

## **When being smart is not enough: institutional and social access barriers to upper secondary education and their consequences on successful labour market entry. The case of Switzerland**

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### ***Introduction/Summary***

This paper is based on the results of PISA 2000<sup>1</sup> and TREE<sup>2</sup>, a longitudinal survey being carried out in Switzerland on approx. 6'000 youth of the Swiss PISA 2000 sample. The paper takes the mediocre Swiss performance within PISA (which caused quite a shock throughout the country) as a starting point. It shows that a high degree of social inequality not only contributes to modest competency levels at the end of compulsory school (as PISA has stated). It also seriously affects post-compulsory education and training, as first results of TREE reveal. Despite a long standing equal opportunities rhetoric in Switzerland, the country's educational system has thus far not been able to compensate for social inequalities among its „users“. It is one of the main concerns of this paper to identify the structural shortcomings of the system which tend to reinforce those inequalities.

### ***The „PISA“ shock in Switzerland***

The „PISA shock“ has been quite profound in Switzerland. The country, proud of its long standing tradition of investing in its „grey matter“ (a well formed and qualified labour force) and running one of the world's most expensive educational systems, had shown only average results in PISA 2000's student assessments.

According to PISA, Switzerland is ranking number 16 (out of 32 participating countries) in terms of reading literacy competencies at the end of compulsory school (at age 15). That is a hard blow for a country that is used to rank among the world's top ten when it comes to economic performance and competitiveness.

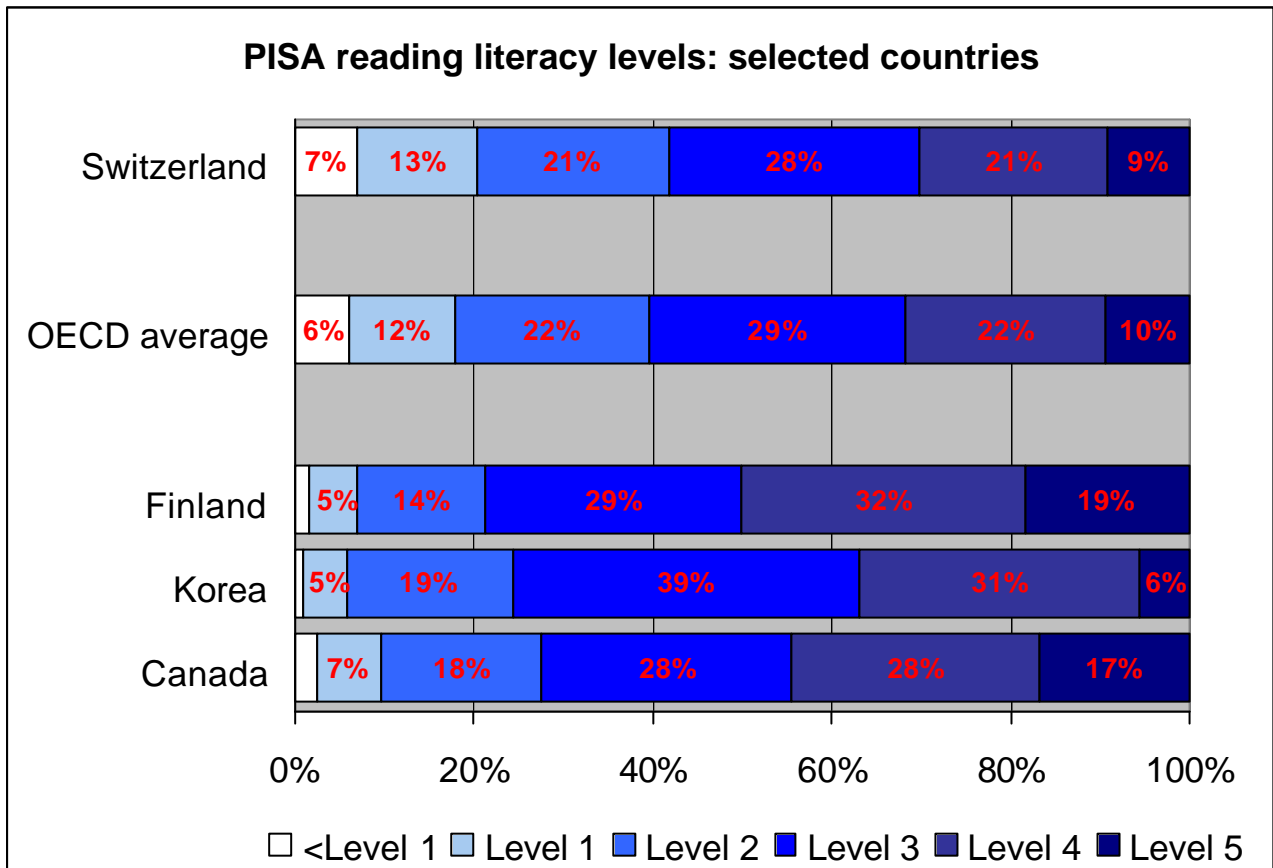
Graph 1 gives a first idea of Switzerland's position within the OECD context. In short, the country has, compared to the OECD average and to the results of the top scoring countries (Finland, Korea und Canada), too little high achievers and too many low and very low achievers. Shortly before leaving compulsory school, one out of five Swiss students does not score beyond PISA reading literacy level 1. Students at this proficiency level *„are capable of completing only the least complex reading tasks [...] such as locating a single piece of information, identifying the main theme of a text or making a simple connection with everyday knowledge“* (OECD/PISA 2001:48). The PISA literacy concept assumes that

<sup>1</sup> Programme for International Student Assessment

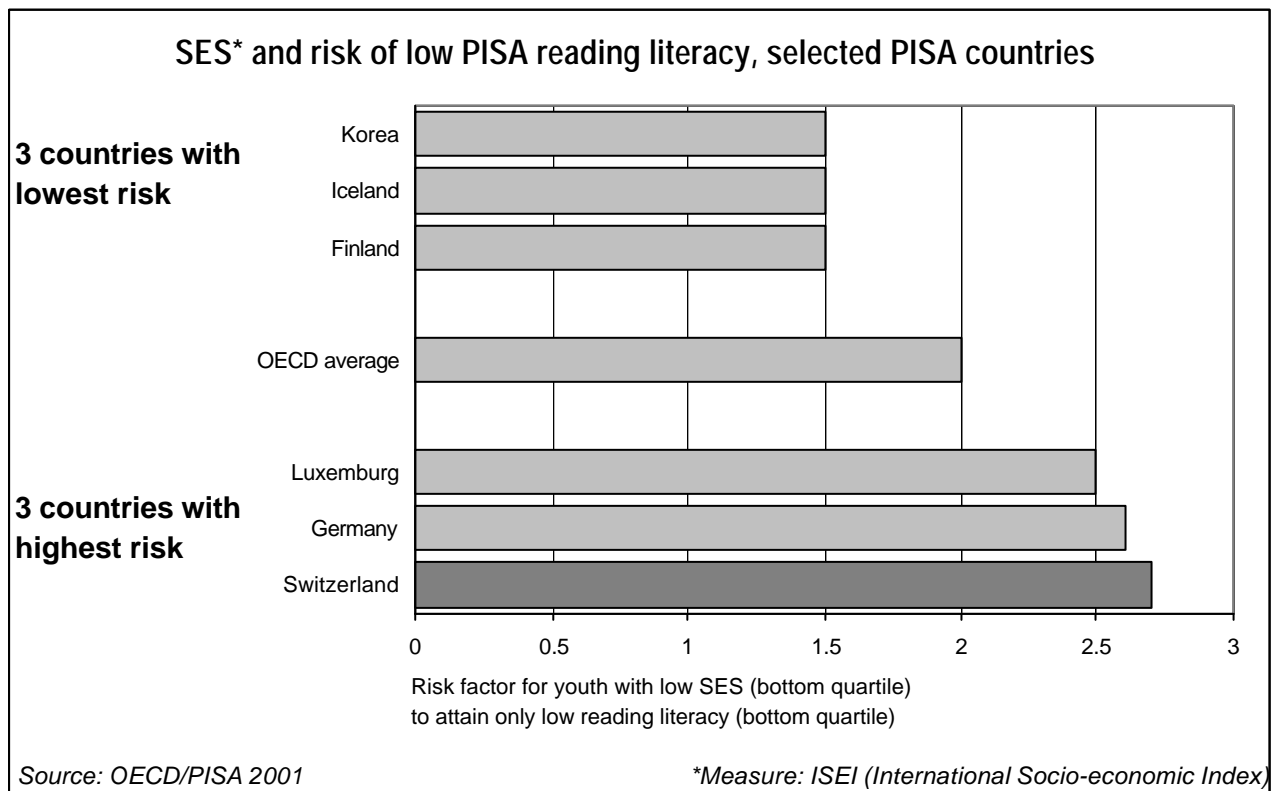
<sup>2</sup> Transitions from Education to Employment

students at this level do not fulfill the requirements of „reading for learning“ and are thus seriously handicapped for any further education and training.

**Graph 1**



**Graph 2**



Student achievement and social background correlate in virtually all PISA test countries. OECD-wide, compared to the total student population, a student with low SES<sup>3</sup> will be twice as often among the low achievers (bottom quartile of PISA reading literacy score). However, as Graph 2 reveals, there is considerable variation between countries. While in some countries, the mentioned risk factor does not exceed 1.5 (Korea, Iceland, Finland), Switzerland (along with Germany) marks the „top“ rank with a respective risk factor exceeding 2.5. The fact that two out of the three countries (Finland and Korea) with the lowest risk factors rank among the top three in terms of average reading literacy indicates that relative social equality and high performance are not mutually exclusive.

### ***The Swiss educational system(s) and transition from school to work***

Switzerland's educational system (see also schematic overview in appendix 1) has a few peculiarities that are important to better understand transition from school to work.

- An important feature is its de-centralized organization: education in Switzerland is basically run on the level of its 26 cantons (some of them with less than 3'000 students enrolled on all levels of education); primary school is even to a large part under communal jurisdiction. The federal level has its say only on upper secondary and tertiary levels. On national level, Switzerland does not even have a Ministry of Education.
- Swiss education and training takes place in four languages: German, French, Italian and Romansh, an idiom shared by only a few thousand people in the southeastern part of the country. The cultural differences between the language regions tend accentuate the de-centralization of the educational system(s).
- Lower secondary level education is characterized, in most cantons, by a highly segregated, selective organization. After five to seven years of primary school, most students are assigned - usually on grounds of their previous marks and/or selection exams - to one of several strongly hierarchized programmes on lower secondary level. There are basically two types of programmes: one type is for pupils deemed to fulfill „basic“ academic requirements, the other for those meeting „extended“ academic requirements.<sup>4</sup> Permeability between programmes and reversibility of the selection is usually very low.
- The upper secondary system features a comparably low proportion of general education (only about 25%). Most of youth enrolled in general education programmes are bound for academic, university pathways on tertiary level.
- Another peculiarity of the Swiss educational system is a relatively high percentage (close to ¼) of youth that does not enter upper secondary education and training directly, but indirectly via so called temporary solutions. These are essentially all forms of preparatory activities for entering a certifying upper secondary programme, usually up to one year's duration.
- Close to two thirds of every cohort of compulsory school leavers will enter vocational education and training (VET), the large majority of them in the form of the "dual system" also known in Germany and Austria: the enterprise-based apprenticeship. They will sign an apprenticeship contract with the firm that will train them, and they will spend about two thirds of their time in practical vocational training in the firm and about

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<sup>3</sup> Socio-economic status

<sup>4</sup> Some cantons run four to five different programmes

one third in (vocational) school. For a number of reasons, this particular feature of the Swiss educational system strongly affects the nature of transition from school to work:

Firstly, apprentices are both learning and working. Much like their employed colleagues, they are recruited and hired by their training firm, they receive a salary (though a modest one), and they will usually develop a strong sense of being part of „their“ firm. Thus, they have a „hybrid“ status, belonging partly to the educational system, partly to the labour market.

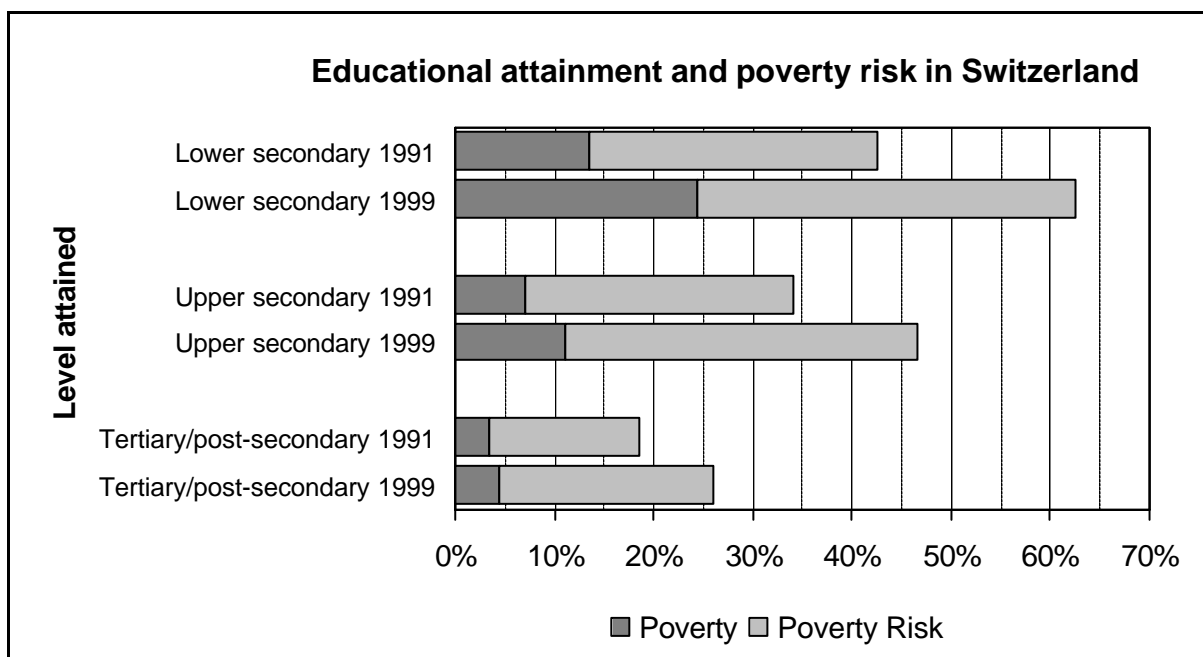
Secondly, allocation of apprenticeships is subject to market conditions much like those on the labour market. Presently, the Swiss apprenticeship market is characterized by a limited supply, as the willingness of enterprises to train apprentices has strongly decreased over the last decades. As a result, there is fierce competition on the demand side.

Thirdly, for a majority of young Swiss, obtaining an apprenticeship training place is equivalent to gaining access to post-compulsory education and training *at all*. Unlike other countries, Switzerland provides no right or guarantee to access upper secondary education or training.

***Access to upper secondary education and training: a crucial threshold in the transition process***

Not completing an upper secondary education or training represents quite a risk in Switzerland, as Graph 3 highlights. In 1999, poverty risk (factual or potential) for the population not having completed upper secondary education was over 60%, up from 43% in 1991 (*STREULI & BAUER 2001*). Throughout the 1990ies, Switzerland has been the OECD country experiencing the most marked decrease of low and unqualified labour force (*OECD/CERI 2001*).

**Graph 3**



This is certainly one of the factors contributing to the fact that access to and completion of upper secondary education has become an almost universal norm throughout the past two decades. Curiously enough, until recently, little to nothing has been known about how

(successfully) young people in Switzerland strive to comply with this social norm. It is thanks to TREE (Transitions from Education to Employment), a longitudinal survey following up approx. 6'000 young men and women having participated in PISA 2000, that we start to know better. TREE surveys the Swiss PISA 2000 sample annually over a period of at least 7 years (see project description in appendix 2, for further detail see also [www.tree-ch.ch](http://www.tree-ch.ch)). To date, data for panels 1 and 2 (2001 und 2002) are available.<sup>5</sup> With the TREE data, it is possible for the first time in Switzerland to observe transitions from school to work longitudinally on the base of a sample that is representative both nationally and for the three main language regions.

Graph 4 shows the main pathways of the cohort having left compulsory school in 2000. At first glance, upper secondary enrollment does indeed seem to be an almost universal phenomenon. At both points of observation (2001 and 2002, i.e. 1 and 2 years after leaving compulsory education), the percentage of young men and women not enrolled in any kind of upper secondary education is marginal, not exceeding 5%. The graph also reveals that vocational education and training is clearly the dominant type of upper secondary education, involving almost half of the cohort in 2001, and almost two thirds in 2002. Thirdly, the flow chart documents the comparatively low percentage of youth enrolling in general education programmes on upper secondary level. It also highlights another peculiarity of the Swiss educational system, namely the substantial percentage of youth which does not gain direct access to upper secondary education and training: during the first year following compulsory school, almost one fourth of the cohort is engaged in "temporary alternatives", essentially all forms of preparatory activities for entering a certifying upper secondary programme. The majority of this group will be enrolled in vocational education and training one year later (yellow to red arrow), but close to 30% of them will still not have gained access to any kind of certifying upper secondary programme even two years later (yellow to yellow and yellow to blue arrow).

In summary, it can be said that close to 3 out of 4 Swiss compulsory school leavers manage to gain immediate access to a certifying upper secondary programme. For the remaining fourth, things do not run as smoothly as this. The majority of them engages in "preparatory" activities, hoping to improve their chances of access by doing so.

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<sup>5</sup> The survey for panel 3 (2003) has just been completed, but data are not available yet.

# Graph 4

## Upper secondary education and training pathways in the first two years following compulsory school

School leavers of 2000 all over Switzerland



Estimated N=100% = 75'000-80'000

The transitions represented always concern 2% or more of the population.

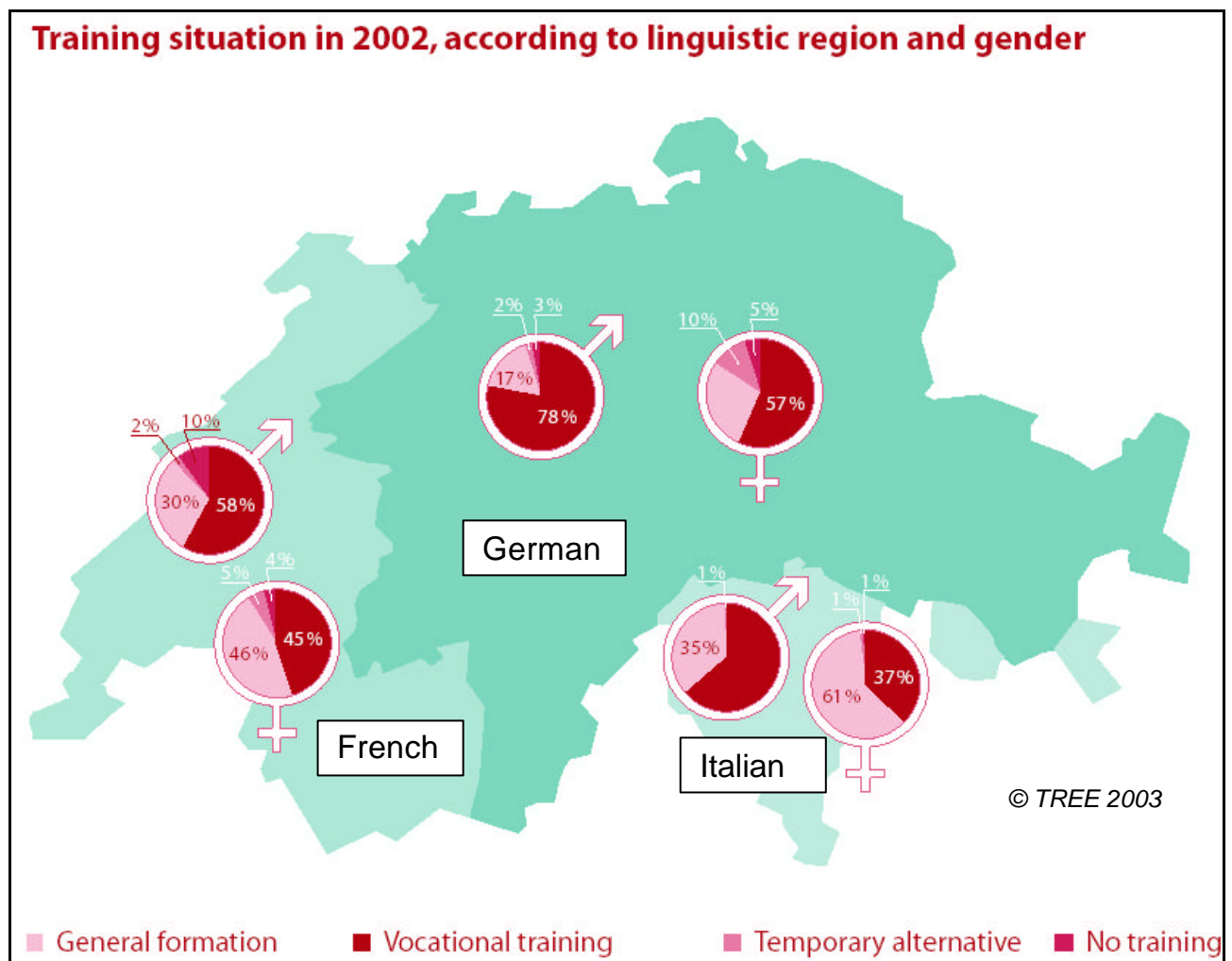
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## ***Institutional and socio-demographic factors affecting upper secondary enrollment***

This general picture levels out substantial disparities related to a number of institutional and socio-demographic factors. First of all, upper secondary education offer varies greatly by linguistic regions. In German speaking Switzerland, two years after leaving compulsory school, over two thirds of youth is enrolled in VET, compared to just over 50% in the French and Italian speaking parts of the country. Inversely, only 20% of the German speaking youth are enrolled in general education. In French and Italian speaking Switzerland, that percentage is twice as high. This variation is not to be explained by individual preferences on the „demand“ side. It is a structural factor on the "supply“ side of the system, reflecting cultural affinities of every linguistic region to the neighbouring countries of the same language.

A second socio-spatial factor is the degree of urbanization. Upper secondary education "supply" varies greatly between rural and urban areas. Youth living in urban areas will substantially more often engage in general education (30% vs. 18% in rural areas). Rural youth inversely is more frequently engaged in VET (73%) than urban youth (58%).

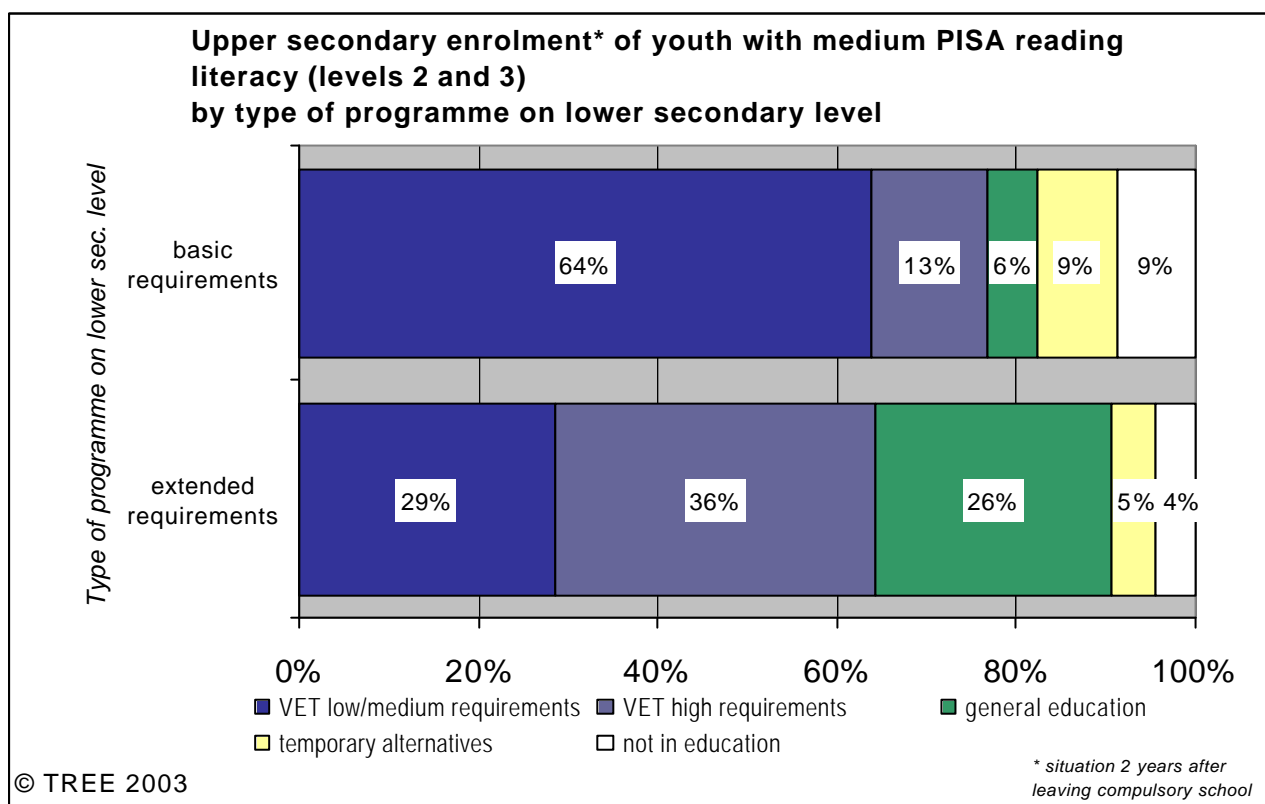
**Graph 5**



So when juxtaposing gender and linguistic region (see Graph 5), we have completely different upper secondary enrollment patterns for, say, women from the Italian part of the country, who in almost two out of three cases (61%) will enroll in general education; and on the other hand for men from the German speaking part who will enroll - in almost four out of five cases (78%) - in vocational education and training.

A third factor is gender. VET in particular reflects - or rather anticipates the strong gender-based segmentation to be observed on the Swiss labour market. Thus, VET is largely dominated by male youth in the fields of industrial production, handicraft, technical professions and ICT, while young women's VET participation concentrates mostly in the commercial and health sectors.

**Graph 6**



As the results of the TREE panel data clearly confirm, one of the crucial factors influencing upper secondary pathways is the type of lower secondary programme (see also short description p. 5). Whatever their academic performance, the upper secondary options for students having been enrolled in lower secondary programmes with "basic requirements" will be severely restricted. Graph 6 illustrates these restrictions by taking into account only students with medium PISA reading literacy scores (levels 2+3). The graph highlights that "medium" students from lower secondary programmes with "basic" requirements are largely over-represented in low/medium level VET (64%) and among those not in education or in temporary alternatives (9% each). Contrariwise, their counterparts from programmes with "extended requirements" show the opposite pattern: they are over-represented in high level VET (36%) and general education programmes on upper secondary level.

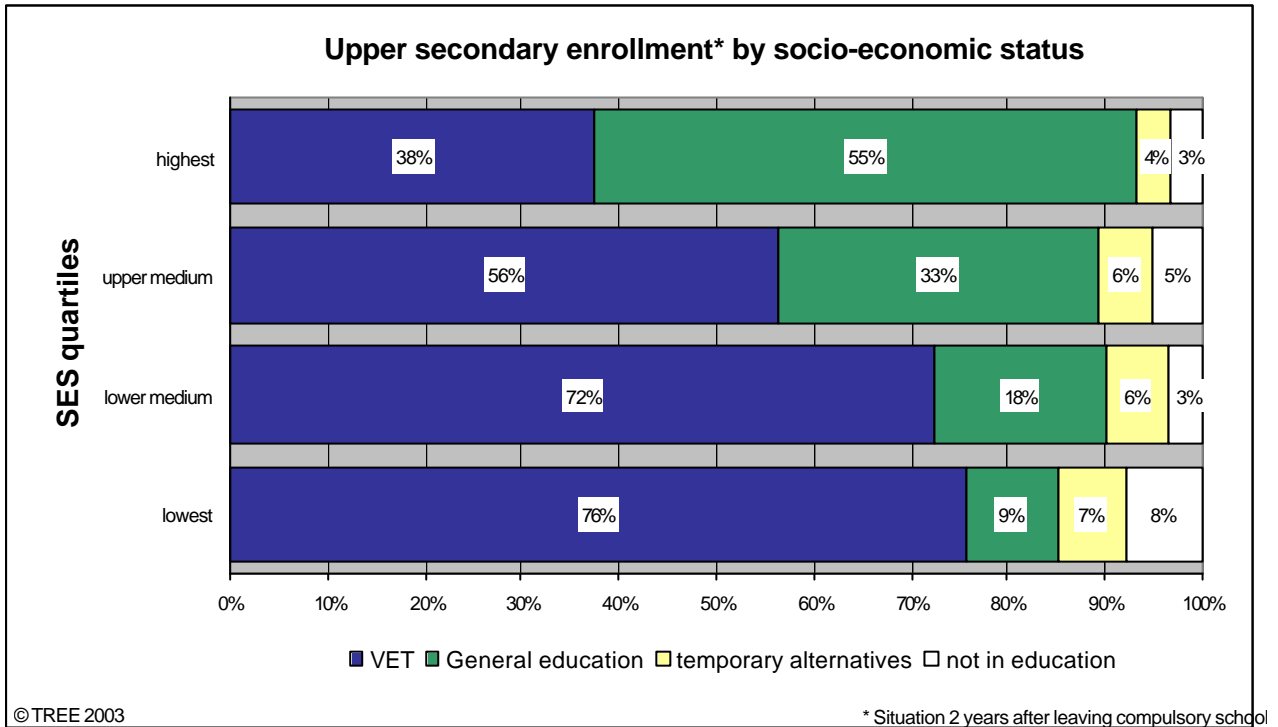
As Graph 7 illustrates, SES in Switzerland not only correlates strongly with student performance at the end of compulsory school as measured by PISA (see Graph 2, p. 4), but also with type of post-compulsory education youths will enroll in. There is an almost linear positive correlation between SES and enrollment in general education, and inversely a



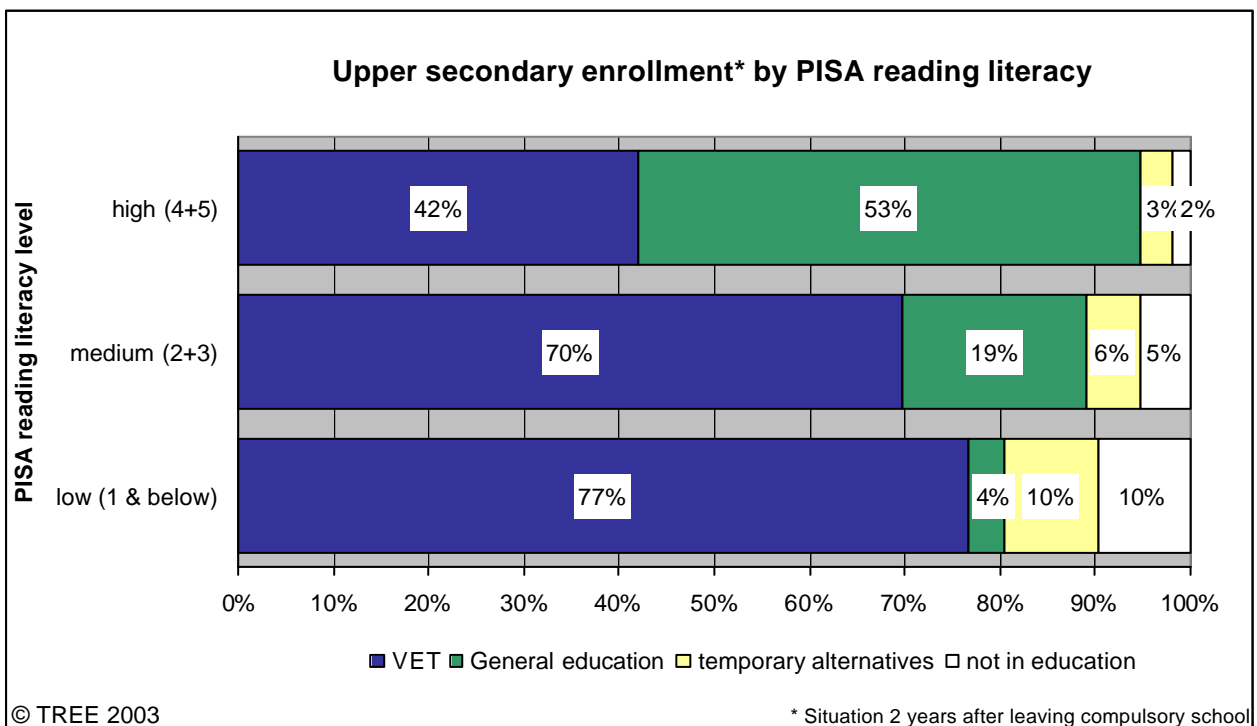
negative one with enrollment in VET and non-enrollment in any certifying upper secondary education or training.

A similar pattern emerges when comparing post-compulsory pathways of home born and foreign born youths. Foreign born youths show much the same enrollment figures as youths with low SES family background. This does not come as a surprise, as immigration in Switzerland is traditionally to a large part low SES immigration.

**Graph 7**



**Graph 8**



Finally, as Graph 8 reveals, student performance does matter in regard to access to given types of post-compulsory education and training. There is a very strong positive correlation between reading literacy (as measured by PISA) and enrollment in general education, and inversely a negative one with enrollment in VET and non-enrollment in any certifying upper secondary education or training.

### ***Results of an integrated model***

As the introduced institutional and socio-demographic factors interact with one another in many ways, various integrated models were run to identify their influence while controlling for all the other variables in the model.

**Table 1**

#### **Logistic regression model for predicting non-enrollment in education or training 2 years after completing compulsory school**

*Variables in the model:* sex, type of lower secondary programme, PISA reading literacy, SES, migration status, urbanization

*Category of reference:* general education

| <b>Model variable</b>                             | <b>Reference category within model variable</b> | <b>"risk" category</b>       | <b>sig.</b>             | <b>odds ratio (approx.)</b> |
|---|---|------------------------------|-------------------------|-----------------------------|
| <b>Type of programme on lower secondary level</b> | extended requirements                           | basic requirements           | 0.000                   | <b>15</b>                   |
|   |   | high (levels 4+5)            | low (level 1 and below) | 0.000                       |
| <b>PISA Reading literacy</b>                      | high (levels 4+5)                               | medium (levels 2+3)          | 0.000                   | <b>5</b>                    |
|   |   | <b>Socio-economic status</b> | highest quartile        | lowest quartile             |
|   | lower middle quartile                           |                              | 0.000                   | <b>3</b>                    |
|   | upper middle quartile                           |                              | 0.009                   | <b>2</b>                    |
| <b>Sex</b>  | female  | male                         | 0.000                   | <b>2</b>                    |

*Not significant: Urbanization and migration status*

**Nagelkerke Pseudo R<sup>2</sup> 0.47**  
*(for entire model, including all other types of upper secondary enrolment)*

**Example of interpretation:**

*Compared to those enrolled in general education and controlling for all the other variables in the model, having been enrolled in lower secondary programmes with "basic requirements" will increase the risk of not being enrolled in upper secondary education or training by the factor 15.*

Table 1 shows excerpt results of a multinomial logistic regression model including the factors introduced above as independent variables, and the educational status 2 years after completion of compulsory school as the dependent variable. The excerpt results focus on the risk of not being in education or training at all, as compared to being enrolled in any kind of upper secondary general education programme.<sup>6</sup> The overall model explains almost 50% of the individual differences in terms of upper secondary pathways (Nagelkerke Pseudo R<sup>2</sup> = .47).

As the table reveals, having been enrolled in "basic" lower secondary programmes tremendously increases the risk of not being enrolled in upper secondary education and training, by a factor of 15 (all else being equal). The same is true for (very) low reading literacy. Medium reading literacy still constitutes a risk factor of 5. Socio-economic status

<sup>6</sup> Figures for all other types of upper secondary programmes (i.e. VET, temporary alternatives) were also calculated, but are not displayed in the table.

also strongly affects the chance of being or not being enrolled in post-compulsory education, by a factor between 2 and 7 depending on the SES quartile. Finally, compared to young women, male youth takes (*ceteris paribus*) double the risk of non-enrollment.

Interestingly enough, urbanization and migration status have no statistically significant impact on the risk of not being enrolled in upper secondary education or training. They do matter, however, for other categories of educational status, particularly in the field of VET.

### ***Discussion***

The first exploratory analyses of the TREE data show that structural, systemic factors play a heavy role when it comes to determining the chances a given individual has to access a given type of post-compulsory education. First, the disparities by language region and degree of urbanization reflect an uneven distribution of educational offer, due to a strongly segmented, de-centralized system organization. Second, despite a political rhetoric emphasizing equity and integration, Switzerland has one of the most serious equity problems of all OECD countries. Social background not only strongly determines the weight and quality of youth's „academic luggage“ at the end of compulsory school, as PISA has made clear. It also seriously affects the chances to access a qualifying, certifying upper secondary education. Maybe the most worrisome result of the pathway analyses carried out so far is the extent to which the selectivity of the lower secondary system tends to reinforce the already strong effect of social background. Finally, student performance does matter in regard to chances of access to post-compulsory education and training. However, given the tremendous weight of the analyzed structural, systemic factors, being smart in Switzerland may be a necessary, but by far not a sufficient condition for successful transition from school to work.

### ***Bibliography***

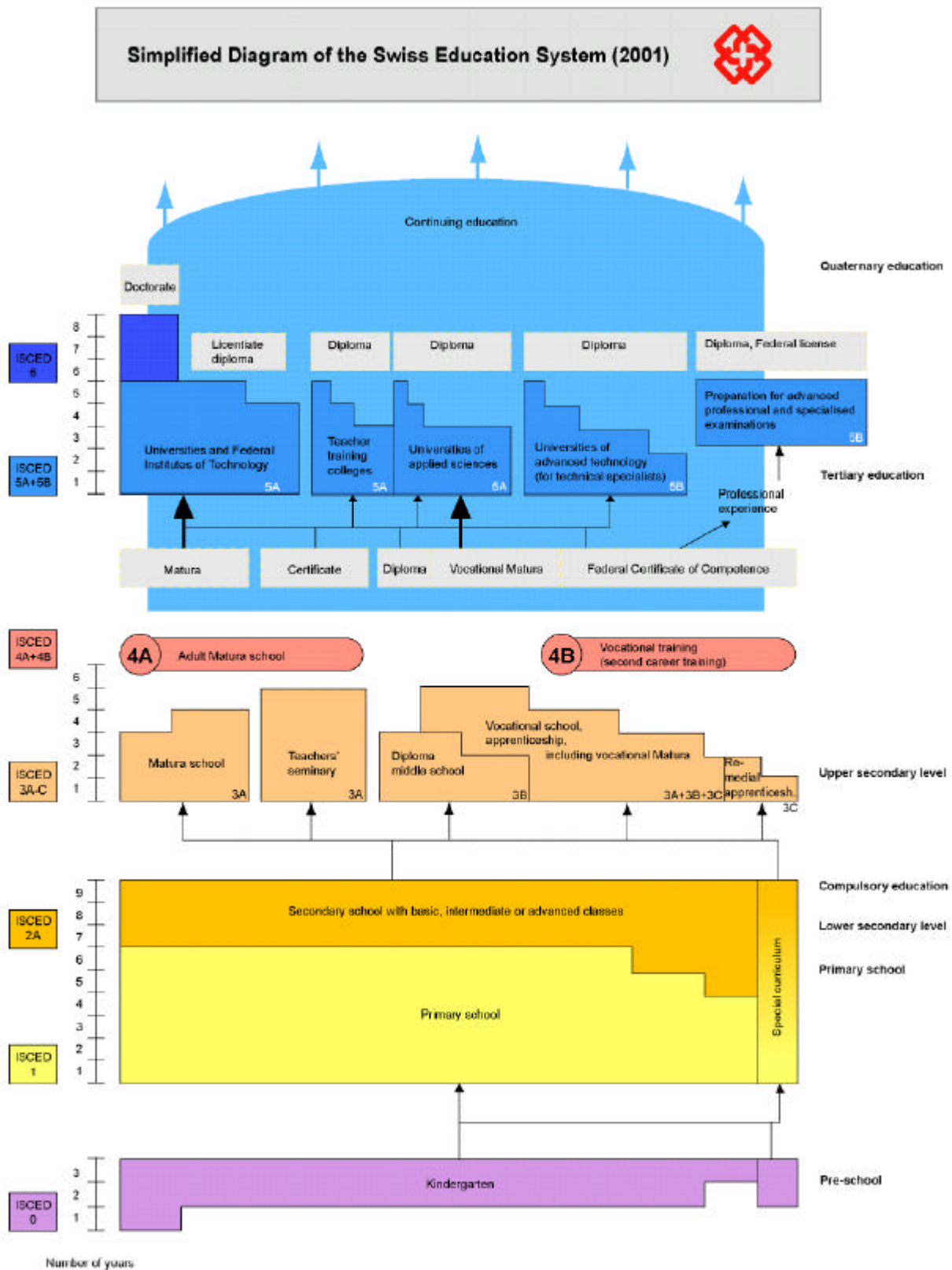
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# Appendix 1



## Appendix 2

### TREE Project description

|                     |  |
|---------------------|--|
| <p><b>What?</b></p> | <p>TREE is the first national longitudinal research study about school-to-work transitions ever carried out in Switzerland. The survey's main concerns are the educational and occupational pathways pursued by young people after compulsory school. TREE is based on a sample of some 6,000 youths who took part in the PISA study (Programme for International Student Assessment) in 2000 and completed their obligatory schooling the same year. The sample is representative both on national and on regional levels (German, French and Italian speaking parts of Switzerland).</p> <p>Three panel surveys have been carried out until 2003, during TREE's first phase, allowing for detailed analysis of educational and occupational pathways between compulsory school and upper secondary education and training. This first phase focuses on the conditions, the process characteristics and the consequences of so-called irregular or precarious educational pathways, particularly on the effects of early dropout (i.e. on what happens to young people who do not complete post-compulsory education).</p> <p>The second phase of TREE, based on four additional panel surveys between 2004 and 2007, focuses on the transition between upper secondary level education (apprenticeship, high school, etc.) and entry into labour market or tertiary education.</p> |
| <p><b>Who?</b></p>  | <p>The TREE survey is carried out by the education research centres of the cantons of Berne (Bildungsplanung &amp; Evaluation BiEv), Geneva (Service de recherche en éducation SRED) and Ticino (Ufficio studi e ricerche USR). The project is co-financed by the Swiss National Science Foundation, the Swiss Federal Office for Professional Education and Technology (OPET), and by the Swiss Federal Statistical Office (SFSO).</p>  |
| <p><b>How?</b></p>  | <p>Method: longitudinal study with a minimum of 7 annual survey phases, combining standardised written questionnaires and telephone interviews.</p>  |