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AN ANALYSIS OF SOME BACKGROUND FACTORS AFFECTING THE  
RECRUITMENT AND ACHIEVEMENT OF STUDENTS ENROLLED FOR  
EXAMEN ARTIUM IN NORWAY

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## S U M M A R Y   I N   E N G L I S H

### AN ANALYSIS OF SOME BACKGROUND FACTORS AFFECTING THE RECRUITMENT AND ACHIEVEMENT OF STUDENTS ENROLLED FOR EXAMEN ARTIUM IN NORWAY

This report presents some findings from a statistical/sociological investigation of students leaving the Gymnas in Norway. The Norwegian Gymnas is a secondary school where the students work towards the examen artium, the passing of which is a prerequisite to admission to a university. This investigation includes all students who entered for this examination in the years 1946, 1951, 1958 and 1963 and describes the composition of this group according to course of study, final grades and such factors as age, sex, and social and regional background. It also shows how these factors affect both a student's chance of attending a Gymnas and his subsequent school achievement. The report also gives a historical review of all those who graduated from the Gymnas for the period 1900 - 1965, with some details about the composition of this group with regard to sex and course of study.

A follow-up study in a later report will show the subsequent career pattern of these pupils both at the university and in other forms of post-secondary education, and the relation between this pattern and the factors mentioned above.

The primary data in this document are collected from the Central Bureau of Statistics and the Gymnasråd (the official body responsible for the administration of the Gymnas - under the Ministry of Church and Education). The research work was directed by Sigmund Vangsnes, who has prepared this report in co-operation with Kaare Andersen.

#### Findings:

1. At the beginning of the century the graduate incidence<sup>x)</sup> was 1 %.  
In 1920 it was about 2%, and at the beginning of World War II about

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x) The usual age at graduation from the Gymnas is now 19½ years, but from 1900 to 1943 it was 20½ years. The term "graduate incidence" is used in this report to denote the proportion of Gymnas graduates to the total population having the same age as the graduates.

5 %. This percentage rose considerably during the Second World War and culminated in 1948, when 12 % of the age group (19½ years) graduated. After a 12-year stagnation period, the graduate incidence again began to increase rapidly, and in 1965 reached 17 % (18 % if we include the Economic Gymnas, a new secondary school, whose first students graduated in 1953).

2. In 1900 10 % of graduates from the Gymnas were girls. The percentage rose rapidly until 1915, when it reached 30 %. Since then the increase has been very gradual. In 1945 40 % of Gymnas graduates were girls, and in 1965 about 43 %.

In 1965 25 % of the girls chose a Science course and 75 % an Arts course, while 70 % of the boys chose a Science course and 30 % an Arts course. The girls' preference has been comparatively stable throughout the past 25 years, but the boys have shown a steady increase in their preference for Science courses during this period.

3. With regard to regional origin of Gymnas graduates the proportions have changed very little in the post-War period. Although the number of Gymnas graduates and the graduate incidence increased considerably in the years from 1960, in 1963 the proportion of graduates from the Oslofjord region to those from the Northern region was still more than 2 : 1 - as had been the case in 1946. The explosive increase in graduate incidence in the beginning to the 60's has only to a small extent altered the regional distribution of Gymnas graduates.
4. From the end of the 40's to the end of the 50's there was little variation in number and social composition of Gymnas graduates. Since 1958, on the other hand, there has been a large increase in the number as well as a considerable variation in the social composition of the graduates.

In the 1950's only 13 - 14 % of Gymnas graduates were the children of manual workers, but in 1963 this figure had risen to 18.5 %. From 1958 until 1963 the graduate incidence increased in all

social groups, but to a greater degree in the following groups: Manual workers, foremen, and craftsmen.

Although there has been considerable rise in the graduate incidence in these under-represented social groups in recent years, the social composition of Gymnas graduates is still very uneven. In 1963 the graduate incidence of the social group "Managerials and professionals" was over 50 %, whilst in the group "Manual workers and foremen" it was less than 10 %.

5. The findings in this report indicate that there is a clear relationship between the economic and social structure in a region and the graduate incidence in that region. The regional differences in graduate incidence seem to a great extent to be related to differences in the social composition of the population of the region and have a tendency to disappear if the social class factor is kept constant. In 1963 the graduate incidence for "Manual workers and foremen" was about 7-8 % in all six regions of Norway, and was furthermore the same in the industrialized Oslofjord region as in the less developed Northern region, and the same in urban regions as in regions with a lower population density.

For "Clerical workers", also a relatively homogenous group, the graduate incidence varied from 27 % in the Oslofjord region to 23 % in the Northern and Western regions. For the other social groups which are much more heterogenous as regards income and social status, geographical variation in graduate incidence is greater. This can to a certain extent be explained as an effect of regional differences on the internal composition of the groups.

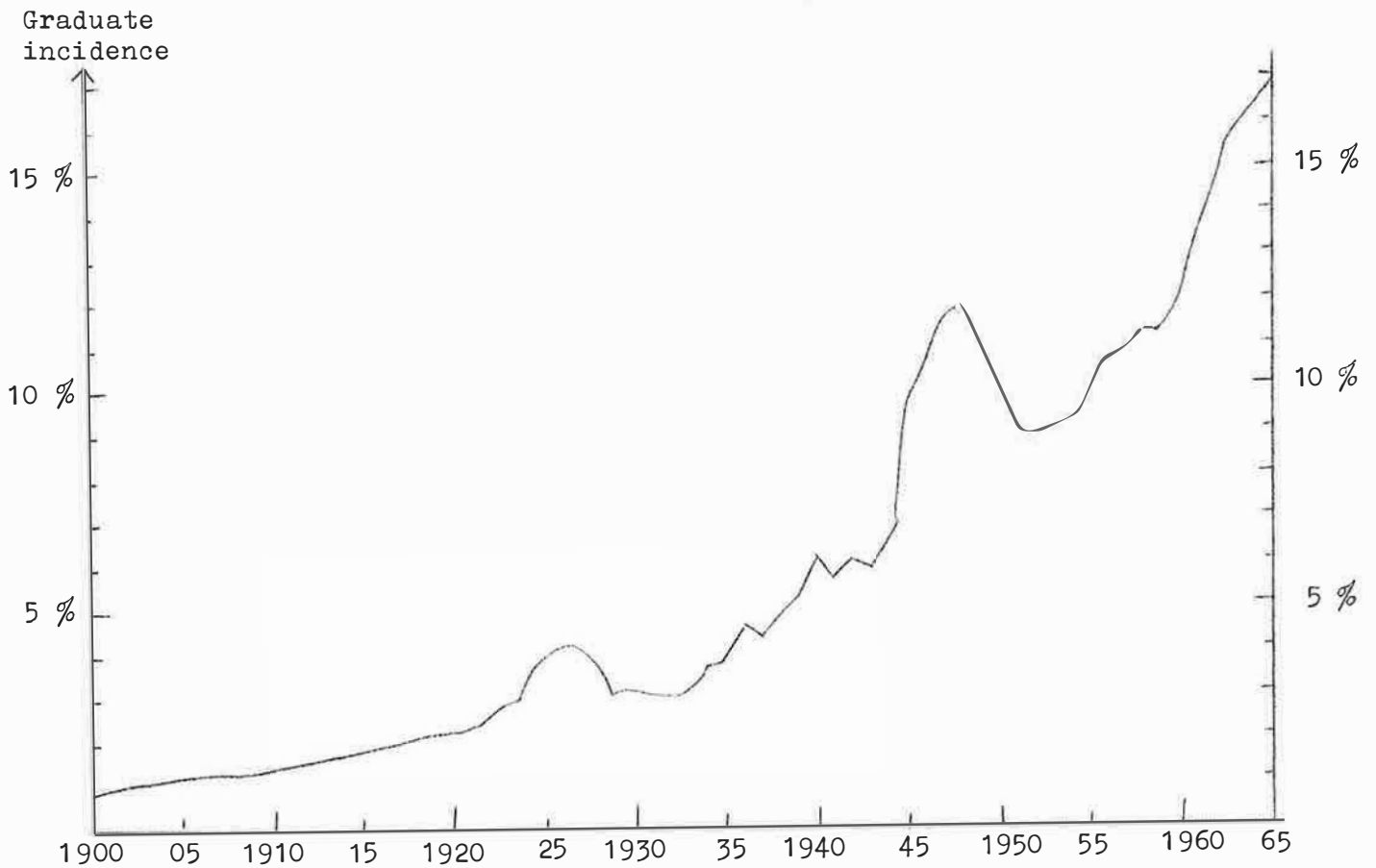
6. The percentage of good grades (S and M) has risen in the post-War period. The improvement in grades has taken place in both sexes, but the percentage of good grades is slightly higher among boys than among girls. It is also higher among Science graduates than among Arts graduates.

The number of good grades is relatively higher in the economically less developed regions than in the central urbanized regions - the percentage of good grades was highest in the regions with lowest graduate incidence.

TABLES AND GRAPHS

The tables and graphs in this English summary are numbered after those in the report in Norwegian.

Figure 3 II. Gymnas graduate incidence <sup>x)</sup> in the years 1900-1965.



x) The term "graduate incidence" is used in this report to denote the proportion of Gymnas graduates to the total population having the same age as the graduates.

Table 3 I. Number of Gymnas graduates and graduate incidence in the period 1900 - 1965.

Year	Graduates per year <sup>x)</sup>		Year	Graduates per year	
	Absolute number	Graduate incidence		Absolute number	Graduate incidence
1900	350	0.9	1951	3.847	9.0
1901 - 05	435	1.1	1952	3.665	8.9
1906 - 10	496	1.3	1953	3.539	9.0
1911 - 15	732	1.7	1954	3.547	9.1
1916 - 20	1.012	2.1	1955	3.765	9.5
1921 - 25	1.550	3.0	1956	4.269	10.5
1926 - 30	1.784	3.5	1957	4.540	10.8
1931 - 35	1.811	3.4	1958	4.880	11.3
1936 - 40	2.757	5.0	1959	4.958	11.2
1941 - 45	4.135	6.9	1960	5.210	11.8
1946	4.980	10.4	1961	6.176	13.4
1947	5.333	11.6	1962	7.419	14.5
1948	5.392	11.8	1963	8.809	15.7
1949	5.038	11.2	1964	9.807	16.2
1950	4.484	10.2	1965	10.757	16.7

x) Average yearly figures from 1900 to 1945.

Table 6 I. Percentage of female graduates among all Gymnas graduates in the periode 1900 - 1965.

Year	Number of graduates <sup>x)</sup> per year	Of these female		Year	Number of graduates <sup>x)</sup> per year	Of these female	
		Number	%			Number	%
1900 - 04	407	48	11.8	1945 - 49	5.051	1.930	38.2
1905 - 09	487	109	22.4	1950 - 54	3.816	1.515	39.7
1910 - 14	669	186	27.8	1955 - 59	4.482	1.842	41.1
1915 - 19	976	269	30.3	1960	5.210	2.031	39.0
1920 - 24	1.370	383	28.0	1961	6.176	2.547	41.2
1925 - 29	1.861	558	30.0	1962	7.419	3.109	41.9
1930 - 34	1.693	508	30.0	1963	8.809	3.789	43.0
1935 - 39	2.524	810	32.9	1964	9.807	4.149	42.3
1940 - 44	3.844	1.372	35.7	1965	10.757	4.637	43.1

x) Average yearly figures from 1900 to 1959.

Table 6 IV. Male and female Gymnas graduates tabulated according to type of course in the Gymnas. Percentages.<sup>x)</sup>

Year	Female			Male		
	Science courses	Arts courses	Total	Science courses	Arts courses	Total
1930 - 34	13.1	86.9	100	54.2	45.8	100
1935 - 39	16.0	84.0	100	59.2	40.8	100
1940 - 43	19.8	80.2	100	60.6	39.4	100
1946 - 49	18.0	82.0	100	61.7	38.3	100
1950 - 54	20.4	79.6	100	66.1	33.9	100
1955 - 59	21.4	78.6	100	69.6	30.4	100
1960 - 64	24.0	76.0	100	71.1	28.9	100
1965	24.4	75.6	100	71.5	28.5	100

<sup>x)</sup> Figures for the years 1944 and 1945 are not available.

Table 7 II. Gymnas graduates and graduate incidence in 1946, 1951, 1958 and 1963 tabulated according to domiciliary region.

Region <sup>x)</sup>	1946		1951		1958		1963	
	Number of graduates	graduate incidence	Number of graduates	graduate incidence	Number of graduates	graduate incidence	Number of graduates	graduate incidence
Oslofjord-region	2.082	13.7	1.550	11.5	2.153	13.9	3.720	20.1
Central East	357	7.0	299	6.7	415	11.3	831	15.8
Telemark and South Coast	527	11.9	430	11.3	476	13.0	820	16.2
Western Norway	1.168	9.8	878	7.8	1.060	9.9	1.942	13.6
Trøndelag	319	6.7	319	7.9	385	9.8	727	13.2
North-Norway	313	4.8	283	4.8	341	6.0	688	9.0
Whole country	4.786	10.0	3.774	8.8	4.861	11.3	8.787	15.6

<sup>x)</sup> See map I.

Table 8 II. An estimate over Gymnas graduates and Gymnas graduate incidence within various social groups in the years 1951, 1958 and 1963.  
 Percentage increase in the graduate incidence in the various social groups 1951 - 1963 and 1958 - 1963.

Social group (Father's (or mother's profession or trade)	1951		1958		1963		Percentage increase in the Gymnas graduate incidence	
	Number of Gymnas graduates	Gymnas graduate incidence	Number of Gymnas graduates	Gymnas graduate incidence	Number of Gymnas graduates	Gymnas graduate incidence	Percentage increase in the Gymnas graduate incidence	
							1951 - 1963	1958 - 1963
Selfemployed in agriculture and forestry	506	4.9	570	6.1	886	8.1	65.3	32.8
Fishermen	46	1.6	63	2.3	104	3.0	87.5	30.4
Selfemployed in industry, commerce, shipping, finance, etc.	315	18.2	387	29.0	625	37.5	106.0	29.3
Craftsmen	111	6.1	166	12.8	383	21.7	255.7	69.5
Professional and managerial	1486	47.9	2047	49.8	3257	60.0	25.3	20.5
Subordinate employees	582	25.0	650	21.1	1070	24.9	- 0.4	18.0
Foremen and skilled and unskilled workers	686	3.5	910	4.3	2148	7.6	117.1	75.7
All groups	3774	8.8	4861	11.3	8787	15.6	77.3	38.1



Table 8 III. Ratio of graduate incidence within various social groups when graduate incidence for the group "foremen and skilled and unskilled workers" is set equal to 1.

Social group	Ratio of graduate incidence		
	1 9 5 1	1 9 5 8	1 9 6 3
Selfemployed in agriculture and forestry .....	1.4	1.4	1.1
Fishermen .....	0.5	0.5	0.4
Selfemployed in industry, commerce, shipping, finance etc. ....	5.2	6.7	4.9
Craftsmen .....	1.7	3.0	2.9
Professional and managerial .....	13.7	11.6	7.9
Subordinate employees .....	7.1	4.9	3.3
Foremen and skilled and unskilled workers.....	1.0	1.0	1.0
A l l g r o u p s .....	2.5	2.6	2.1

Table 9 I. Graduate incidence in the different regions<sup>x)</sup> and within the various social groups in 1963.

Social group	Oslofjord-region, Telemark, Central East	South Coast	Western Norway	Trøndelag	North Norway	Oslo	Bergen
Selfemployed in agriculture and forestry .....	10.9	9.5	7.7	6.3	3.1	-	-
Fishermen .....	3.9	-	3.2	-	2.7	-	-
Selfemployed in industry, commerce, shipping, finance, etc. ....	41.3	49.5	31.6	36.2	30.4	42.6	25.0
Craftsmen .....	25.0	25.6	18.4	26.1	9.9	26.4	15.7
Professional and managerial .....	70.0	52.9	49.7	57.6	38.2	70.7	43.5
Subordinate employees .....	27.1	25.8	22.6	22.9	22.7	23.4	16.4
Foremen and skilled and unskilled workers .....	7.3	8.6	8.2	7.9	7.5	7.5	7.5
A l l g r o u p s .....	18.9	16.4	13.6	13.2	9.0	25.5	15.4

x) See map II.

Table 16 a-g. Percentage of male working population aged 40-59 years in the different regions and within the various social groups in 1963.

Social group	Oslofjord-region, Telemark, Central East	South Coast	Western Norway	Trøndelag	North Norway	Oslo	Bergen
Selfemployed in agriculture and forestry	11.0	14.3	18.6	22.6	17.7	0.4	0.5
Fishermen	0.6	3.0	6.6	4.1	19.6	0.0	0.2
Selfemployed in industry, commerce, shipping, finance, etc.	3.4	3.5	3.3	2.4	3.0	4.3	4.3
Craftsmen	3.6	3.4	3.9	3.3	2.9	4.4	4.9
Professional and managerial	12.4	10.5	9.9	8.5	6.5	20.2	14.7
Subordinate employees	10.4	9.9	9.8	8.6	7.2	16.6	17.8
Foremen and skilled and unskilled workers	57.9	54.6	47.7	49.9	42.5	53.1	57.1
All groups	100	100	100	100	100	100	100

Table 11 I. Percentage of Gymnas graduates with S or M (the two best results) as a final grade in the "examen artium".

Graduates	Percentage with finale grades S or M			
	1946	1951	1958	1963
Graduates all courses	51	51	53	56
Female	46	46	50	53
Male	54	54	56	59
Ordinary students <sup>x)</sup> all courses	54	52	56	58
Female	48	47	52	54
Male	58	56	60	62
Ordinary students Science courses	60	59	62	65
Female	54	56	62	64
Male	61	60	62	65
Ordinary students Arts courses	49	46	50	51
Female	47	45	49	51
Male	52	46	51	50
Private students <sup>xx)</sup> all courses	41	42	33	25
Female	39	36	32	24
Male	42	45	33	26

x) Ordinary students are students who have prepared for the examination at an authorized school.

xx) Private students are students who have prepared for the examination at an unauthorized school or on their own initiative.

Table 12 I. Percentage of Gymnas graduates with S or M as a final grade, tabulated according to sex and domiciliary region.

Region	Percentage with S or M as a final grade							
	1946		1951		1958		1963	
	Female	Male	Female	Male	Female	Male	Female	Male
Eastern Norway: Oslofjord-region, Central East, Telemark	45	52	46	51	50	56	50	56
South Coast	59	66	63	65	68	60	58	60
Western Norway	53	65	46	59	53	61	61	68
Trøndelag	38	66	48	59	49	64	61	73
North Norway	61	62	48	63	55	73	56	69
T o t a l	48	58	47	56	52	60	54	62

M A P I

Gymnas graduate incidence in 1963

Oslofjord region includes: Østfold, Akershus, Oslo, Buskerud and Vestfold.

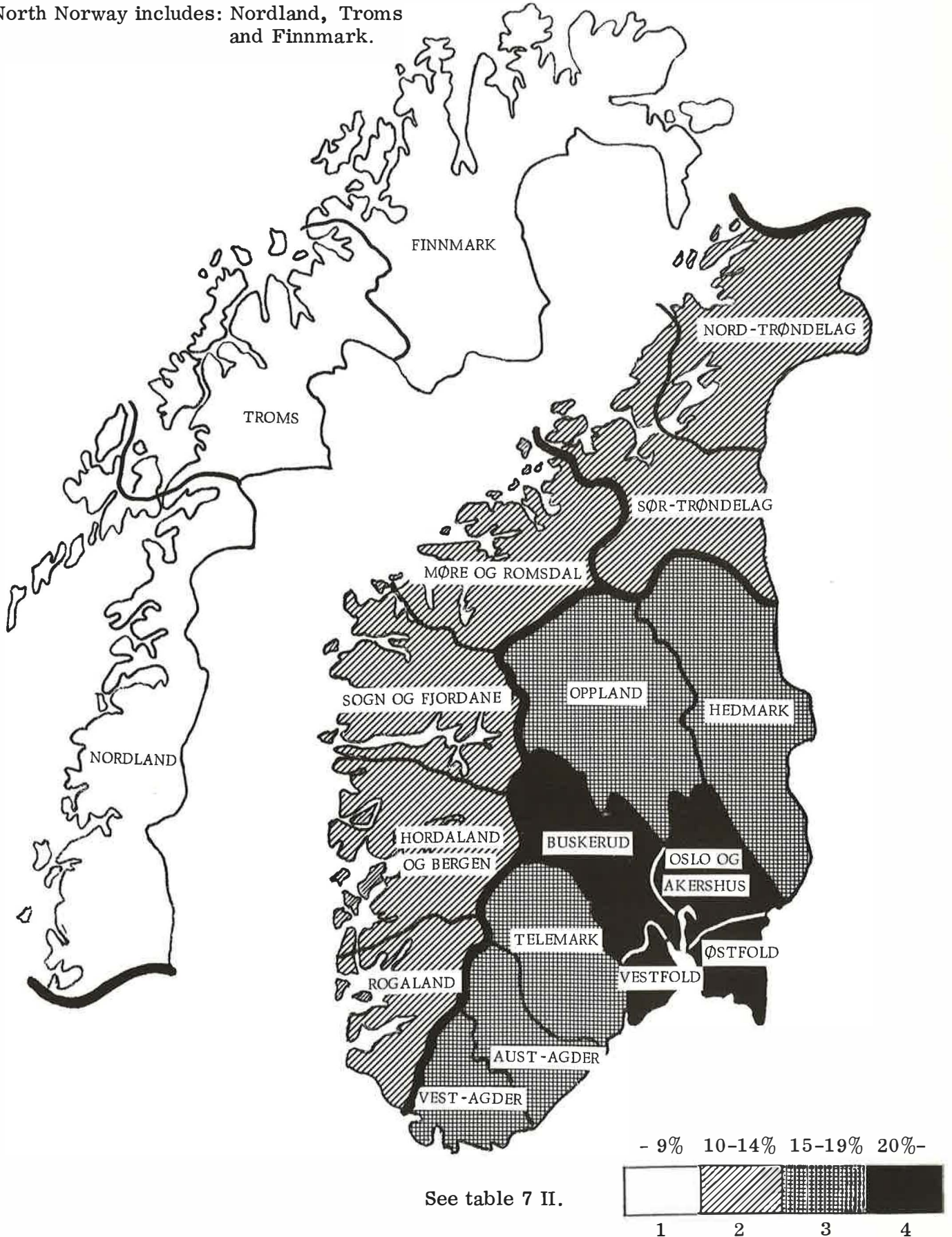
Central East includes: Hedmark and Oppland.

Telemark and South Coast includes: Telemark, Aust-Agder and Vest-Agder.

Western Norway includes: Rogaland, Hordaland, Bergen, Sogn og Fjordane and Møre og Romsdal.

Trøndelag includes: Sør-Trøndelag and Nord-Trøndelag.

North Norway includes: Nordland, Troms and Finnmark.



M A P I I

Gymnas graduate incidence in 1963

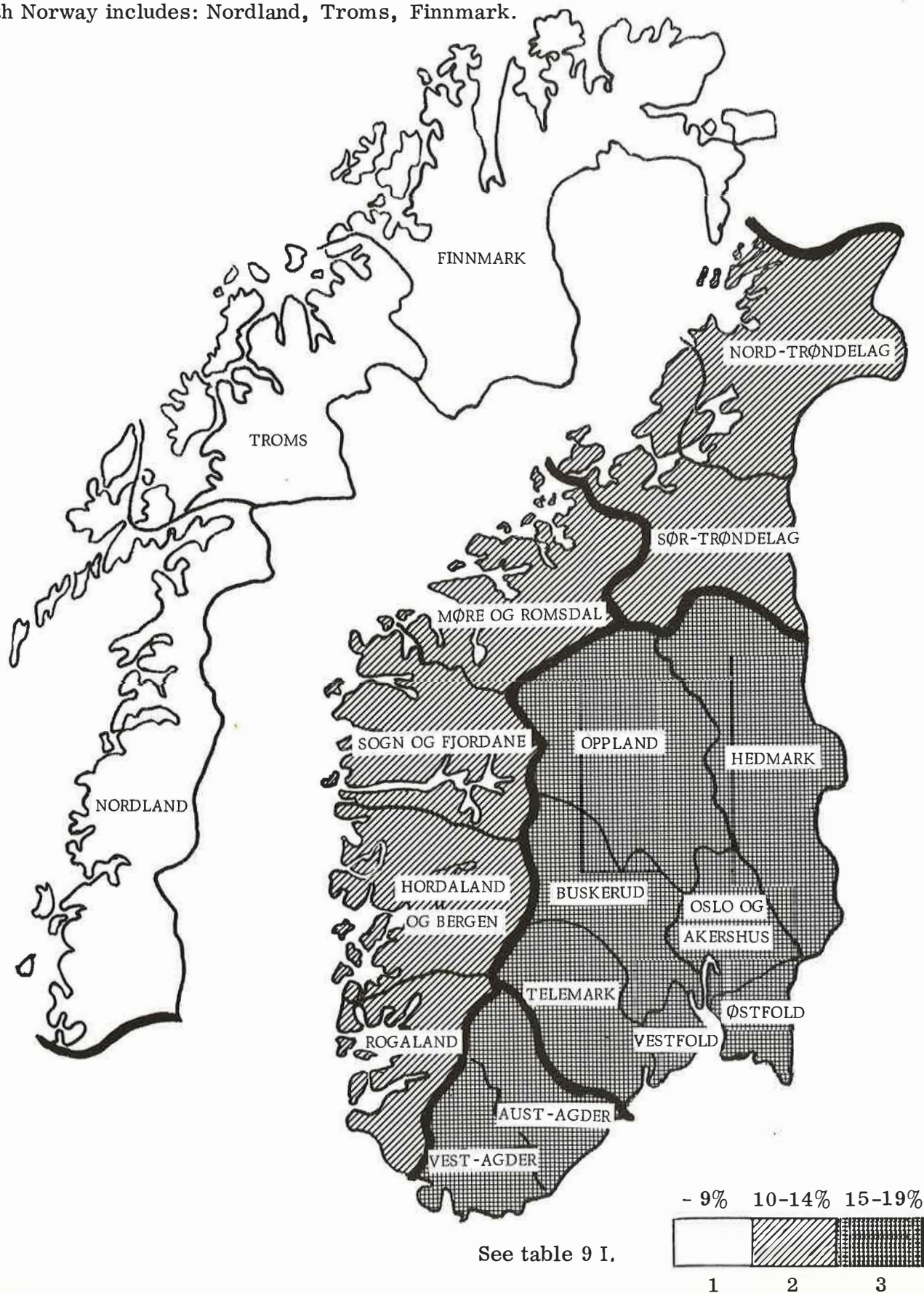
Oslofjord region, Telemark and Central East includes: Østfold, Akershus, Oslo, Buskerud, Vestfold, Telemark, Oppland, Hedmark.

South Coast includes: Aust-Agder, Vest-Agder.

Western Norway includes: Rogaland, Hordaland, Bergen, Sogn og Fjordane, Møre og Romsdal.

Trøndelag includes: Sør-Trøndelag, Nord-Trøndelag.

North Norway includes: Nordland, Troms, Finnmark.



See table 9 I.