Looking to the future: Analysis of Talent Identification and Development Systems in Different Countries

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BACKGROUND - Talent identification and development (TID) are crucial issues for the future development and the sustainability of elite sport in a country. For example, the systematic TID system (ESA) of the former GDR was a fundamental pillar of GDRs tremendous international success in the area of elite sport. More recently, in preparation of the Summer Olympics in Sydney 2000 Australia successfully adopted some elements of the GDR TID-approach by implementing a ‚TALENT SEARCH PROGRAM". In contrast, the West German system of elite sport did never develop such an systematic approach of TID. Even after reunification in 1990 elements of the successful ESA system were not seriously considered as appropriate measures of TID in a pluralistic society.

The quality of a TID system, may influence the international success of a countrys elite sport in various ways. For example, a comparison of the results of the last olympic summer games showed a particular decrease in medals for Germany (figure 1).

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Medals: Top 5 Nations of the Sydney Olympic Games (in %)

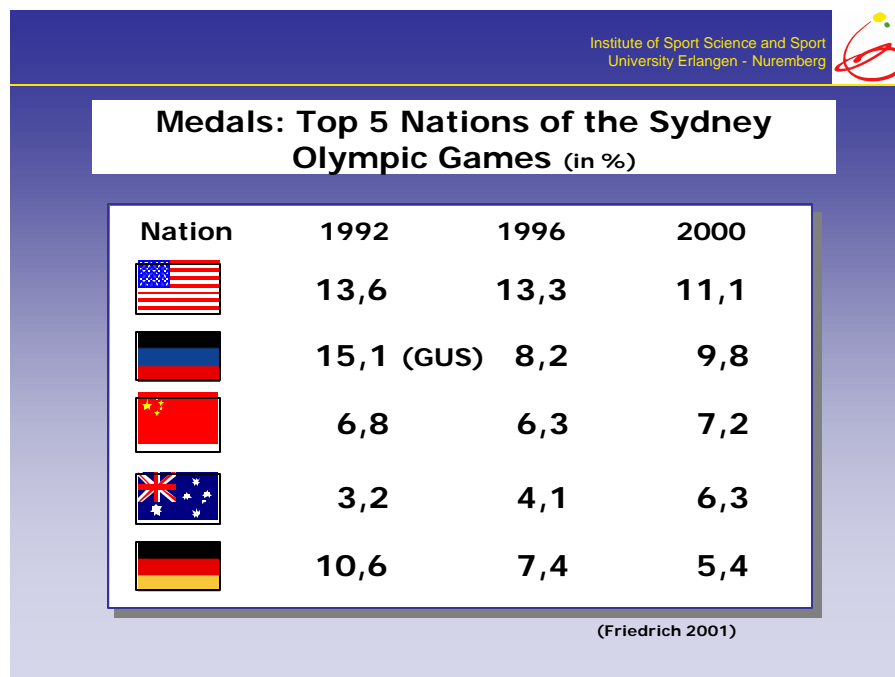| Nation	1992	1996	2000
	13,6	13,3	11,1
	15,1 (GUS)	8,2	9,8
	6,8	6,3	7,2
	3,2	4,1	6,3
	10,6	7,4	5,4

(Friedrich 2001)

Figure 1: Medals - TOP 5 Nations

At the same time, the German olympic team was the oldest team at the last olympic games (figure 2), and it was also the team with the lowest retention rate (figure 3). In particular regarding the latter point, a high retention rate has been emphasised as a major condition of further olympic success (Pfützner et al. 2001).

Figure 2: Average age of the TOP 5

Figure 3: Retention rate of the TOP 5

A high retention rate may be affected by both the quantity of potential talents available and the quality of the TID system. While the talent development in China can start with about 120 million kids in the age of 10-14, the base in Australia is only 1,3 Million (figure 4). Therefore, especially countries with a smaller population seems to be depending on a very systematic approach of TID. Australia with the smallest population of the TOP 5 indeed recently has implemented a systematic Talent Search

Programme (Figure 5), which already showed several achievements with regard to national and international championships (figure 6).

Figure 4: The base of the TOP
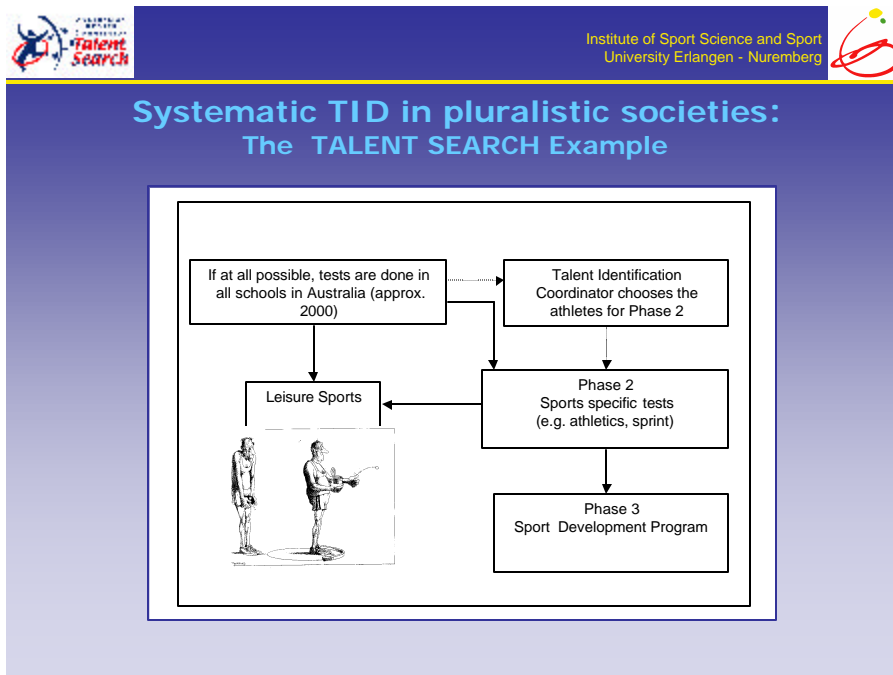
Figure 5: The TALENT SEARCH Program

Achievements of TALENT SEARCH
(AGE COMPETITION (U/23 and below))

Achievements	Year		
	1998	**2000**	**2003**
Junior WC Placing (1st - 3rd)	14	28	52
Junior WC Representations	32	100	144
National Championships	134	353	547
National Championships Top Ten Placings	312	985	2.929

(ASC 2003)

Figure 6: Achievements of TALENT SEARCH

STUDY - Despite the importance of TID systems for the future of elite sport, the quality of such systems has not been systematically analysed. In particular, there is a lack of comparative studies which consider the political and cultural background (e.g. totalitarian vs. pluralistic societies) of TID systems. Moreover, in times of restricted resources and increased international competition, the effectiveness and efficiency of both procedures and institutions of TID become increasingly important. Traditional evaluation, however, often concentrates only on measuring outcomes, thus, leaving athletes, trainers and officials alone with a critical review and the question: But how to improve? – Against this, quality management also relates to structures and processes which are major determinants of TID outcomes.
The present study used a theoretical model of quality and quality management.

THEORETICAL MODELL - The model (figure 7) for the investigation of quality features of different TID-systems is based on three quality dimensions as introduced by Donnabedian (1966), i.e. structure, process, and outcome.
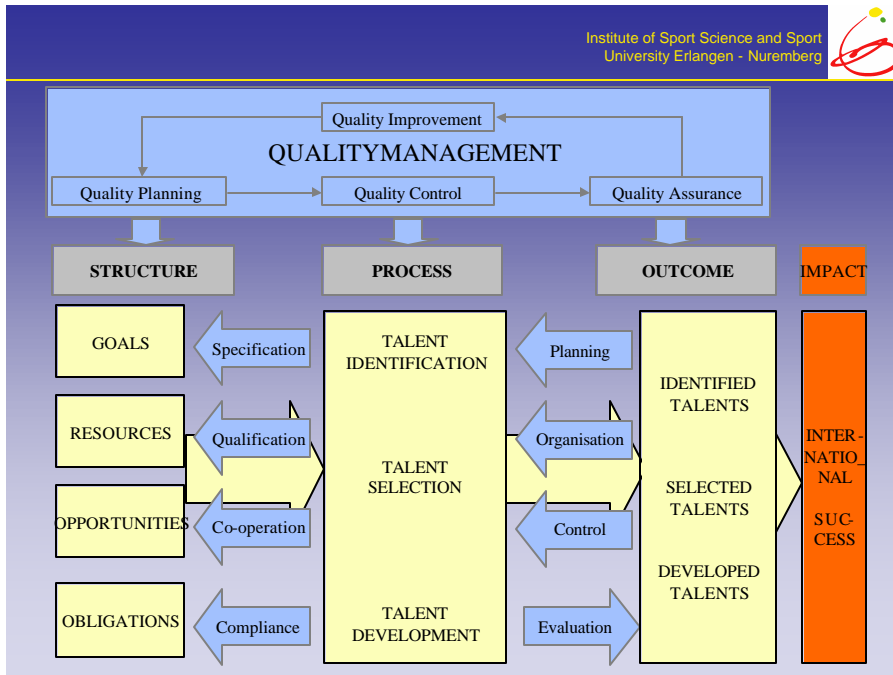
Figure 7: The model of quality and quality management in TID

According to figure 7 *structure* describes the physical, organizational and other characteristics of a system that provides talent identification, -selection, and -development and of its environment. *Process* describes what is done in identifying, selecting and developing talent. *Outcome* describes what is achieved by the TID system, e.g. selected and developed talents or dropped out athletes, and what may finally result in international success (Impact). *Quality management* refers to different measures of quality planning, control, assurance and improvement. For example indicators of quality management are the specification of goals, the qualification of personal or the documentation and evaluation of processes and outcomes.

OBJECTIVE AND METHODS – One aim of the study was a comprehensive comparison of Talent Identification and Development (TID) systems. Differences and similarities of TID systems that are used by various social systems were evaluated (figure 8).
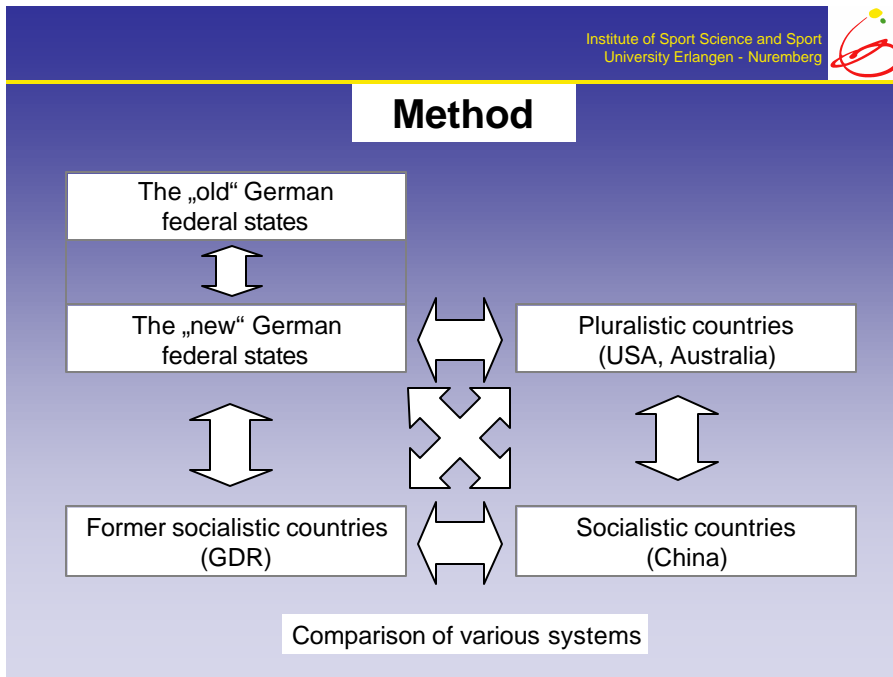
Figure 8: Comparison of TID in various social systems

The investigation was carried out in four sports:

⇓ Gymnastics

⇓ Team sports (volleyball)

⇓ Swimming

⇓ Track and field (running events)

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). Respondents from the former GDR were asked in retrospective.

After a first phase of quality research including a series of indepth interviews a questionaire has been developed and used for a survey in Australia, China, Germany and USA.

Levels of inquiry
(The German example for 1 sport)

	officals	coaches	athletes	N (all)
Nation level	N=5	N=2 (National - coaches)	N=20 (National- team)	N=27
State/ regional level	N=5	N=2 (National - juniorsquad)	N=15 (National- juniorsquad)	N=22
Local level	N=8	N=2	N=10	N=26
N (all)	N=18	N=12	N=45	N=75

Sample for the whole survey: 75 x 4 sports = 300 x 4 nations = 1200

Figure 9: Levels of inquiry

In Figure 9 the levels of inquiry for the German part of the study are represented. The system in Germany was used as a starting point to compare the different systems. Informations about the different sport sytems were gathered by literature review. In each country three levels of inquiry were considered: the nation level, the state/regional level, and the local level. Overall for each nation n = 300 interviews were conducted.

FIRST RESULTS – A description of preliminary results firstly deals with the predictive power of the general model, and then concentrates on a comparison of Australia (n = 90) and Germany (n = 182). With regard to the general model, the perceived quality of TID-structures and processes predicted more than 50% of the variance of perceived TID-outcomes. The strongest predictors for positive outcomes were resources (e.g. finances, personal, infrastructures), and opportunities (e.g. economic or scientific support).

Figure 10: Predictors of Talent Identification Outcomes

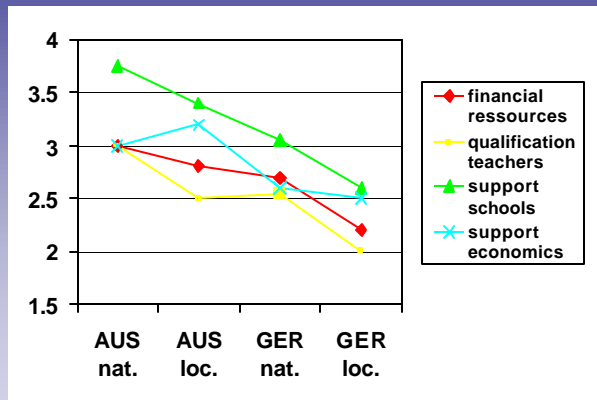With regard to a comparison between nations, Australian athletes, trainers and officials had a significantly better perception of resources (especially better financial resources) and opportunities (especially support by school, and economic support) than their German counterparts.

Further results indicated that specific deficits of German TID-system were located at the local level (figure 11). For example, as shown in figure 11, *financial resources* (Australia local M: $2,87 \pm 1,28$; Germany local M: $2,19 \pm 1,14$; $p<0,05$ (5 point likert scale: 1 doesn't apply at all - 5 does totally apply)) and the *qualification of teachers* (Australia local M: $2,47 \pm 1,38$; Germany local M: $2,00 \pm 1,04$) may be responsible factors for deficits in talent identification at the German local level. For the quality of opportunities results showed in Germany deficits in the context of cooperation between schools and the TID-system at the local level (Australia local M: $3,37 \pm 0,72$; Germany local M: $2,67 \pm 0,96$; $p<0,05$ (Score: 1 worsened a lot -5 improved a lot)) and of economic support (Australia local M: $3,17 \pm 0,95$; Germany local M: $2,53 \pm 1,08$; $p<0,001$).

**First Results: Differences in Resources
and Opportunities for Talent Identification**

Quality of ressources and opportunities (AUS = Australien, GER
= Germany)

Figure11: Comparison of significant predictors in different nations for the national and local level

Regarding the quality of talent development (figure 12) at different levels, in Germany deficits were identified for the quantity of athletes supported (Australia local M: 3,32 ± 1,08; Germany local M: 2,52 ± 0,89; p<0,05) and for the available budget (Australia local M: 2,81 ± 1,22; Germany local M: 1,97 ± 0,75; p<0,01). The perceived lack of economic support (Australia local M: 2,94 ± 0,96; Germany local M: 2,55 ± 0,85) and scientific support (Australia local M: 3,84 ± 0,86; Germany local M: 3,42 ± 0,67; p<0,01) may be main factors of the low rating of opportunities for talent development at the local level in Germany.

**First Results: Differences in Resources
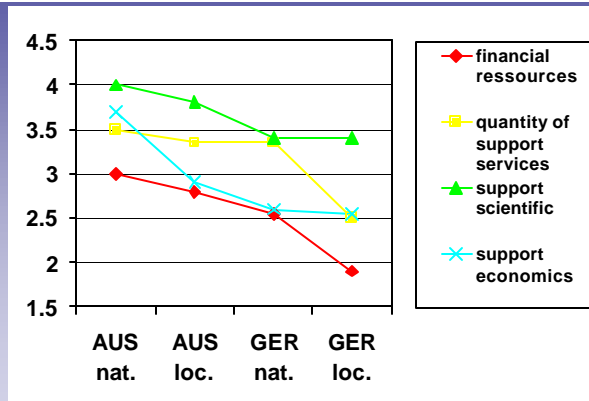and Opportunities for Talent Development**

Quality of ressources and opportunities (AUS = Australien, GER
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Figure 12: Comparison of significant predictors in different nations for the national and local level

PRELIMINARY CONCLUSIONS

Before discussing potential implications of the results, the limitations of the present study have to be considered. In particular, the study focused on the perceptions of athletes, trainers and officials rather than measuring structures, processes and outcomes in a more objective manner. Thus, external indicators should be included in further analysis to test the validity of the results produced so far.

From the present point of view, three preliminary conclusions can be drawn:

1. The general model applied in the present study showed high explanatory power with regard to the prediction of TID outcomes. Within the model, the quality of resources and opportunities related to TID processes turned out to be the strongest determinants of the quality of TID outcomes. This might suggest to use the model to develop appropriate measures for improving the most relevant TID quality structures.
2. In comparison to the Australian TID system, TID in Germany showed general deficits regarding significant predictors of positive TID outcomes. For example, the Australiens had a better perception of the quality of ressources and opportunities than the Germans. This might suggest that TID in Germany should especially focus on improving the most relevant resources and opportunities
3. In comparison to Australia and to TID at the German national level, TID in Germany showed specific deficits at the local level. For example, in terms of talent identification the Germans perceived the quality of qualification of teachers for talent identification or the support by schools poorer than their Australian counterparts.

Based on these conclusions, a new approach, particulary focusing on the local level, have been developed and will try to improve economic and scientific support, cooperation between schools and clubs, and qualification of teachers and coaches in the German TID system. A major pillar of this new approach is partnership building. For each local project a cooperative planning group will be founded to integrate perspectives of different stakeholders (athletes, coaches, officials/administrators, parents, teachers etc.), policymakers and scientists (figure 13). The groups will integrate specific knowledge from each, and a mutual learning process will support the development of shared values and common understandings. The planning groups tackled four interrelated challenges:

- Applying scientific knowledge: bridging the gap between science and stakeholders
- Empowerment: ensuring participation and acceptance of stakeholders
- Policy orientation: focus on implementation
- Forming alliances with other sports: reducing the sliping through the net problem, ensure talent transfer

The planning and implementation approach is intended to integrate a top-down and bottom up intervention, provide for organizational development, and create intersectoral networking and a sustainable infrastructure for the implementation of a high quality TID system.

Key elements of a new implementation structure for TID at the local level

Principles   Levels   Outcome

•TID policies
•Policies of other sectors

•TID agendas and policy issue networks
•Investments for TID

Creating quality assured TID
Community Engagement
Building alliances
Securing investments

Cooperative planning

•Outcomes defined by the cooperative planning group

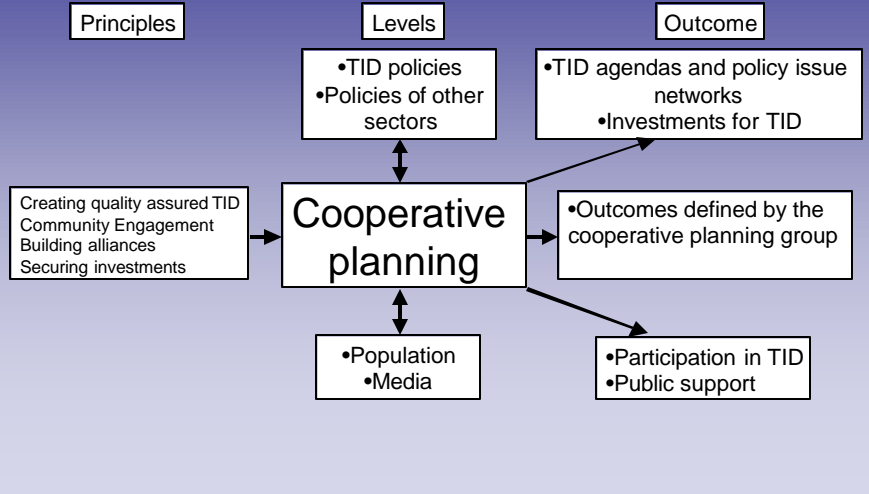•Population
•Media

•Participation in TID
•Public support

Figure 13: Key elements of an implementation strucutre for TID at the local level