as such for one year or longer and were operating on the full-credit system. The study focused on full-credit semestering, since half-credit semestering often implies little organizational change. (It is possible in a half-credit semestered school to organize around the more traditional 40-minute period.) Students in full-credit semestered schools usually take three to four credits per semester, and these credits are organized within 60-80-minute periods.

The literature has implied that semestering is more feasible for certain subjects, grades, and difficulty levels than others. For this reason, the sample included classes in mathematics, history, science,¹ and French, in grades 9 and 12, and at the general and advanced levels.

Data from teachers were obtained through structured interviews which dealt with teachers' experiences in curriculum matters (preparation and planning, curriculum changes, innovative practices), with their knowledge of students, and with student discipline. During the first semester interviews were conducted with 83 teachers, approximately two-thirds of whom had taught in both semestered and non-semestered situations. These data were then analyzed by employing chi square to test for differences between semestered and non-semestered classes.

Data from students were obtained through two questionnaires, one of which was concerned with activities occurring in the teaching-learning environment, and the other with teacher-student relationships. The questionnaires were administered during the first semester to 76 classes of students. Analysis of variance was used to test for differences between all semestered and non-semestered classes. The same data were subsequently reorganized and re-analyzed so that further comparisons could be made between

- 1. semestered mathematics classes and non-semestered mathematics classes,
- 2. semestered history classes and non-semestered history classes,
- 3. semestered science classes and non-semestered science classes,
- 4. semestered French classes and non-semestered French classes,
- 5. semestered general-level classes and semestered advanced-level classes, and
- 6. semesterd grade 9 classes and semestered grade 12 classes.

In the interest of brevity, results of the latter comparisons will not be reported here.

RESULTS OF TEACHER INTERVIEWS

The teachers of semestered classes spent significantly more time per week planning for their courses than did teachers of the non-semestered classes. (See table 1.) Although this finding was to be expected as teachers in

Table 1/Teacher Preparation Time per Week: Percentage of Teachers Responding to Each Response Category

Classes	No reply	Less than 1 hour	1 to 2 hours	2 to 3 hours	3 to 4 hours	More than 4 hours	N
Non-semestered	0.1	14.8	29.6	11.1	18.5	25.9	27
Semestered	1.8	0.0	10.7	21.4	21.4	44.6	56

$df = 5 \quad x^2 = 15.4446 \quad p \leq .009$

non-semestered schools typically have one 40-minute preparation period per day and teachers in semestered schools have one 60-80-minute preparation period per day, it was surprising to note that many of the

semestered teachers used more than twice as much of the available time for planning.

Teachers of the semestered classes, who had also taught in the non-semestered organization, indicated that more time was required for planning for one semestered class than for two non-semestered classes. When the researcher questioned the semestered teachers about student fatigue, many teachers indicated that the semestered environment was not much more tiring for students, but that for teachers, teaching the semestered classes was more exhausting than teaching non-semestered classes.

There were no significant differences found between teachers' satisfaction with the amount of content covered during class time. It was expected that the semestered classes would cover considerably less content than the non-semestered classes, as the teachers had indicated that the same amount of material could not be presented in a semestered class as in a non-semestered class. The teachers felt that they could not lecture twice the length of time in the semestered class and that, in any case, students could not absorb as much material in one long period as they could in two shorter periods. Although some semestered teachers stated that they covered less content, they were essentially more concerned with the *use* of content as opposed to the amount. One of the advantages that has been cited in favor of semestering is that the reorganization may lead to a number of process goals. The teachers' concern with use of content, instead of amount of content covered, lends support to this position.

No significant differences were found between classes with regard to types of curriculum changes made. Neither did the procedure differ for making curriculum changes, as the majority of both non-semestered and semestered teachers indicated that the teacher initiated curriculum change. None indicated that the principal initiated change. However, the principal may indirectly initiate curriculum change by changing the organizational structure of the school, which may in turn force the teachers to make changes.

Although it was expected that semestering would require in-service training to plan for curriculum change, the teachers felt that they required little in-service training. It was also anticipated that the semestered organization would provide for more flexible treatment of curriculum by giving teachers an opportunity for co-operative planning and co-operative teaching. Most teachers of semestered and non-semestered classes did not practise co-operative or team teaching at all. The longer periods in the semestered organization apparently do not facilitate team teaching any more than do the shorter periods of the non-semestered organization. However, many semestered class teachers indicated that the physical facilities of the school inhibited the practice of co-operative or team teaching.

RESULTS OF ACTIVITIES QUESTIONNAIRE

While merely changing the organizational structure of a school will not, in itself, result in better teaching, it can provide the conditions for teachers to adopt the strategies most appropriate and relevant to the learner. Semestering may encourage teachers to alter their methods of presentation by allowing opportunities for more intensive and varied instruction within longer class periods. But are these opportunities seized upon by the teachers? Are activities in semestered classrooms different from those in non-semestered?

In order to ascertain whether such a difference existed, students were asked to indicate how frequently the following activities were employed in their classes:

Teacher-Initiated Activities

teacher lectured or read
teacher questioned / student answered
teacher gave demonstration
student wrote test
teacher showed films or slides
laboratory work
students read texts at seats
students worked on problems at seat
teacher talk

Student-Initiated Activities

class engaged in discussion
small group discussion
independent assignment work
students gave reports or talks
students engaged in role playing
students showed films or slides
students read other books at seat
students used resource centre
students worked at blackboard
students went on field trip

Homework Activities

class time for homework
homework done during school day outside class
homework done at home

The data indicated that, overall, there was significantly more variety in the teaching-learning activities of semestered classes than in non-semestered classes. Further analysis revealed five specific activities for which significant differences were found. Semestered teachers lectured or read less; and their students gave more reports or talks, went on more field trips, spent more time doing homework during the school day outside class, and spent more time doing homework at home. The last outcome is interesting, since the literature indicated (1) that because of the availability of more free time in the semestered system, a need would arise for quiet study

areas and adequate activities to avoid improper use of time, and (2) that the number of students not involved in instruction in the semestered system would be greater than ever, and could create a supervision problem. The present study indicates that students of the semestered schools spent at least some time on homework during their spare time.

No significant differences were found for any other of the activities studied. This finding is contrary to predictions in the literature that teachers in semestered classes would talk more often and show more films or slides. The literature also suggests that semestered students would spend more time working on problems and reading texts at their seats, and would likely participate more often in small-group discussion, in independent work, and in the use of the resource centre. The data did not support these predictions.

STUDENT-TEACHER RELATIONSHIPS

It has been claimed by advocates of semestering that semestering affords teachers the opportunity to become knowledgeable about their students earlier in the school year. To test this claim, students were asked to indicate the extent to which they agreed or disagreed with the following statements.

1. The teacher in this class knows and understands the students' point of view on classroom matters.
2. This teacher has a good understanding of the students' academic progress.
3. This teacher knows most of the students fairly well personally.
4. The teacher in this class is interested in my success as a student.

Students in semestered classes believed that, at the time of testing, their teachers knew them better on a personal basis than did non-semestered students. Responses to the other three items showed no significant differences.

Semestered teachers, on the other hand, were of the overwhelming opinion that they were well acquainted with both personal and academic aspects of their students. When asked "How well do you feel that you know your students personally?" 57% replied, "very well" or "well"; none of the non-semestered teachers selected these categories. The difference between the two groups was significant at the .0001 level. Likewise, 68% of the semestered teachers but only 19% of the non-semestered teachers stated that they knew their students "very well" or "well" on an academic basis ($p < .0002$).

Since these data were gathered early in the school year, it is not surprising that the results should indicate relative differences in the degree of knowledgeability between the two types of teachers. If, however, we can say that two weeks in the semestered system approximately equals one month in the non-semestered system, it then becomes apparent that the

Table 2/Amount of Time that Teachers Take to Get to Know Students: Percentage of Teachers Responding to Each Response Category

Classes	1 week	1 to 2 weeks	2 weeks to 1 month	More than 1 month
Non-semestered	3.7	11.1	11.1	74.1
Semestered	7.1	35.7	44.6	12.5

$df = 3 \quad \chi^2 = 31.64 \quad p \leq .0001$

difference is an absolute one. According to table 2, 43% (7.1% + 35.7%) of the semestered teachers believe they can get to know their students within a relatively short time, whereas only 25% (3.7% + 11.1% + 11.1%) of the non-semestered teachers hold such a belief.

Given the previous finding, one would expect a similar result from the item, “In general how long does it take you to identify students who are having difficulty in this course?” Here we do find a relative difference, as 68% of the semestered teachers claimed it took them two weeks and 70% of the non-semestered teachers agreed with this estimation (if one month can, indeed, be equated with two weeks under the semester system). Whereas there was an absolute difference in the length of time a teacher takes to get to know his students, there was only a relative difference in the length of time a teacher takes to identify students who are having difficulty in a course.

Both students and teachers were questioned about the degree of discipline problems encountered in their classes. No significant differences were found between semestered and non-semestered classes for either group of respondents.

CONCLUSION

Presumably the semestered environment, with the manipulation of time it makes possible, could foster (1) curricula better adapted to the needs of students, (2) more variation in teaching-learning activities, and (3) improvement of student-teacher relationships. The study indicates that there was more overall variety in the teaching-learning activities of semestered classes, and that teachers of semestered classes did have a better personal knowledge of their students.

Semestering has emerged as a response to the demand for individualization in education. The present study suggests that the philosophy and objectives of individualization in education may indeed be achieved through the utilization of semestered patterns of organization. The present results and findings are best seen as exploratory, and, hence, before any firm conclusion can be reached as to the total effect of semestering on

school environments and students, there is definitely a need for more large-scale analysis involving a greater number of semestered and non-semestered classrooms. The scope of the problem includes aspects of semestering related to educational administration, curriculum development and planning, and student personal and academic growth.

NOTE

1. General science classes in grade 9, chemistry classes in grade 12.

REFERENCE NOTE

1. Hill, P. L. *A review of the extent to which schools are being organized on the semester system in Ontario*. McMaster University, January 1974. (Mimeographed)

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