

## HIGH ACHIEVERS IN BELGIUM: A PARTIAL ANALYSIS OF IEA SCIENCE, LITERATURE AND READING COMPREHENSION DATA

G. DE LANDSHEERE,  
A. GRISAY, AND G. HENRY

IN HIS INAUGURAL SPEECH, the Prime Minister of the Belgian government declared: "More individualization of learning at all school levels will overcome socio-cultural handicaps and allow the necessary investments for the education of the intellectual élite and of the less gifted." In this article, we examine what IEA data tell us about the situation of the gifted in Belgium.

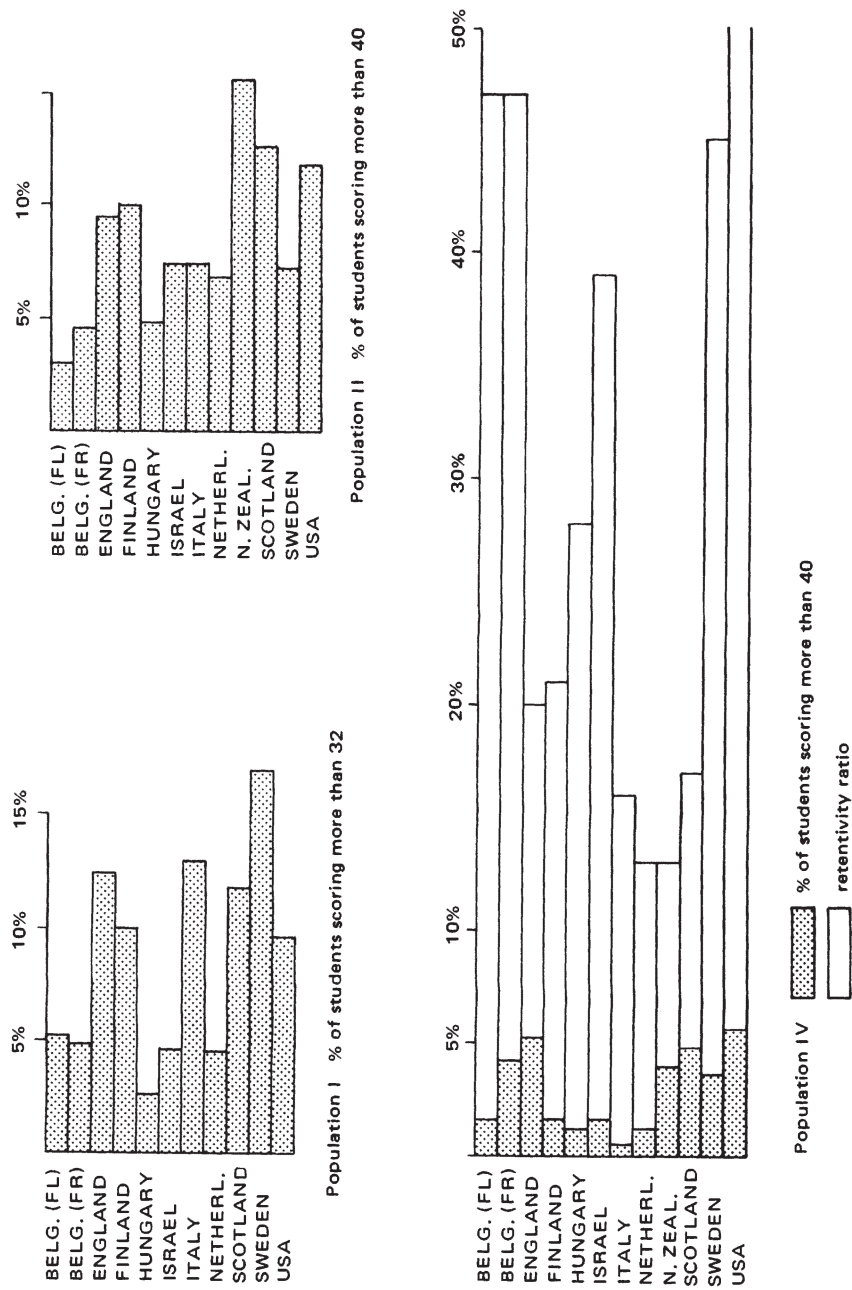
### ACHIEVEMENT IN MOTHER TONGUE

For Population I, we define high achievers as those students who score more than 32 points.<sup>1</sup> In Belgium, about 5 percent score more than 32. Many more students attain this level in other countries. In England it is 12.3 percent, Finland 10 percent, Italy 13 percent, Scotland 11.4 percent, United States 9.5 percent, and Sweden 17 percent. We could hypothesize that this low percentage in Belgium results from a large amount of school time and resources devoted to the slow learners. As a matter of fact, only 11 percent of definitely low achievers (scoring 12 or under) are found in Belgium compared to 17 percent in England, 21 percent in the United States, and 16 percent in Scotland. But countries such as Sweden and Italy with a great proportion of high achievers have at the same time the smallest percentage of low achievers in reading (10 percent and 7 percent respectively). It should be pointed out, however, that the Italian sample is not fully representative since low performing students were omitted. Nevertheless, we can conclude that both lowering the failures and having high achievement for gifted students is possible at the same time.

For Population II, a 40 point cut-off was chosen for the high achievement area in reading comprehension. Only 3.5 percent attain this level in Belgium, while England reaches 9.3 percent, Finland 10 percent, Israel and Italy 7.4 percent, Sweden 7.2 percent, United States 11.8 percent, Scotland 12.6 percent, and New Zealand being first with 15.6 percent. However, the Belgian Population II means (French and Flemish) do not considerably differ from the means in other countries. A glance at the percentages of low achievers shows again that a high percentage of high achievers does not imply necessarily a corresponding high percentage of low achievers. The very small percentage of 14 and 15-year-old low achievers in the French-speaking part of Belgium is probably explained by the curriculum devoted, in all types of schools, to mother tongue teaching.

<sup>1</sup> All the scores are corrected for guessing.

FIGURE 1  
READING COMPREHENSION

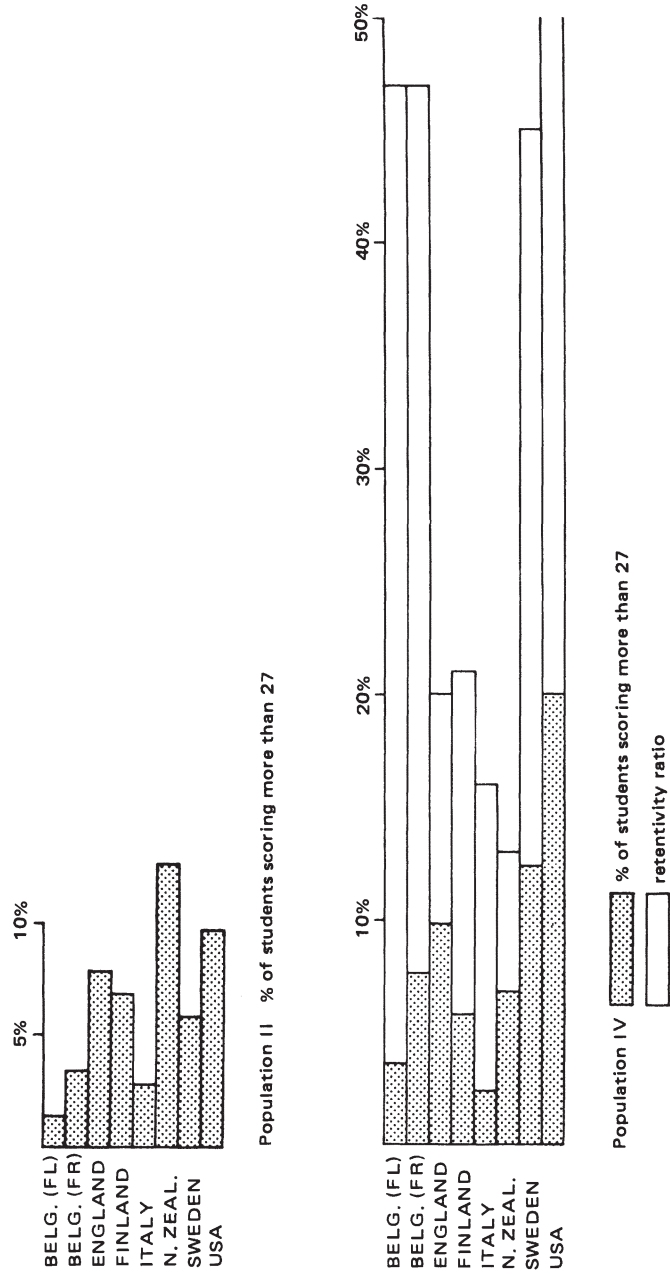


Although fewer countries participated in the international survey on literature, the data available lead to the same conclusions. About 2.5 percent of the Belgian students score more than a cut-off score of 27. A much higher proportion of the corresponding population attains this level in New Zealand (12.5 percent), United States (9.7 percent), England (7.9 percent), Finland (6.8 percent), and Sweden (5.6 percent). Here again, high and low achievements are uncorrelated. Figures 1 and 2 present the percentage of high achievers for reading comprehension and literature respectively. Table 1 presents the percentage of low achievers in all three subject areas.

The comparisons between countries for Population IV prove much more difficult because of the different levels of retentivity existing among countries participating in the survey. It is impossible to compare across nations percentages of the samples reaching a definite achievement level if we do not relate these percentages to the part of the age group still in school. To overcome this difficulty, we make the assumption that the selective school systems are efficient enough to make sure that a very small proportion of the drop-outs would have been high achievers. Given this, we can compute the percentage of high achievers in the whole age group through multiplying the observed percentage of high achievers in the sample by the retentivity ratio in the country under consideration. For the reading comprehension tests, the percentages of students scoring more than 40 points remain very stable across a first group of countries: United States 5.7 percent, England 5.2 percent, Scotland 4.8 percent, New Zealand 4.1 percent, Belgium (French) 4.1 percent, and Sweden 3.6 percent. Fewer students achieve high scores in another group of countries: Belgium (Flemish) 1.6 percent, Finland 1.6 percent, Israel 1.6 percent, Netherlands 1.1 percent, Hungary 1.1 percent and Italy 0.4 percent.

Most countries producing many high achieving students in Population II have very low retentivity levels in Population IV. As a consequence, many high achievers in Population II are likely to drop-out before reaching the age of Population IV. For instance, Population II in New Zealand comprises 15.6 percent of high achievers in mother tongue but only 13 percent of the *whole* age group is still in school at the Population IV level. Conversely, countries such as the United States, Sweden and Belgium offer a larger proportion of Population II students a chance to become high achievers in Population IV, even if they are not high achievers in Population II. The same phenomenon is especially striking for literature. The literature test was the same for Populations II and IV; therefore, the percentages of high achievers are comparable. Among the four selective countries participating in the literature study, three have a *lower* percentage of high achievers in Population IV than in Population II: Finland 5.8 percent in Population IV vs. 6.8 percent in Population II, New Zealand 6.7 percent vs. 12.5 percent, Italy 2.3 percent vs. 2.8 percent. Only in England do we observe a somewhat higher percentage of high achievers: 9.8 percent vs. 7.9 percent. For the retentive

FIGURE 2  
LITERATURE



systems we notice a very important increase of the percentages of high achievers: United States 19.9 percent vs. 9.7 percent, Sweden 12.4 percent vs. 5.6 percent. Some progress is also noticeable in French and Flemish Belgium: 7.6 percent vs. 3.4 percent and 3.6 percent vs. 1.3 percent. Nevertheless, compared with the other retentive countries, the Belgian system still does not produce enough high achievers.

#### ACHIEVEMENT IN SCIENCE

In Population I we define high achievers as those students who score more than 24, but the percentages of high achievers definitely vary from country to country. Some countries score high: Japan 27 percent, United States 18 percent, Italy 16 percent, Finland 14 percent, and Sweden 12.4 percent. Some other countries (England, Hungary, Flemish Belgium) produce about 10 percent of high achievers, whereas, in return, the percentage is very low (2 percent) in French-speaking Belgium.<sup>2</sup> This proportion is much lower than in all of the other countries including those which obtain about the same population means (Netherlands 7.2 percent, Scotland 7.3 percent and Germany 5.1 percent). Nevertheless, in Population I, a deficit exists only for the group of high achievers. For instance, the proportion of low achievers (scoring 6 or less) in French-speaking Belgium (9.6 percent) is not higher in any way than the proportion existing in English-speaking countries (England 10.9 percent, Scotland 14.1 percent and United States 10 percent).

In Population II only 3.2 percent of the Belgian Flemish students, 2.9 percent of the Dutch and 1.2 percent of the French-speaking Belgians achieve high (scoring more than 42). A large gap exists between these countries and most of the other developed countries: Australia 15.2 percent, England 12 percent, Hungary 22 percent, Japan 29.5 percent, New Zealand 13.4 percent, and Scotland 12 percent. Here, the problem seems to be very serious. Not only is the high achieving group very small, but when a larger group is considered (those students scoring more than 36) the whole situation remains unchanged. In Japan 46.5 percent of the age group belong to the top or over-average groups, whereas, in Belgium it is only 12.5 percent of the Flemish and 4.7 percent of the French-speaking students. All other countries achieve better than Belgium (Hungary 38.6 percent; England, Germany, New Zealand, Scotland, Sweden and United States roughly 20 percent). Again, the percentage of the low achievers (scoring 18 or less) is uncorrelated with the percentage of high achievers. Belgium (French) shows a very large proportion of low achievers (26.4 percent); but the situation is similar in England (21 percent) and Scotland (20.8 percent). Surprisingly, the percent-

<sup>2</sup> Flemish-speaking Belgium has higher results, but as indicated in *Science Education in Nineteen Countries*, L. C. Comber and John P. Keeves, (Stockholm: Almqvist and Wiksell 1973), p. 48, the sample for Population I is biased in that it only included 5th grade students. A similar problem exists in Italy.

HIGH ACHIEVERS IN BELGIUM

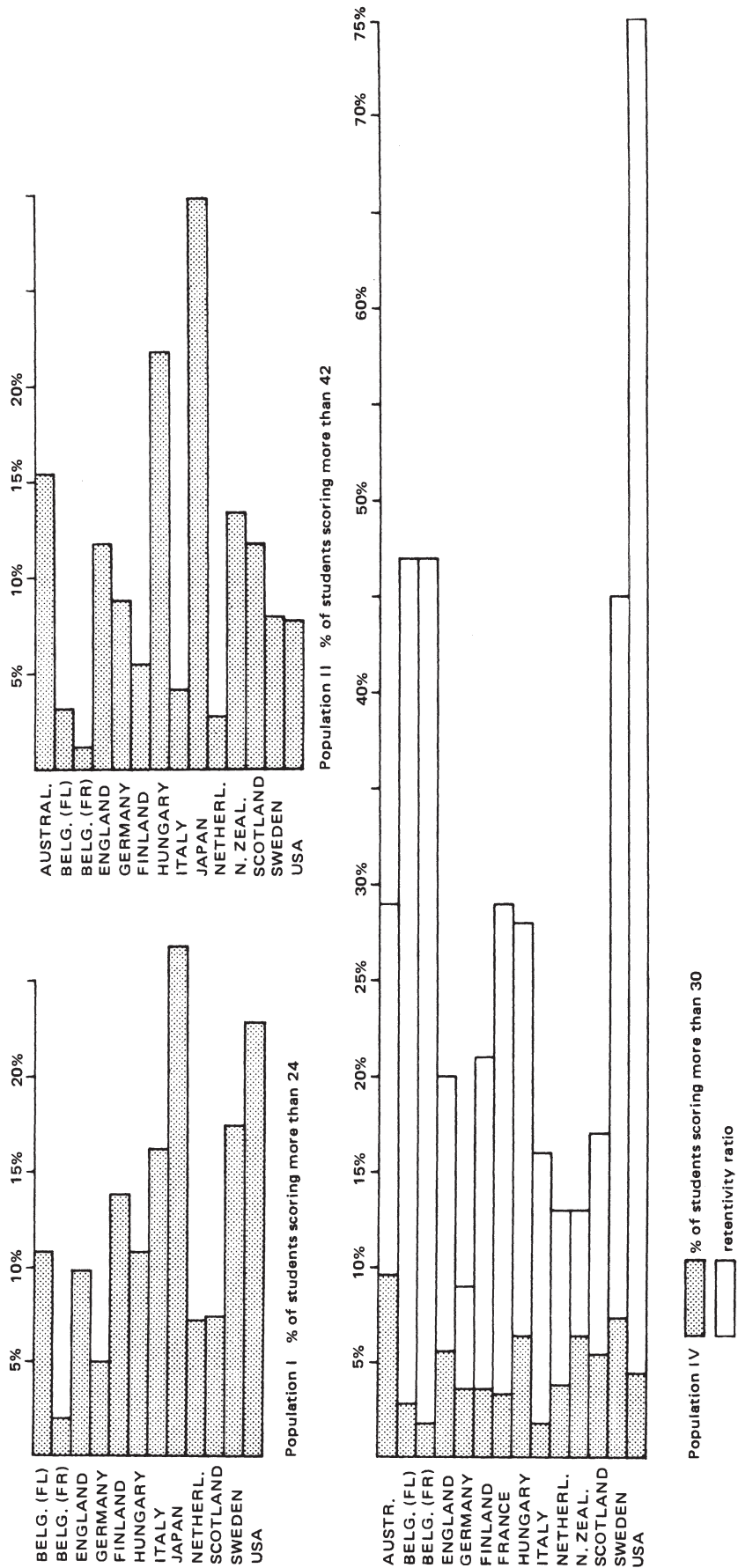
TABLE 1: PERCENTAGE OF LOW-ACHIEVING STUDENTS IN POPULATIONS I AND II

<u>Reading Comprehension</u>		
	<u>Population I (<math>\leq 12</math>)</u>	<u>Population II (<math>\leq 16</math>)</u>
Belgium (FL)	11.7	6.1
Belgium (FR)	10.5	2.3
England	17.0	9.5
Finland	13.9	6.7
Hungary	23.9	5.2
Israel	28.3	16.7
Italy	7.0	2.7
Netherlands	12.3	6.3
New Zealand	-	5.7
Scotland	16.0	7.1
Sweden	10.0	7.7
USA	21.2	7.6
<u>Literature</u>		
		<u>Population II (<math>\leq 9</math>)</u>
Belgium (FL)		6.6
Belgium (FR)		5.5
England		8.2
Finland		3.9
Italy		2.8
New Zealand		4.4
Sweden		7.5
USA		10.2
<u>Science</u>		
	<u>Population I (<math>\leq 6</math>)</u>	<u>Population II (<math>\leq 18</math>)</u>
Australia	-	11.9
Belgium (FL)	3.6	8.1
Belgium (FR)	9.6	26.4
England	10.9	21.0
Germany	8.3	7.9
Finland	5.9	13.1
Hungary	6.7	3.9
Italy	8.3	18.1
Japan	2.5	7.0
Netherlands	7.2	22.2
New Zealand	-	11.2
Scotland	14.1	20.8
Sweden	3.3	13.2
USA	10.0	13.9

age of low achievers in Flemish Belgium (8.1 percent) is as low as in Germany (7.9 percent) and Japan (7 percent). In Population II, the results indicate clearly that the whole Belgian school system, when compared with other countries, is underachieving in science, and, in particular, this applies to the top and above-average students.

In Population IV, the retentivity rates have been taken into account when computing the percentages of high achievers in the *whole age group*. As we have

FIGURE 3  
SCIENCE





#### HIGH ACHIEVERS IN BELGIUM

observed for the mother tongue, the differences between high achievers across countries prove to be less important for Population IV than for Population II. However, it is still worthy of note that lowest percentages are for Belgium (French 1.9 percent and Flemish 2.9 percent) and Italy (1.5 percent). Bearing in mind the retentivity rates (given in the figures) Australia (9.7 percent), Sweden (7.9 percent), Scotland (5.4 percent), England (5.6 percent), Hungary (6.4 percent), and New Zealand (6.3 percent) achieve high. Figure 3 presents the percentage of high achievers in science and Table 1 includes the percentage of low achievers.

#### CONCLUSIONS

All the data indicate a low achievement in Belgium for the gifted group, at all school levels and for the different school subjects. This deficit is especially clear if we compare Belgian students with English-speaking and Scandinavian students. The underachievement of the gifted is particularly marked in Populations I and II. The situation is better for Population IV. In this case, we can assume that improvement is not caused by specific action of the school in favor of the gifted. Undoubtedly, this improvement is the result of the high retentivity of the system.

The IEA survey took place during the school years 1969-1970, before new secondary school structures and methods were introduced in Belgium. None of the students tested followed the new curriculum. So, to believe that the Belgian situation is desperate would be a mistake. Also on the positive side, our country has a high retentivity rate and the flexibility of the new secondary education curriculum. On the other hand, the IEA data do indicate that insufficient opportunities are offered to the gifted, and, if our educational authorities understand the message, IEA time and effort will not have been wasted.