

ERLANGER BEITRÄGE ZUR SPORTWISSENSCHAFT – BAND 1

Heiko Ziemainz · Alfred Rütten &
Ulrike Roeger (Hrsg.)



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Quality Management in Talent Identification, Selection, and Development – Initial Results⁶.

Roeger, U., Ziemainz, H. & Ruetten, A.

Institute of Sport Science and Sport, University of Erlangen-Nuremberg

1 Introduction

The results of the first phase of the research project “Quality Management in Talent Identification, Selection, and Development” are presented in the following section (for more project informations see Ruetten et al. article). This phase of the inquiry was based on the following research questions:

What were the variables, determinants, and indicators of the talent systems in Germany?

How were these variables, determinants, and indicators represented in the talent systems of the different countries?

2 Methods

The first part of the inquiry has been an explorative study, due primarily to the fact that this is the first time the application of quality management has been evaluated in a talent system. This portion of the project involved open qualitative interviews with narrative and semi-structured questions.

Respondents were officials, coaches, and athletes in the talent systems of Australia, China, Germany, the former German Democratic Republic (GDR), and the United States of America (USA). Participants from the former GDR were asked to answer retrospectively. The explorative qualitative study concentrated on swimming (individual sport) and volleyball (team sport). These two sports were chosen for this part of the study because the individual vs team sport settings would probably provide a wide variation in talent selection, identification, and development strategies.

6. Founded by the German Bundesinstitute of Sport Science (BISp)

Levels of inquiry (explorative study):

N A T I O N A L	Federal Associations		Non -Governmental Sports Organisations		Sport Specific Non - Governmental Sports Organisations		University -based Sport Organisations		
	Responsible Person Sport (n=1)		Responsible Person Comp . Sport (n=1)		Responsible Person Talents (n=2)		Responsible Person Comp . Sport (n=1)		
S T A T E	State 1 and State 2								
	Federal Associations State Insitute (only China)			Non -Governmental Sports Organisations		Sport Specific Non - Governmental Sports Organisations		University -based Sport Organisations	
	Responsible Person Sport (n=1)		Responsible Person Comp . Sport (n=1)		Responsible Person Talents (n=2)		Responsible Person Comp . Sport (n=1)		
L O C A L	Swimming (State 1)		Volleyball (State 1)		Swimming (State 2)		Volleyball (State 2)		
	Coach (n=1)	Athlete (n=1)	Coach (n=1)	Athlete (n=1)	Coach (n=1)	Athlete (n=1)	Coach (n=1)	Athlete (n=1)	

figure 1. Levels of inquiry of the explorative study.

Figure 1 provides a general overview of the levels of inquiry of the explorative study. The sport system in Germany was used as a starting point to make the different international systems comparable. Information about these sport systems were gathered primarily from the existing literature. In each country three levels of inquiry were considered: the national, the state, and the local level.

Regarding Federal Associations at the *national level* in Germany, a representative from the Federal Ministry for Internal Affairs was interviewed. In China a representative from the National Sports Bureau and in Australia from the Australian Sports Commission and the Australian Institute of Sport have been selected. Non-Governmental Sports Organizations interviewed in Germany were the National Sports Organization (DSB); in the USA the United States Olympic Committee, and the YMCA as a community based organization. Also, sport specific Non-Governmental Organizations from Swimming and Volleyball in each country – except China – were included. Additionally, in the USA a person responsible for talent development from the National Collegiate Athletics Organization was interviewed. Because of its specific centralized sport system, members of the Federal Associations were included in China only.

At the *state level*, members of the state institutes of the above mentioned organizations were also interviewed in an attempt to compare two states or provinces, e.g. in Germany Saxony and Bavaria or in Australia New South Wales and South Australia.

At the *local level* one coach and one athlete from two different states were interviewed in swimming and volleyball for each of the questions. In each country between 14 and 16 interviews were conducted, whereas for the former GDR 3 interviews were carried out.

The interviews were carried out in the correct language for each country by performing the interviews over the phone from Germany. This form of data collection offered reasonable control between the interviewers and thus allowed better standardization. Furthermore, it was not as expensive as a face-to-face interview. The interviewer – some Chinese, Scottish and also German - were fully instructed and trained before conducting the interviews.

The interviews were recorded and afterwards completely transcribed. The German interviews were transcribed in the German language, the English interviews were transcribed in the English language so as not to lose as little information as possible. The Chinese interviews were conducted in the Chinese language and had to be translated to the German language by the Chinese interviewer.

3 Analysis

The interview analysis used the Qualitative Content Analysis method (*Mayring 2000*). Because of the large number of interviews, the analysis was performed via the MaxQDA computer method (*Verbi w.y.*).

The Qualitative Content Analysis was conducted in two stages. In part one the interviews were analysed without the use of a formally generated category system, this was performed to assist in any modifications that may have been needed for the data. During this process, assistants from the Institute of Sport Science and Sport of the University of Erlangen-Nuremberg who were blind to the research model were used. In part two, a deductive content analysis via the category system was used to evaluate the data. Different investigators were used during this part of the analysis and assigned single text passages into specific categories. This allowed the data to be modified and extended for further analysis.

The following results refer to 26 interviews that have been analyzed up to this point. In Germany three interviews from the nation level, two from the state level, and two from the local level were conducted. Each of the interviews included one coach and one athlete in swimming and volleyball, respectively. In the former GDR three interviews were included – one with an official at the

nation level, one with a coach, and one with an athlete, all from swimming. In the USA six interviews were considered for analysis – three at the nation-level, one at the state-level, and two at the local level (one of each, coach and athlete). In China two interviews at the national and two at the state level were included. Additionally, three other interviews from the local level were included from swimming and volleyball (coaches and athletes).

Additionally, a quantitative analysis of the interviews was carried out for getting an overview of the number of entries with regard to the above named variables, determinants and indicators of quality management. With this analysis the relevance of these variables, determinants, and indicators was investigated in order to decide which one of them was more important. For the quantitative analysis, descriptive statistics, t-test for dependent samples, an analysis of variance, and when there was no normal distribution a wilcoxon-tests was applied.

The presentation of the initial results from the quantitative analysis mainly dealt with the first research question – what were the variables, determinants, and indicators of the talent search systems. For answering the second research question – how were these variables, determinants, and indicators represented in the different talent search systems from each country – distinctions between the different countries will be discussed first, followed by a discussion of the results from the qualitative analysis.

3.1 Quantitative Analysis

Before presenting the results from the quantitative analysis it must be noted that all the variables represented in the research model – structure, process, and outcome – were adequately identified in the interviews. Also, the anticipated determinants for structure – goals, opportunities, resources, and obligations – determinants for process – control, organization, and planning – and the indicators for outcome – goal achievement, determinants for success and drop-out – were retrieved. Thus, these variables, determinants, and indicators were left in the category system for analysis.

Figure 2 shows the final results for the quality variables – structure, process, and outcome. For the analysis, the number of entries according to these respective quality variables were added. Because of the different quantities of indicators supplemented under each variable the absolute number was statistically weighted so that they could be compared. Therefore the results presented in Figure 3 are the weighted means.

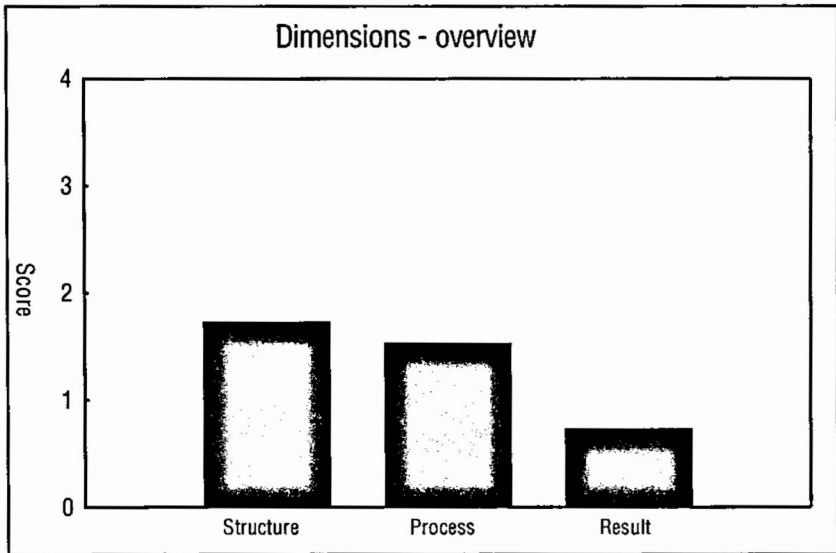


figure 2. Overview of variables: structure, process and outcome presented in form of weighted means.

While no discrepancy could be found for the variable of structure ($M= 1,73$, $SD= \pm 0,83$) compared to the process variable ($M= 1,53$, $SD= \pm 0,83$) both variables differed significantly ($p<0,001$) from outcome ($M= 0,73$, $SD= \pm 0,52$).

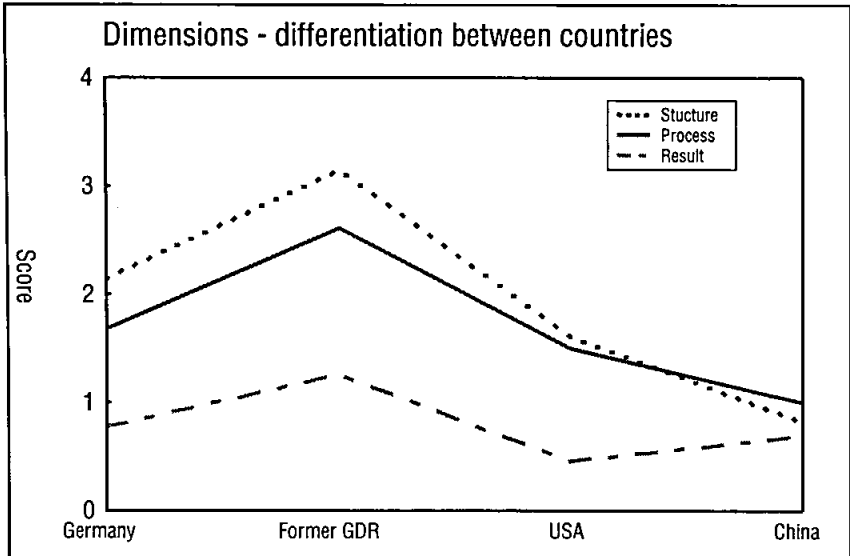


figure 3. Overview of structure, process, and outcome variables differentiated between countries presented in form of weighted means.

The analysis of variance that compared the results between countries yielded a significant interaction effect (figure 3). In Germany, the former GDR, and the USA, results were nearly the same as in the overall view. Whereas in China no difference was found between structure ($M= 0,82, SD= \pm 0,18$), process ($M= 1,00, SD= \pm 0,31$), or outcome ($MW= 0,69 \pm 0,18$). Although only marginal ($p=0,08$), in China the variable of process seemed more meaningful than the structure variable.

3.2 Qualitative Analysis

In regard to the results from the qualitative analysis only one indicator was examined – the infrastructural resources. To ensure anonymity, the individual interview responders were numbered in quotations.

During the analysis process, the indicator – infrastructural resources – was divided into separate sub-groups:

- Kindergarten/school/job training/job,
- Support services,
- Training locations, and
- Infrastructure for talent selection process.

The following section concentrates on the sub-group kindergarten/school/job training/job with an emphasis on the *school* section. Under the sub-group kindergarten/school/job training/job all text passages containing statements dealing with methods of talent development linked to kindergarten, school, job training, and job were summarized. For example, statements about collaborations between clubs and schools or options for extending years of schooling have been supplemented under this category.

The *school* sub-group was further divided into different sub-categories: (a) school sport, (b) collaborations between schools and the sport system, (c) sport schools, and (d) boarding schools. In the first sub-category, *school sport*, the national level German swimmers complained that traditional sports wouldn't be taught much longer in the schools. Thus, the critical portion involved in teaching the fundamental sport skills has to be performed in the future by the sport clubs. A problem with this change was brought up by an athlete of the former GDR who stated she had completed all of her fundamental training in schools. If this is taken away, then she might not have entered a swimming program but would have become a track and field athlete rather than a swimmer. In the United States, a nation level athlete stated:

“... Swimming and track and field and basketball, these are some of the sports that are very popular in this country and part of what why we're successful at those is because we have them in the school system not only in high schools but in the collegiate system. (...) and it's not only an advantage because you're getting in a education while you're playing your sport ...” (USA 1).

In the USA a large part of the sport system is integrated in the school system. This integration often results in frequent problems. For example, National USA volleyball players must often ask for time off from school to attend National training camps or competitions. Otherwise, students would only be able to play University competitions instead of international competitions. Nevertheless, the school system plays an important role in sports training in the USA, especially because of size of the country and the difficulties associated with bringing the athletes together for training. One other benefit of the school based system in the USA is that the athletes can get University scholarships and sometimes even high school scholarships that assist them with school, living, and training expenses.

A second sub-category was referred to as *collaborations between schools and the sport system*. This sub-category carries special importance in Germany. At the nation level, one official referred to a positive development of partnerships between schools and sport clubs. According to his opinion more and more new collaborations have been developed recently. Whereas a swimming official at the state level mentioned a more tenacious process referring to the development of collaborations between schools and clubs. This agrees with two other swimming

coaches who found it difficult to cooperate with schools. From this it appears that collaborations or more advisable with schools that already have a strong focus on sports. German volleyball programs did not mention such collaborations during the interview process. In China collaborations between schools and sport system were mentioned on all 3 levels: nation, state, and local levels.

The next sub-category found to be important was the *sport schools*. This category referred to schools that focused on sports, but does not include boarding schools. Only in Germany could information be found for this category. A German swimming athlete gave her experiences from sports schools in her area:

“In Bavaria there are two sport schools focussing on swimming and allow time off from school to attend training camps or competitions. These schools tend to be very open minded.” (Germany 8)⁷.

It was the opinion of this athlete that the advantage of sports schools was that classes started a little later to allow for morning training. It also allowed for the morning training session to not start as early in the morning. Sports school infrastructures varied depending on the German state that operated the school. In Bavaria only two schools focused on sports, in other states there were more sports schools. A swimming coach and a volleyball athlete from Germany also addressed these types of school during the interview process. Other training levels and countries did not refer to this type of a sport school and thus no other information could be gathered about it for comparisons.

A final category, *boarding schools*, was developed containing statements about part- or full-time boarding schools. At the national level in Germany, an official who was not directly referring to one sport made the following remark:

“Especially for the adolescent collaborative institutions of leisure sport, school and boarding schools, were established where the engagement of talents for leisure sports is considered and encouraged” (Germany 1)⁸.

It was the opinion of this official that full time boarding schools for talented athletes were quite normal in the current situation of Germany.

“Besides there are nearly 80 so called collaborative systems of leisure sport schools where clubs, sport associations, sport center points, and schools established special favorable structural opportunities for compatible connection of

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7. „Es gibt in Bayern zwei Sportschulen mit Schwerpunkt Schwimmen und die sind dann doch, wenn es um Schulbefreiungen geht für Trainingslager oder so Wettkämpfe sehr offen für alles. Wobei ich sagen muss, ich gehe in keine solche Schule. Aber die meisten Direktoren, wenn man denen das erklärt, sind damit meistens auch einverstanden“ (Deutschland 8).
 8. „Insbesondere für das Jugendalter haben sich zum anderen mit dem Verbundsystem vom Leistungssport Schule und Internat Einrichtungen etabliert, in denen das leistungssportliche Engagement der Talente berücksichtigt und unterstützt wird“ (Deutschland 1).

schools and sporting career mostly in form of full- or part-time boarding schools. In the meantime they are spread out in every 16 states” (Germany 1)⁹.

Whereas a swimming official in Germany at the nation level briefly mentioned boarding schools as one option for developing talented athletes. An official from volleyball specifically mentioned boarding schools for male athletes in Germany, which are situated in Frankfurt and Berlin.

“Yes and then, if they are identified by the big triage we were talking about, they are coming into our national center points and then total promotion starts. They are in the boarding school, naturally their parents have got to pay a little bit but they get trained from top coaches. These boarding schools our national center points are connected with olympic center points, where the whole service (...) for development and promotion of the athletes can be appointed” (Germany 3)¹⁰.

The following explanation by an interviewee from the German Volleyball state level concentrates on accommodating and concentrating all national athletes towards two boarding schools.

“The problem of bringing the people together, they are all students and must go to school, that’s clear. For this reason everything works merely in the form of boarding schools” (Germany 5)¹¹.

German Volleyball is attempting to bring athletes from the squad together so that they can train and play together as often as possible. At the same time this interviewee suggests that in the German state of Bavaria the infrastructure for boarding schools is undersized whereas in the new German states it seems better. Also at the local level an athlete located in Bavaria claims that there aren’t enough boarding schools in Bavaria. At the same time he remarks that in his opinion this does not result in an absence of a Bavarian club playing in the national league of Volleyball in Bavaria. He had the opportunity to attend a

9. „Daneben gibt es rund 80 sogenannte Verbundsysteme von Leistungssportlerschulen, wo Verein, Verband, Stützpunkt und Schule zumeist mit Voll- oder Teilinternat besonders günstige strukturelle Rahmenbedingungen zu verträglichen Verbindung von sportlicher und schulischer Laufbahn aufgebaut haben. Diese verteilen sich mittlerweile auf alle 16 Bundesländer“ (Deutschland 1).

10. „Ja und dann, wenn sie dann gesichtet werden über die große Sichtung, über die wir gesprochen haben, dann kommen sie in unsere Bundesstützpunkte und dann fängt ja die totale Förderung an. Die kriegen, die sind dann hier im Internat, natürlich müssen die Eltern da auch ein bisschen was mit, aber dann werden sie von den Spitzentrainern betreut. Diese Internate, unsere Bundesstützpunkte, sind an Olympiastützpunkte gegliedert, wo der gesamte Service (...) für die Entwicklung und Förderung der Sportler sozusagen eingesetzt werden kann“ (Deutschland 3).“

11. „Das Problem die Leute zusammenzubringen, die sind ja alle noch Schüler, also müssen sie noch in die Schule gehen, das ist auch klar. Also geht so was nur über Internate (Deutschland 5).“

boarding school in Frankfurt or in Berlin but he turned those down so that he could study in Bavaria.

“I didn’t want to leave this place, I don’t know where I’m going to study. I think here in Bavaria and I think academic requirements are better here. In Hessen (German state) it is easier as generally known. Yes and I haven’t got that much problems in schools, that I have to go there just for finishing high-school. For me that was out of the question” (Germany 9)¹².

Recently, a full-time boarding school for volleyball has been built in Bavaria (see Germany 9). Yet another swimmer from Bavarian does not go to a boarding school or a school focussing on sport. She complained about the lack of an infrastructure regarding schools focussing on sport or boarding schools in Bavaria compared to the new German states.

Statements concerning boarding schools could also be found in interviews from the former GDR and China. According to an official of the former GDR nation level, most swimmers went to the KJS (sport school for children and adolescents), which concentrated on the demands and obligations of the students (see GDR 3). A coach remarked that every sport school (or KJS) had its own boarding school. The best athletes of each region were delegated into these schools. This statement was confirmed from an interviewed athlete. She remarked that there were small classes in these schools.

“And at the same time it was very positive that schools were adjusted to it. I was in a class containing eight students, at the end only two of them. We had the same curriculum as all the other (students)” (GDR 3)¹³.

China’s better athletes also went to a kind of central school. Thus, boarding schools seem to play a role in this country as well.

“Since the 60’s we have got ten regional swimming schools. Each region has its own swimming school. From class one until class nine a systematic training process is carried out for 200 students in every region. Then the better swimmers are admitted to the central sport school in Shanghai city for an additional two or three years. The good adolescents are further admitted to the Shanghai swimming school team” (China 3)¹⁴.

In the USA no statements dealing with boarding schools could be found.

12. „Ich wollte nicht von hier weg, dann, ich weiß nicht wo ich studiere, ich schätze mal ich studiere hier in Bayern. Und ich denk von den schulischen Voraussetzungen hier ist es besser, wenn man auch in Bayern Abi macht. Weil in Hessen ist es ja doch bekanntlich einfacher. Ja und so große Probleme habe ich nicht in der Schule, dass ich da hin muss, um das Abi zu kriegen. Also das ist für mich eigentlich nie in Frage gekommen“ (Deutschland 9).

13. Und gleichzeitig immer wieder das gute, dass die Schule darauf abgestimmt war. Denn ich war dann in einer Klasse erste mit acht Schülern, zuletzt nur noch zwei Schüler. Und wir haben trotzdem den gleichen Lehrplan wie jeder andere gehabt“ (GDR 3).

Respondents at the local level of the former GDR also mentioned the possibility of *extending years of schooling*. According to them, athletes in the former GDR had the option for extending their school time in order to have more time left for training. Compared to the contemporary German system an athlete from the former GDR remarked the following:

“And that’s the problem today, that the children, if they go for A-level or job training, that their performance declines. Because they haven’t got time possibilities any more. And that was the advantage with us, I told you that I went to school three years longer, that the time normally allowed for me” (GDR 3)¹⁵.

4 Discussion

The present study focused on identifying some characteristics of different talent search systems. In this context, the basic model of inquiry (for more informations see Ruetten et al. article) has been tested and, if necessary, modified. Additionally, the first part of the study should provide a first overview regarding the actual quality of talent selection, identification, and development from different nations.

Within the scope of the analysis, all the variables – structure, process, and outcome – as well as their determinants – structure opportunities, resources, obligations, and goals – for process planning, organization, and control represented in the research model could be identified in the interviews. The indicators mentioned in the beginning of the study were found, other additional categories have also been supplemented.

As a result of the qualitative analysis for the sub-groups involving the infra-structural resources – kindergarten, school, job training and job – the absence of fundamental training in schools was the primary claim for Germany. In contrast, this form of training was available in schools from the former GDR. In the USA, not only is school sport carried out, it is a large part of their sport system and

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14. „Seit 60er Jahre haben wir in zehn Bezirken Schwimmen Schulen. Jede Bezirk hat eine eigene Schwimmen Schule. Von Klasse eins bis Klasse neun wird eine systematisches Training durchgeführt. Und zwar für 200 Schüler in jedem Bezirk. Dann werden die besseren Schwimmer auf die Zentrale Sportschule von Shanghai Stadt aufgenommen für weitere zwei oder drei Jahre. Die guten Jugendlichen werden weiter auf die Shanghai Schwimmen Schule Mannschaft aufgenommen“ (China 3).
 15. „Und das ist das schwierige heute bei uns, das die Kinder, wenn sie in den Abiturbereich gehen oder in den Lehrbereich, dass dann die Leistungen im Sport abfallen. Weil sie einfach nicht mehr die zeitlichen Möglichkeiten haben. Und das war wieder der Vorteil bei uns, das hatte ich Ihnen ja gesagt, dass ich drei Jahre länger in die Schule gegangen bin, dass einfach die Zeit für mich gegeben war“ (GDR 3).

with it the development of talented athletes. Collaborations between sport and school systems seem to be most relevant in Germany. However, these types of systems are also mentioned in China. Sport schools seem to exist most predominantly in the German system compared to the other nations questioned. Whereas boarding schools are more prevalent in the former GDR and China. The possibility to extend the length of time an athlete has to complete school was only identified in the former GDR. In a first preliminary quantitative analysis it turned out that the variables for structure and process were mentioned more often than the result variable. Concerning the second research question, "How were the variables, determinants, and indicators represented in the various countries?", the quantitative analysis showed some differences for China. In contrast to the other countries no differences between the three variables could be found.

As a first conclusion, it can be stated that the basic structure of the research model (see Ruetten et al. article), i.e. the qualitative variables, determinants, and indicators, seem to fit with the present TID systems. It is only the differentiation among the indicators that should be expanded. Furthermore, some alteration containing the relevance of specific questions for the survey dealing with variables, determinant, and indicators emerged.

The findings from the quantitative analysis concerning the variables structure, process, and outcome are noteworthy. Normally, one would expect that elite sport would revolve around outcome and success. The application of success as an evaluation criteria for some arrangements seems to be very common in this area (Emrich & Pitsch 1997; Hug 2001). For this reason the greater importance of structure and process compared to outcome occurring in nearly all countries was surprising. According to the indicators involving financial or personal resources there seemed to be more relevance on systems of talent selection, identification, or development than goal achievement. One reason for this finding could be the form of interview completed here. In fact at the beginning of the interviews, the interviewer asked open ended questions. The respondent had as much freedom in answering the question as they wanted. Furthermore, this form of interviewing was very open for all three qualitative variables. Indeed, the guidelines outlined by the interview mainly concentrated on questions concerning the variables structure and process. A separate analysis of these different areas in the interviews could provide an answer to that question. This analysis will be carried out in the near future. Furthermore the second phase of the research project, where a survey was distributed to athletes (for description see Ruetten et al. article), will provide some more information concerning this research question.

Additionally, the differentiation between the various countries regarding the importance of the qualitative variables should be recognized in the survey during quantification and differentiation of the attributes. In this context one should remember that the Chinese interviews were somewhat shorter than those in the other countries. Because of language and transformation problems the result was less “narrative”. The survey will help for clarification with respect to this viewpoint.

Regarding the qualitative results, differences between the various countries in terms of infrastructural resources emerged. Concerning school and TID, different models of talent development could be identified. In the USA, the sport system is widely integrated in the school system. Our findings agree with Digel (2001, p. 75) who carried out a structural comparison of sport systems in different countries. He also pointed out the importance of sport in schools in the US sport system. In contrast to this the German system incorporates numerous different forms of support services for talented athletes: Collaborations between schools and clubs, sport schools, and boarding schools (Fessler & Rieder 1997; Brettschneider & Klimek 1998; Gorka 1998; Zirolì 1998; Deutscher Sportbund 2001). All of these are different models which try to facilitate connections between schools and an athletes sport career while saving time and expenses for traveling. For the collaboration between school and club, the athletes lives at home, in boarding schools athletes usually live at the schools. The school system for talented athletes in the USA is presumably comparable to school sports in Germany. In both, students don't have to leave their homes and at the same time there is an emphasis on different kinds of sports in schools. Whereas forms of boarding schools can be identified in the former GDR in the form of KJS (Röder w.y., Hartmann 1997) and or so called competitive schools in China (Digel 2001).

In an attempt to get a clearer picture of the results, additional analyses of the data from the various countries will be conducted. Hopefully, the results of this study will provide more evidence regarding the results. With regard to China, this research could possibly provide more insight into their talent search system. Possibly, some of the now existing categories have to be combined. Furthermore, it has to be clarified if some of the identified differences influence outcome.

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