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EVALUATION OF THE ELITE SCHOOLS OF SPORT
Empirical Findings from an Individual and Collective Point of View

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Abstract The German Olympic sport federation considers elite sport schools (ESS) to be beneficial for talented young athletes by offering school education and optimal training conditions, enabling pupils to perform at their best. An evaluation of ESS institutions systematically analyzed empirical data on ascribed and achieved aims with collected individual and collective data using questionnaires. On an individual basis, school performances and post-school occupational prospects, as well as competitive success of participants in the 2004 Summer Olympics and the 2006 Winter Olympics were compared among ESS and non-ESS student-athletes. Age differences between the categories ‘continuous at ESS’, ‘in stages at ESS’ and ‘never at ESS’ were not found. The results show that there was no difference in athletic performances between ESS pupils and others in the 2004 Summer Olympics, while in the 2006 Winter Olympics, there was a significant difference. Furthermore, there were no differences in school performances between the groups. Pupils at ESS often go on to pursue careers in the federal police and the armed forces, while many more non-ESS pupils work toward earning a university degree. The available data suggest that attending an ESS results in higher individual social costs which are not matched by comparable success in athletic competitions.

Key words • elite sport schools • evaluation • quality • questioning

1. Functions of the Elite Schools of Sports

Elite schools of sport (ESS) in Germany are promotional facilities, which in the cooperation of competitive sports, school and accommodation possibilities should guarantee conditions which favor future top sporting performances while safeguarding opportunities for primary and secondary education (see DOSB, 2005) for pupils who are assessed to be highly talented. More than 10,000 sports pupils, thereof more than 5000 selected squad athletes of the various sport federations and more than 500 members of youth and junior national teams, were supervised in these schools in 2004, and more than 500 highly-qualified trainers and coaches as well as more than 200 boarding school teacher’s work in such institutions currently. ESS is a cost-intensive promotional structure which requires a high degree of internal and external cooperation. Standard quality criteria for the purpose of recognition as an ESS were drawn up and passed by the working committee Elite Schools of Sport in Leipzig in 2002. If these criteria are satisfied in accordance with the standards set by the German Olympic Sport Federation, a school receives
the label ‘elite school of sport’ for four years. Although, the targets of ESS are to a large extent similar, individual demands as well as their orientation in terms of geography, structure, and curriculum can vary somewhat depending on the supervised type of sport or age of the pupils. The individual standard quality criteria defined by the working committee Elite Schools of Sport comprise the following (DOSB, 2005): attractiveness of the ESS, favorable conditions for the athletes’ development, regional and national potential for results, coordination and management of time budgets, and sporting and education-based success of the graduates. Currently, 40 ESS were certified by the federation for a period of four years when the survey was conducted. They are found in all regions of the Federal Republic of Germany with various focuses in different types of sports.

ESS should provide a structural coupling of competitive sports and education primarily at the temporal and social levels. This is accomplished by organizing more time for training but allowing for sufficient time devoted to school education, for example, through a reduction in time-route-costs (Teubert et al., 2006). Thus, timetables can be adjusted by school officials to enable early training, exemptions from lessons allowed for training and competition and compensatory lessons. Extending the upper stage of grammar school by a further year is currently being discussed and has already been implemented in isolated cases (Evers, 2003). Were these changes to be put into effect, organized elite sport could reschedule special training sessions on school holidays, take part in important competitions during project weeks and on weekends, and schedule training sessions for semester breaks. The whole structure of the ESS is thus oriented towards providing for maximum amounts of time for training and competition in early phases of the development of a team or individual athlete. Seen from an economical point of view the aim is to maximize the associated gains from school education and athletic interest/talent. The central aim is the success of the German Olympic team; this goal will be realized, it is said, via the positive influence on the individual athletic performance of the student.

For student-athletes, intensive training and periods of regeneration compete with the time required for studying, doing homework, and preparing various assignments and projects related to their school education. Available time thus becomes a scarce good which has to be allocated ‘skillfully’. Combined school and training time volumes that total 40 to 45, in some cases even 50 to 90 hours per week, are no rarity (see Richartz and Brettschneider, 1996). Rost (2003) reports an average burden of 55 hours a week for C-squad athletes in the 12th form.

In view of the tight time budget constraints placed on the pupils, the ESS must ensure a balance between sport- and education-related expectations. The school should primarily take into account the future prospects of their pupils as far as secondary and higher education, vocational training and career choices are concerned. Altering this balance inevitably involves various costs and risks for the respective individual in the long-term. Quality management of the ESS system, as proposed by Stockmann (2002), which implies long-term sustainability, must therefore take into account target achievement. This must be seen as a necessary and indispensable aspect of the evaluation (Lawless, 1979), both for the field of schooling as well as of sports, not only for the short term but also for the long term (see, generally concerning the term of quality, Harvey and Green, 2000).
The ultimate goal and raison d’être of the ESS is in the end to increase the long-term probability of success of the selected, promoted athletes in competitive sport, as well as to guarantee that high educational qualifications – as a rule Abitur (High School graduation) – can be achieved. Likewise, a student-athlete’s tenure at an ESS should not disadvantage him/her in any way or adversely affect his/her individual potential or the further course of the education. The evaluation of the ESS leads one to pose the following questions:

- To what extent do upper-level student-athletes from an ESS differ from student-athletes of similar age and education from other schools with regard to the key statistic of Olympic medals won?
- To what extent do upper-level student-athletes from the ESS system differ from their non-ESS counterparts with regard to educational achievement?
- How are basic structural conditions such as support services for elite pupils assessed and appraised?

Additionally, the following questions were raised for the purpose of compiling basic statistics on student-athletes at ESS institutions:

- How many pupils are enrolled at ESS institutions? How do the totals for the number of pupils enrolled in the new federal states compare to those for the old federal states?
- How is the capacity utilization of the ESS system with regard to the relationship of available places to the number of applicants or admitted applicants?
- Which compensation measures do ESS schools have in place with regard to missed lessons/lectures, etc.?

It can be presumed that the goals stipulated in the documents of a given ESS may not agree with the actually intended goals (see, generally concerning the gap between talk, decision, and action referring to differences between production and legitimation functions in organizations, Brunsson and Olsen, 1993). Furthermore, goals may change over the course of time (short-, medium- and long-term success dimensions and their attribution), and various players occupied with implementing said goals (individual and corporative) may indeed pursue different aims. (A school may desire, for example, as much success as possible at the school age in order to increase the allocation of resources; parents want their children to receive a good high school education and to graduate; athletes want to have fun during training, and trainers, coaches, and mentors of upcoming athletes are measured based on the success of their athletes.)

2. Methods

The goals of evaluation processes lie in gaining knowledge, in exercising control, in creating transparency, in enabling a dialogue as well as in the documentation of success or failure (legitimation problem). In the process of data collection and analysis evaluations in no way differ from scientific research, whereas specific problems arise with regard to the implementation of results (see Kromrey, 2007). As opposed to fundamental research the aim of evaluation is explicitly an assess-
ment of success or failure of a measure, and thereby supplying a decision aid for the customer so that, for example, work cycles can be designed more effectively and input can be used more efficiently, etc. (see Bortz and Döring, 1995).

A comparative perspective at the individual level was chosen for this study. In summary, 611 German participants of the 2004 Summer Olympic Games as well as the 2006 Winter Olympics were questioned by means of a standardized survey. Both former as well as current pupils of ESS institutions as well as pupils from ‘normal’ schools were compared with regard to their level of success in sports as well as their post-school educational career. Structural conditions and forms of cooperation in the ESS system were also recorded at the collective level by means of a nationwide standardized survey that was conducted for the German Olympic Sport Federation to examine the quality of these facilities for the period between May 2004 and February 2005. The basis for creating the survey of collective data was the set of quality criteria passed in 2002 (see also DOSB, 2005). A comprehensive offline survey form was created to this end, which was sent to the chosen institutions electronically and was completed by participants on a computer. It could also be returned electronically. From a critical point of view it must be noted that there are currently no longitudinal section surveys of ESS graduates which record and examine long-term professional, educational, and athletic career trajectories.

The response amounted to a total of 32.6 percent, 199 of the 611 total participants. The distribution of athletes by summer and winter events as well as by sex in the sample was approximately equal to the distribution in the population of athletes (see Tables 1 and 2). It is to be noted that there were equal proportions of male and female athletes with the responses of the winter sport athletes. However, this distribution did not exist in the population (61% were male). The difference in distribution compared to population is statistically significant ($\chi^2 = 3.85$; d.f. = 12; $N = 61$; $p = 0.050$). Some 43.1 percent of the respondents were born in the new federal states (former GDR) and 40.1 percent were living in the new states when the survey was carried out. Thus, the athletes in the new states are over-represented in terms of percentage of all athletes. There was no age difference between the individual categories ‘consistently at an ESS’, ‘in phases at an ESS’ and ‘never at an ESS’, so that one can assume similar effects of the moderator variable age in the three categories. Of the Summer Olympics participants, 40.4 percent ($N = 55$) were born in the new federal states (former GDR). In the case of the Winter Olympics, half of the participants came from the new federal states (49.2%; $N = 30$). This is not surprising, for it reflects the relatively high concentration of winter sport federations in the federal states of Brandenburg, Saxony and Thuringia, owing to geographical and climatic aspects and to the availability of sports-center infrastructure.

All 38 ESS establishments which still existed in 2004/2005 were surveyed in order to gather collective data, and it was thus possible to acquire 37 data records for the evaluation.
3. Results at the Individual Level

Details were provided by 196 respondents on whether they attended an ESS consistently (from the fifth class onward), or in phases (i.e. for various classes, class stages), or never. Only 16.3 percent \((N = 32)\) were consistently enrolled at an ESS, and 19.9 percent \((N = 39)\) in phases. The majority, notably 63.8 percent of Olympic participants who responded, did not attend an ESS at any time \((N = 125\); see Table 3).

The probability that winter sport athletes attend an ESS is higher than that of summer sport athletes. This is due to the fact that the success of those involved in winter sports is to a very real extent dependent on local infrastructure and conditions, for example, bob, luge, and skeleton runs, ski jumps, ice skating stadiums, etc., which are often located at ESS establishments. In contrast, the sport center infrastructure for Summer Olympic sports does not tend to have similar consoli-
dation. It follows that the shares of pupils at ESS institutions where training for winter sports is dominant are higher (see Table 4). The Chi-square test reveals that the higher shares are statistically significant ($\chi^2 = 8.93; \text{d.f.} = 2; N = 196; p = 0.012$).

### 3.1. Differences in the Level of Athletic Success between Pupils at Elite Schools of Sport and Pupils of Other Schools

Athletes who participated in the most recent Summer and Winter Olympic Games were used as an indicator for sporting success and were classified into two categories: ‘placing first to third’ and ‘placing forth or lower’. This procedure was chosen in order to carry out a differentiation of success that was as pragmatic as possible, and in order to receive the greatest possible occupation of cells. (The authors are aware that information concerning rank is thus lost.) Thirteen (7.1%) of the athletes were able to win gold medals, 23 (12.6%) silver, 17 (9.3%) bronze, and 70.9 percent ($N = 129$) came home empty-handed. A trend towards higher shares of medals among ESS student-athletes can in fact be seen here, but the difference in distribution is not statistically significant ($\chi^2 = 3.71; \text{d.f.} = 2; N = 179; p = 0.157$; see Table 5).

We have already addressed the issue of winter sport athletes making better use of the infrastructural possibilities made available to them at an ESS. Therefore, it could be presumed that they are also more successful in winter sport competitions than non-ESS athletes. It is precisely for this reason that the examination of athletic success described above was carried out separately for summer and winter athletes (see Table 6). In order to carry out the Chi-square test it was necessary to summarize the categories ‘consistently’ and ‘in phases’ (problem of the occupation of cells). There were no statistically significant distribution differences among the participants of the summer games ($\chi^2 = 0.48; \text{d.f.} = 1; N = 127; p = 0.488$).

Significant differences were seen in the distributions for winter athletes. The share of medals among ESS pupils is substantially higher for winter sports (37.9%) than for pupils who did not attend an ESS (8.7%). It can therefore be seen that there is indeed a connection between success in the winter sport events and ESS attendance ($\chi^2 = 5.85; \text{d.f.} = 1; N = 52; p = 0.016$). It is difficult to

<table>
<thead>
<tr>
<th>Attendance of ESS</th>
<th>Consistently at ESS</th>
<th>In phases at ESS</th>
<th>Never at ESS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer Games</td>
<td>18</td>
<td>22</td>
<td>96</td>
<td>136</td>
</tr>
<tr>
<td>Winter Games</td>
<td>14</td>
<td>17</td>
<td>29</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>196</td>
</tr>
</tbody>
</table>

Table 4  Attendance at Elite Schools of Sport (ESS) Depending on the Type of Sport (Columnar Percentage Arrangement)
assess the role played by ESS institutions and their links to winter sport centers/ infrastructure. It is interesting to note, however, that many of these sport centers already existed prior to the founding of many ESS institutions, and that athletes recorded similar successes even then. Again, the low occupation of cells makes the interpretation of results difficult.

A further presumption would be that female and male athletes profit in different ways from enrollment in an ESS. Gender-specific success was also analyzed analog to the procedure mentioned above. There were no statistically significant distribution differences noted here ($\chi^2 = 0.54; \text{d.f.} = 1; N = 94; p = 0.463$). Slightly more substantial differences were indeed recorded for female athletes, but they are of little statistical importance ($\chi^2 = 2.31; \text{d.f.} = 1; N = 85; p = 0.128$).
School Education and Professional Qualification: Comparison of Pupils at Elite Schools of Sport and Pupils at Other Schools

Since it is the task of the ESS to educate pupils as well as promote athletic prowess, the professional situation after the period of school education is of course also interesting and important. It is assumed that upper-level athletes are at a disadvantage with regard to their professional qualifications without the support of an ESS. As only upper-level athletes were questioned for this survey, one would expect there to be a distinction between graduates of ESS institutions with regard to their professional qualification and pupils who did not attend an ESS, given the purported goal of the ESS system. Twenty-nine respondents stated that they were currently still attending an ESS institution. These respondents were excluded from further analysis. We will begin with school qualifications, which are to be differentiated according to whether they were attained at an ESS or not (see Table 7).

The frequencies of graduates with high school graduation (Abitur) compared with other school qualifications do not differ significantly between ESS and non-ESS pupils (based on the question where the maximum school qualification was attained, $\chi^2 = 1.05$; d.f. = 1; $N = 157$; $p = 0.307$). This also applies to secondary school qualifications (including qualifications received at a technical college; $\chi^2 = 0.04$; d.f. = 1; $N = 157$; $p = 0.835$). If one now compares the educational qualification ‘university degree’ with other respective qualifications (Table 8), it can be seen that with graduates of an ESS there is a trend towards a lower share who have attained a university degree, whereby however the distribution difference is not significant ($\chi^2 = 1.83$; d.f. = 1; $N = 147$; $p = 0.176$). No statistically significant differences were recorded either with regard to a completed apprenticeship ($\chi^2 = 0.03$; d.f. = 1; $N = 147$; $p = 0.877$), the category ‘no qualification’ ($\chi^2 = 0.01$; d.f. = 1; $N = 147$; $p = 0.943$) or ‘still undergoing vocational training’ ($\chi^2 = 0.03$; d.f. = 1; $N = 147$; $p = 0.904$). Only for the qualification category ‘other’ was there significant overrepresentation among graduates of ESS institutions ($\chi^2 = 8.18$; d.f. = 1; $N = 147$; $p = 0.004$).

<table>
<thead>
<tr>
<th>Maximum attained school qualification</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary school qualification level 1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Secondary school qualification level 2</td>
<td>11</td>
<td>19</td>
<td>30</td>
</tr>
<tr>
<td>(incl. technical college)</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Subject-related high school graduation</td>
<td>2</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>General high school graduation</td>
<td>41</td>
<td>68</td>
<td>109</td>
</tr>
<tr>
<td>Other qualification</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>102</td>
<td>157</td>
</tr>
</tbody>
</table>

Table 7 Overview of Survey Respondents' School Qualifications, Differentiated According to Whether They Were Earned at an Elite School of Sport or Not (Columnar Percentage Arrangement)
No advantage can be documented among upper-level athletes, at least with regard to the maximum school qualification as well as university degrees among ESS enrollees. The commencement of university studies after completing school is underrepresented among ESS pupils. On the other hand, ESS pupils more often join the sports company of the German Army or of the German national police forces than none ESS pupils do. It would seem to be the case that many ESS student-athletes prefer these educational and/or career paths because they appear to be less risky than embarking on a course of study at university, the perceived future professional benefits of a university degree notwithstanding.

3.3. Subjective Perception of Problems

With regard to the question of whether or how often problems occurred during one’s time at school, initially, the groups ‘consistently at ESS’ were compared with ‘never at ESS’. Statistically significant deviations were seen with regard to the reported frequency of occurrence with three of the 13 items (see Figure 1). Differences were revealed with the items ‘missed examinations owing to competitions’, ‘missed lessons owing to competitions’, ‘had to deal with coordination myself’, and in fact to the extent that the athletes consistently supervised at ESS institutions report these problems more frequently.

As pupils were also surveyed who were at an ESS in phases, it was possible to record their impressions of both the ESS as well as the other school. There were no significant differences from a statistical point of view.
4. Results at the Collective Level

According to the information of 37 ESS institutions, a total of 10,229 pupils were enrolled at the time of the survey (2003/2004 school year), 1484 thereof in the old federal states and 8745 in the new. An average of 93 (s = 70) competitive athletes were supervised per school in the former West Germany, and an average of 416 (s = 290) athletes per school in the former East Germany. This represents a substantial difference ($F = 18.97$; d.f. = 1; 35; $p < 0.001$). The data on pupils at the individual school level are presented in Figure 2.

The number of available places was recorded as well: the number of applicants and the number of actual new admissions at the respective schools from 2001 to 2004. There were a total of 1958 new admissions at 28 ESS institutions during the 2001/2002 school year. Of those, 373 were admitted at 12 ESS schools in the old federal states and 1585 at 16 ESS schools in the new federal states. This represents a substantial difference ($F = 18.97$; d.f. = 1; 35; $p < 0.001$). The data on pupils at the individual school level are presented in Figure 2.

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The capacity utilization was determined based on the information concerning the number of available places and the new admissions (see Table 9). The capac-
ity utilization in the new states is almost 100 percent, whereas in the old states it fluctuates between 66 and 77 percent. It is to be noted that between 50 and 60 percent of all applicants receive a place at ESS institutions in the old states, whereas merely 30 to 40 percent of applicants in the new states are so rewarded, which is of course understandable given the higher demand for such positions.
Some 629 pupils left an elite school of sport (information from 27 facilities) in the 2003/2004 school year before attaining a school qualification (it is unknown how many of them changed to another regular school after leaving the ESS). This figure was 45 at a total of 10 schools in the old states and 548 at a total of 16 schools in the new states. In relation to the newly admitted pupils in the same year, this corresponds with a total of approx. Some 36 percent of the newly occupied places; differentiated according to regions the figures are 17 percent in the old states and 39 percent in the new states. According to the information provided by schools, one of the main reasons why pupils at ESS institutions interrupt their school education is the failure to satisfy athletic criteria and meet performance requirements. These reasons are mentioned as the main reasons for the greatest share of the drop-outs at 21 schools. Further reasons given— which, however, appear to be of less relevance—were the failure to satisfy academic requirements, lack of motivation, injuries as well as familial problems.

From 31 schools we have nearly complete information concerning the squad status of the pupils. There are a total of 6740 pupils, 1167 thereof in the old states and 5573 in the new states. While 61.8 percent of the ESS pupils belong to a

![Figure 3](https://example.com/figure3.png)

**Figure 3  Distribution of Pupils across Squad Levels (N = 6740)  

<table>
<thead>
<tr>
<th>Squad Level</th>
<th>A-squad</th>
<th>B-squad</th>
<th>C-squad</th>
<th>D/C-squad</th>
<th>D-squad</th>
<th>no squad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old states</td>
<td>0.3%</td>
<td>1.3%</td>
<td>7.0%</td>
<td>7.2%</td>
<td>45.9%</td>
<td>38.2%</td>
</tr>
<tr>
<td>New states</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.3%</td>
<td>1.3%</td>
<td>7.0%</td>
<td>7.2%</td>
<td>45.9%</td>
<td>38.2%</td>
</tr>
</tbody>
</table>
squad, merely 8.6 percent of all promoted pupils are members of a federal squad important for the competitive sport system (C- to A-squad). The exact distributions are presented in Figure 3, differentiated according to region in Figure 4.

By creating compensation measures, the ESS institutions have attempted to achieve a reduction in the opportunity and time costs. The absolute frequencies of the entries at the individual schools can be found in Table 10. It can be seen that those schools where remedial teaching is on the agenda only appear to be located in the old federal states. This measure was not mentioned in the schools of the new states. The most frequent entry there was ‘private tuition’ or ‘subsequent additional lessons’, which is offered at ten schools, but, in the old states, only at five. Measures such as individual lessons were not mentioned by schools in the new states.

According to information submitted by schools, a total of 4139 uses of compensation measures were recorded. The distributions of said use across the

![Figure 4](https://example.com/figure4.png)

**Figure 4** Distribution of Pupils across Squad Levels, Differentiated According to Region (N = 6740)

**Table 10 Absolute Frequencies of the Entries of the ESS Concerning Compensation Measures**

<table>
<thead>
<tr>
<th>Measure</th>
<th>New states</th>
<th>Old states</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remedial teaching</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Private tuition/subsequent additional lessons</td>
<td>10</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Tasks for training camps</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Lessons outside of the school hours</td>
<td>2</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Teacher supervision in the training camps</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Individual lessons</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Homework supervision</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>
Figure 5  Use of Compensation Measures (100% Corresponds with 4139 Uses)

Figure 6  Percentage Distribution of the Pupils Differentiated According to Region, Who Use the Compensation Measures (N = 4139)
various forms of compensation provided are presented in Figures 5 and 6. On the whole the most intensively used compensation measure appears to be specially assigned schoolwork during training camps (53.64%, see Figure 5). In an analysis differentiated according to region, it becomes clear that this applies solely to the territory of the new states, whereas private tuition and subsequent additional lessons dominate in the old states (see Figure 6).

5. Discussion

ESS institutions are subject to similar innate structural problems just as other promotional organizations charged with supporting and facilitating the careers of up-and-coming athletes in competitive sports (see Emrich and Güllich, 2005): As these institutions gain legitimacy through the sporting successes of their pupils, they justify the receipt of limited public funding by once again referring to the athletic successes of their students (number and structure of squad athletes, placement in national and international championships) and by sending young talents to organizations within the German elite athletes support system, for example, Olympic training centers. At the same time, they compete with each other, both for material resources as well as recognition (e.g. possibilities for promotion and relegation within the system through the revocation or granting of ESS-status and the allocation of various subsidies). ESS institutions are primarily measured according to the actual success of their athletes, whereas, as a rule, long-term attribution of success had not taken place until the time of this survey. Such a plan is, however, currently being discussed in the German Olympic Sport Federation. Those who work at ESS institutions attempt to help athletes achieve athletic success at an early stage in accordance with the logic of assessment within their organization. This means that training is intensified in terms of time (as many activities as possible during the same time period), and time extensification (extension to other fields in terms of time) occurs as well – in part also at the expense of the students’ general education. Thus, the specialized efficiency of the pupils, a prerequisite for the athletic success, is improved during the school period. An unintended consequence is increased risk of early performance stagnation and thus associated drop-outs. The competitiveness of the organization itself, however, increases in the collective battle between organizations for the supply of material resources.

5.1. Discussion with Regard to the Effect of Elite Schools of Sport

Among the athletes who took part in the 2004 Summer Olympic Games, ESS pupils achieved no greater athletic success than did their non-ESS counterparts. In contrast to this, a trend towards a lower professional qualification by the ESS was observed. It would be reasonable to assume that, over the course of a lifetime, total professional income earned would be higher for those who do not have a university education. The social capital gained by earning a college degree (prestige, reputation, etc.) could perhaps compensate for this assumed monetary disadvantage. At the same time it becomes clear that the individual acceleration
of athletic development is in fact possible with the increased use of resources, however cannot principally convince in terms of their sustainability on the previous level of knowledge. With regard to the central goals of ESS – to compensate for supposed or de facto reduced educational and career opportunities of elite athletes – no substantial effect can be seen.

A difference in the sporting success among winter sport athletes was documented between ESS- and non-ESS-pupils – an effect, which from the point of view of those in the ESS organization should by all means be welcome, for it serves to justify of the utilization of various resources within and for the ESS system. The question raised here is whether ESS institutions with winter sport athletes can serve as ‘best practice models’ for other ESS schools. In this respect it is important to analyze and discuss whether the observed effect can indeed lead one to presume causal connections between supervision at an ESS institution and athletic success. Or is this a fictitious correlation owing to the effect of further factors of influence? Several structural differences between summer and winter Olympic sports are of special relevance. The chances of becoming a medal winner in the Winter Olympics are disproportionately higher, owing to the number of participating nations (considerably fewer than in the summer games). Moreover, the importance of geographical, climatic and sport infrastructural prerequisites is far greater for winter sport types than for the majority of summer sport types, which leads to the concentration of successful athletes at a few training centers, who then, in turn, frequently attend a local ESS. Altogether the interaction of the described structural differences between summer and winter sport types can explain the difference in Winter Olympic Games between pupils at ESS and pupils who do not attend ESS. However, as both factors, namely the concentration of former successful athletes as well as the number of competing nations are intangible, ESS in winter sports cannot serve as models for ESS in summer events. It is highly probable that the connection between ESS attendance and athletic success in winter sports thus represents a spurious correlation. With regard to the effect of the control means for harmonization of athletic and educational requirements at ESS institutions, the data reported here concern the individual experiences and assessment of ‘problems’. Only the information of the (few) persons who attended both school forms can be used for assessing the actual efforts at harmonization of the claims. This leads to the impression that coordination actually functions better at ESS schools, or rather that the assessment of the results of ESS pupils is worse, which could signify a prevailing attitude of excessive expectations. Internal monitoring of the performances of the ESS in this sector to illustrate the effect of the efforts at supervision would by all means be instructive and informative for preventing objectively unjustified discussions about the efficiency of the work.

Until now, research in this area has indicated that attendance at an ESS facility has frequently involved increased individual and social costs (see Richartz, 2001), which, according to our results, do not involve equivalent gains in the form of athletic success and/or increased educational and professional prospects. The question to what extent it concerns a selection effect or a socialization effect or an interaction of both remains unclarified at this point. It is indeed possible that biologically accelerated athletes, or athletes who can be accelerated biologically,
5.2. Discussion with Regard to Differences between Elite Schools in the Old and the New Federal States

The differences between the old and new federal states must be analyzed in more detail against the background of the assumed individual rational decision to attend an ESS and the question of the efficiency of the promotional system. The most important benchmark data are:

- There are more chances for admission for pupils at ESS schools in the new federal states than in the old federal states.
- There are more applicants for admission at ESS schools in the new federal states than in the old federal states.
- The surplus demand is greater in the new federal states than in the old federal states.
- The share of school drop-outs is substantially higher in the new federal states than in the old federal states, whereby the most frequent reason for drop-out is the failure to satisfy athletic criteria.
- The number of pupils in the relevant age groups in the new federal states is smaller than in the old federal states.

The difference in the number of ESS admissions, considering the populations of potential ESS pupils, which vary in size, lead to the ESS supervision of 0.02 percent in the old federal states and 0.38 percent in the new federal states for the 2003/2004 school year. The probability that a pupil in the new federal states will attend an ESS institution is thus 18.6 times greater than in the old federal states. The population of pupils is thus exploited to a larger extent than in the

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs and risks</th>
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<tbody>
<tr>
<td>More time for training load</td>
<td>Shift of the load-recuperation balance</td>
</tr>
<tr>
<td>More time with games and fun</td>
<td>Weariness and injuries</td>
</tr>
<tr>
<td>More time with pleasant side-effects</td>
<td>Emotional and motivational weariness</td>
</tr>
<tr>
<td>- Identification with role as athlete</td>
<td>Suboptimal choice of type of sport/chance</td>
</tr>
<tr>
<td>- Being together with friends and coaches</td>
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<td>- Having a good time, etc.</td>
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<tr>
<td>Less available time for</td>
<td></td>
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<tr>
<td>– education</td>
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<tr>
<td>– leisure activities</td>
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<tr>
<td>Deviation from expectations from other areas (school, family, friends)</td>
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<tr>
<td>Less opportunity for individual self-determination, decisions, assumption of responsibility, etc.</td>
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are preferred at ESS institutions, whereas those who are slower to develop are not influenced by this type of supervision and support.
old federal states. The probability that talented youths with special performance prerequisites due to abilities and environment will also attend an ESS school in the new federal states is also substantially higher than in the old federal states. Thus, the probability that a pupil will attend an ESS institution and win a medal at a major international event is also higher; one’s chances are three and a half times greater in the new federal states than in the old federal states. This should exclusively be a result of the greater proportion of the available population of potential student athletes admitted. That this cannot be seen as a result of better education within the framework of support and supervision of promising athletes for competitive sports in the new federal states can be seen in a comparison of the medal winners at major international events in the relation to the number of elite pupils. Accordingly, the probability that an ESS pupil would win a medal in the period 1997 to 2004 was 5.99 times higher in the old federal states than in the new federal states, which is not due to differences in education, but rather to a smaller scope of and more focused recruitment.

Two aspects of this issue are of special significance in this respect: the reasons for the larger capacity of the ESS system in the new federal states and the consequences of the difference in capacity between the new and the old states. However, both aspects are interrelated, and can only be broken down analytically, not empirically, within the framework of a cross-sectional analysis.

One cannot simply look for the reasons for the larger number of ESS institutions in the new federal states in the realities of supply and demand – historical features are indeed at least partly responsible. Various ESS institutions still see themselves today as the successor organizations of former children and youth sport schools (see e.g. Lausitzer Sportschule Cottbus, 2007; Sportgymnasium Chemnitz, 2007; Sportschule Frankfurt (Oder), 2003). As a comparable promotion of elite athletes did not exist to a similar extent in the Federal Republic of Germany before reunification, it can be presumed that the dense network of ESS and admissions for elite pupils in the new federal states is also a result of the continuation of a sport-related profile of the schools. If, ceteris paribus, one initially assumes a higher availability of enrolment for elite pupils of sport in the new federal states, then it is initially marked by the individual balancing of costs and benefit aspects through lower costs for pupils and families in the new federal states, which helps explain the higher number of applicants. At the same time the selection procedure leads to the fact that the existing greater supply is also exhausted, since as a rule no ‘hard’ criteria are applied, but in the end admission is granted according to the rank earned via an aptitude test.

As a consequence of this effect the probability of actually selecting highly talented pupils increases – the lower limit of the characteristic values of the performance prerequisites of elite pupils in the new federal states is also lower than in the old federal states – solely as a result of the greater scope of selection from a smaller available population. Consequently, the share of pupils whose performance prerequisites, owing to abilities and environment, allow them to attain levels of achievement which just manage to satisfy the performance criteria established by specialist and elite sport federations, is also substantially higher in the new federal states than in the old federal states. Therefore the greater share of dropouts, particularly owing to the failure to satisfy criteria for athletic success, is
a result of the greater scope of selection. Thus the impression of a higher level of selection of this education form as a particular consequence of the lower level of selection can also be produced as an effect of the corresponding higher share of dropouts at the schools in the new federal states. This effect, viewed through the lens of the gain in status by undergoing a highly selective career, can then explain the comparably greater demand and the on average more favorable cost–benefit balance in the new federal states.

The greater effectiveness of the promotion of promising athletes in the new federal states compared with the old states, as well as its lower efficiency, can be considered to be directly related to differences in the scope of recruitment. Other factors might additionally contribute to the differences, such as for example a difference in cultural importance accorded to competitive sport, or differing methods and approaches to the provision of resources in supporting and subsidizing the education and training of young athletes aiming for a career in competitive sport, which goes beyond the purview of the ESS system. To what extent these factors are necessary or at least helpful in explaining the differences between the new and old federal states can only be assessed if the influence of the demographical and school-infrastructure aspects discussed here can be put into figures.

5.3. Final Remarks

The response of ESS decision-makers to the dilemma between the sustainability of individual development and the legitimation of the ESS system is a decoupling of the production function and the legitimation function. In this sense we find a distinction between talk and action at the organizational level (see Brunsson and Olsen, 1993; Emrich, 2005). A possible solution to this conflict would be to assess the supply of resources of the ESS system contributing to the subsequent sporting success of former pupils in the active field. This would promote a versatile education at ESS institutions, which as proven leads to success and avoids leading pupils down the path of early specialization (see Emrich and Gülich, 2005). In addition, the success of the ESS system could also be assessed based on the education and professional prospects of its graduates relative to the education and professional prospects of other elite athletes. A penetrable and highly flexible system, which equally takes into account persons entering from other schools and orientations, those changing their orientation, and dropouts would be a further element contributing to the assurance of quality.

References


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