piece-work model in one or two subjects during the whole school year. What
subjects are to be chosen is a decision for the so-called class-conference, i.e.
all the teachers who instruct a certain class. In the third grade everybody has
to perform a "special task" independently but with guidance from one of the
teachers. Groupwork is recommended.

3. There are quite a lot of changes in the different subjects. Some of them
are quite new in most tracks, such as history of art and music, general ling-
ustics, which may replace Latin in the humanities' track (the only one in
which Latin may be studied) psychology, which formerly was included in
philosophy, and nature knowledge, a new orientation subject for the non-
science streams aiming at bridging the gap between Snow's "two cultures".
Due to the 1962 reform of the comprehensive school, which will teach only
two foreign languages, the second of which is an option between German and
French, the gymnasium has to start from scratch with the third foreign
language which may be chosen from German, French, Spanish or Russian, but
which also in certain circumstances may be Italian, Portuguese or Finnish.
Finally, several subjects have got a changed content or structure. Mathematics
has been modernized and includes also quite a lot of statistics. Biology has
been given a biochemical basis. Physics is based on fundamental nuclear
theory. Social Science has incorporated geography and quite a lot of economics
and has dismissed some of the earlier descriptive contents, since the subject
has been strengthened also in the comprehensive school. History has been
given a broader cultural approach which is also the case with Religious
Studies especially with regard to non-Christian faiths.

3.3. The general implementation program

The decision about the new secondary school was taken by the Swedish
parliament in December 1964. The planning committee had proposed a start
already in the following school year beginning in late August 1965, but in
order to give sufficient time for the implementation and detailed planning,
the Minister of Education's bill postponed the start until 1966.

The program of implementation contained both general actions directed
at all pupils and teachers, and special ones with regard to those subjects in
which there were profound changes in content.

Since Sweden is a country with a rather centralized school system some of
the general actions are to be regarded as quite normal decisions in connection
with every curriculum reform. Among these, the issue of the syllabus, Lärplän
för gymnasitet (1965) by the National Board of Education, is the most important
one. This book of about 500 pages was distributed without cost to every
gymnasium teacher. It contains the general objectives and guidelines about
methods of work and co-operation as well as a detailed syllabus for every
subject and also methodological recommendations for the design of the
teaching, hints for contents in "special tasks", etc. A corresponding volume
was published for the new continuation school.
In addition to this there was published a special book with recommendations for the planning of instruction in different grades. A big information campaign was further directed at the pupils, their parents and teachers concerning the school-forms, streams and options in the new secondary school system.

Other general actions aimed at supplying the schools with continuous help during the first years. The already existing consultant teachers were given extra information and their duties were directed towards the implementation problem and their number was also increased. There are consultant teachers both on the regional and national levels. Since one of the most prominent changes affected the examination system — the first orals were abandoned for several reasons — quite a number of gymnasium inspectors were introduced, whose duty it was to visit schools all over the country, paying special attention to their own field of speciality. During the implementation period the duties of these inspectors were heavily directed towards counselling the teachers about special difficulties, e.g. the problems of "piece-work" and "special tasks".

Finally, the National Board of Education supported financially the publication of text-books, especially in new and small subjects for which there seemed to be an insufficient market for the commercial enterprises. There was a good deal of controversy over this and the textbook situation in general. In spite of the lengthening of the planning time — it has to be observed that the final version of the new syllabus required another half year before publication — many books were not published or distributed to the schools in time, which also had to contend with late decisions by the teachers and with difficulties in predicting the number of copies needed.

3.4 Some follow-up studies in the implementation program

In 1966, the National Board of Education started a certain program, the LAG-project (Cervall 1968), in order to prepare a revision of the new curricula and methodological recommendations, with directions to act as a feed-back mechanism mainly in accordance with the general principles put forward above. The general principles and design of this project had been planned in co-operation with educational researchers and the Board also has a special advisory research group from the university of Göteborg. The general objective of the LAG-project is to collect relevant and reliable data about the problems of implementation in order to map out the weak points in the reform program, as a basis for supplementary decisions about the implementation program, varying from new recommendations to special instructional systems, changes in the time-table, etc. In this phase of the reform the objectives are not generally questioned, so the main idea is to find out the most suitable means in order to arrive at an optimal goal-attainment.

One of the most important problems is about the pupil recruitment to different options and streams. In tab. 1 figures are shown for the initial state of affairs before the reform (1962) in terms of the proportions of the different
streams in the final grade and the corresponding program, taken by Parliament for about 1970. Tab. 1 also shows the actual choices by the first and second pupil generation in grades 1 and 2.

Tab. 1. Proportion of students in different streams before and after the reform according to official plans and actual choices by the students.

Percent.

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<td></td>
<td></td>
<td>33</td>
<td></td>
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<tr>
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<td>15</td>
<td>32</td>
<td>29</td>
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<tr>
<td>Natural science</td>
<td>35</td>
<td>30</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Economics</td>
<td>10</td>
<td>22</td>
<td>18</td>
<td>16</td>
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<tr>
<td>Technology</td>
<td>10</td>
<td>22</td>
<td>17</td>
<td>15</td>
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<td>Total</td>
<td>100</td>
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In relation to the plans the figures for the economics and technology streams are too low, although there has been a change in the expected direction since 1962. The pupils apparently prefer the humanistic-social science alternative to an unexpectedly high degree. The National Board was also worried about the loss of pupils in the natural science stream between grades 1 and 2. The loss is, by the way, somewhat greater than is demonstrated by the net figures, since there also was a transfer of pupils from the technical options in grade 1 to the natural science track in grade 2.

These tendencies caused the National Board to decide on a special study about the "natural science track-leavers" carried out by Richardson (1968). A rather complex pattern of reasons was revealed, of which some had to do with the new marking system in relation to the general level of recruitment. Another conclusion of special interest here was the attitudes towards the curricula in physics, mathematics and chemistry. They were judged as extremely difficult in this order, at the same time as many of the "leavers" expressed a growing interest in social sciences. The rather sudden change in the approach of the comprehensive compared with the secondary school has been pointed out as a mechanism behind this tendency and some e.g. Svanteson (1968), have suggested that this problem cannot be solved in any final
way unless the pupils already in the comprehensive school have a better basis in terms of clear science concepts.

Another study by Ohlsson (1967) made a preliminary comparison between the attitudes towards the choice situations but found, in spite of the changes in organizational structure and the information program, almost the same factors as Harnqvist & Grahm (1963).

Another special study, also carried out by Richardson in co-operation with our institute, has been devoted to the program of independent work. A two-step design has been used. Firstly a questionnaire was sent out on a national basis to the deputy-headmasters who regularly are responsible for educational planning. The main question was about what subjects had actually been chosen as a field for the "piece-work" program. The dominating answers were Swedish literature, history and social science. In the next step new questionnaires were distributed to a representative sample of teachers in the different subjects of any frequency. The form contains questions about the work load, the problems concerning planning and guidance as well as the forms for reporting.

Fig. 4. General plan of the main study in project Compass, carried out in the social and natural science tracks of the new gymnasium in Göteborg.

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**Administrative data**

- Drop outs, track changes
- Grade 2

**Data from teachers and pupils**

- Final marks
- Central examination
- Process 4 (P, P)
  - General experiences and attitudes
  - Actual teaching
  - March - May
- Process 3 (P)
  - Planned teaching
  - March - May
  - Actual teaching
  - December - March
- Process 2 (P, T)
  - Planned teaching
  - December - March
  - Actual teaching
  - September - October
- Process 1 (P, T)
  - Planned teaching
  - October - December
  - Actual teaching
  - September - October

- Choices and changes between classes
- Population list of pupils, teachers and classes

**Basic data**

- Grade 1
- Social background
- Intelligence
- Marks from the comprehensive school
- School attitudes
- Plans for the future

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Finally, the ordinary teaching problems are also investigated. Through certain recommendations, the National Board has tried to standardize the variables to be included in the reports by the gymnasium inspectors. Through co-operation with some projects undertaken by research institutes, e.g. the project COMPASS — comparative analyses of objectives and processes in school systems — (Dahllof & Lundgren 1969), problems about methods and amount of time spent on curriculum units of different kinds and levels of objectives are subject to systematic study, as well as the total load of homework (cf. Ahlin 1968). The Compass project is carried out in the Göteborg secondary schools and is limited to five subjects in grade 2, but the general approach is regarded as a model for a criterion and process-related evaluation program. The data collection is done four times within the school year from both pupils and teachers according to the main design shown in fig. 4.

It has to be observed that, each time, information is collected about (1) what the class is dealing with, the moment and (2) by what methods, (3) what they have been dealing with since the start of the term or the last data collection and (4) what problems they have met during this time. Finally, (5) the teachers are asked about their planning for the next period and (6) the pupils are asked about their attitudes towards methods, subjects, teachers and school-work in general. Their actual performance is also studied through data from the schools office about (7) their marks and (8) their results in the standard tests.

MATERIAUX ET METHODES UTILISES POUR RENDRE EFFECTIVE L’ELABORATION DU PLAN D’ETUDES: DESCRIPTION D’UN PROGRAMME TYPE, ILLUSTREE DE QUELQUES EXEMPLES TIRES DE LA SUEDÉ

par Urban Dahllof, (Göteborg)

Le système scolaire est une fonction de la société au cours d’une période donnée. Les besoins et les exigences sont pris en considération, lorsque l’on détermine les buts d’ordre général et les objectifs immédiats, compte tenu de la culture philosophique générale, de la tradition et de la place qu’occupe cette structure dans l’ensemble du système d’éducation. Des décisions de cet ordre correspondent à un acte politique. Le fait d’accepter le statu quo implique une prise de position d’une portée politique non moins grande que celui de présenter délibérément un projet de réforme. Un certain nombre de composantes influent sur la mise en œuvre de ces objectifs: la position de l’élève et celle du professeur ; le facteur de réceptivité ; l’intégration des variables de ce processus dans un cadre prédéfini.

Il ne faut s’attendre à aucun changement si l’on ne prend pas des mesures concrètes pour pousser les personnes responsables dans ce domaine à modifier leur attitude, de façon à ce qu’il y ait, dans le processus de l’enseignement tout entier, un changement qui reflète, dans des proportions raisonnables, les intentions qui se manifestent derrière ces réformes. Il y a, dans chaque décision de réforme, des idées plus ou moins explicites quant à l’influence qu’aura cette réforme sur la situation d’enseignement. Il est également nécessaire de motiver les enseignants et, pendant la période de mise en application, de fournir à la direction de l’école des données, systématiquement recueillies, sur l’expérience, les problèmes, l’attitude et les exigences des professeurs et des élèves.
On distingue trois sections dans la recherche systématique sur le plan de l’enseignement :
(1) l’étude extérieure des problèmes de sujets d’intérêt (analyse de la demande) ; (2) l’examen de la structure logique des versions préliminaires du projet de réforme ; (3) une analyse des fonctions, particulièrement pour la période de mise en œuvre qui suit directement une réforme.

En Suède, l’élève entre dans le nouveau système d’études secondaires à partir de l’âge de 17 ans. La structure de l’enseignement est la même pour tout le pays. Le système comprend trois types d’écoles : le gymnasie, l’école supérieure et l’école de formation professionnelle. L’origine directe de cette réforme est la décision parlementaire de 1962, concernant une nouvelle école dont la portée de l’enseignement serait extrêmement étendue, et dont le nouveau programme d’études a inévitablement suscité des changements dans celui de l’école secondaire. C’est dans le cas du gymnasie où l’élève poursuit des études pré-universitaires d’une durée de trois ans, que l’on trouve le meilleur exemple de mise en œuvre de la réforme. L’un des principaux objectifs était de permettre aux élèves de choisir plus facilement leur voie, à travers l’enseignement secondaire. Le changement le plus important dans le programme d’études affecte les méthodes de travail. Au nombre des changements concernant les matières enseignées, citons l’introduction de la linguistique générale (remplaçant le latin), la connaissance de la nature, dont le but est de combler le fossé entre les "deux cultures", les mathématiques modernes et la physique nucléaire.


Le projet IAG, que la Commission commença en 1966, avait pour objectif la recherche de données importantes, relatives aux problèmes de la mise en application, sur lesquelles pourraient être fondées des décisions supplémentaires. La présentation à l’élève de différentes options et voies à suivre s’est révélée un problème sérieux. Le plan COMPASS (1969) s’est penché sur la méthode et le temps à consacrer aux différents types d’unités entrant dans le cadre du programme d’enseignement et sur le niveau que ces unités doivent permettre d’atteindre. Des données sont recueillies trimestriellement au cours de l’année scolaire, auprès des professeurs et des élèves.