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Talent Identification - Development and Problems in Handball

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1- VIEWS ON TALENT SEARCH

Scientific disciplines searching talent generally produce only the studies having two characteristics (*genetic talent potential and environmental factors*). In the attitude examination related to the study of genetics and environmental problem, while genes demonstrate the potential, environmental factors (especially education) determine the usage level in improvement for this potential. Singer sustains that development in different age periods should be taken into consideration in addition to these two factors. Because child's development can effect his or her body composition, physical and anthropometric characteristics.

According to Schnabel and Thieß (1993), searching talent refers to all measures contributing to identify young people, who are suitable for taking into workouts and directing high performance sports, among a lot of children and young people making sports. According to Marées (1988), if elimination is done among more children and young people, success possibility increases in "talent identification".

It should also be understood that talent identification is not an event to be done only for once but it is repeated in all steps of long-term performance construction under the workouts, which are systematic and intended for performance. Talent search is a must for talent identification.

Scientists on sports claim that sportive talent should be intensified on 3 subjects. These are **physical (motor), mental and social characteristics**. The data obtained from these measurements gives the information about "general sportive talent" of the young sportsman to the coach but not his characteristics specific to a sports branch. While mental and social measurements are ignored a bit under the scope of talent identification in individual and team sports, the tests measuring motor characteristics and physical magnitudes are frequently used. Weineck (1990) compiled the criteria subjects as the following:

- ❖ Anthropometric values
- ❖ Conditional motor characteristics
- ❖ Techno-motor skills
- ❖ Ability to learn
- ❖ Readiness for efficiency (hardworking, effort etc)
- ❖ Cognitive characteristics or skills
- ❖ Affective characteristics (stamina)
- ❖ Social factors

According to Kupper (1993); talent identification for handball is done according to the criteria of tempo of development of game performance in early ages (the basic indicator for sportive efficiency in the future) and the degree in being able to benefit from the characteristics affecting sportive performance (condition, technique and tactics etc) in talent identification. (This model aims to determine the development instead of measuring the condition)

2. CRITERIA USAGE IN TALENT IDENTIFICATION IN HANDBALL

2.1. 1. Talent criteria: **competition performance and development tempo**

Competition performance is a result of attitudes carried out by a player or a group of players in a match. Maximum game performance is the most basic and final goal in the education stage. It means that periodic evaluation of competition performance is a definitive factor in directing players functionally (Taborsky.F.2001).

Computer-equipped video analyzing methods are used to make quantitative analysis of competition performance and to estimate performance development tempo. Video data are evaluated according to the scale shown in schema 1. According to this, performance of each player may be calculated referencing to Flaganan's Critical Incident Technique evaluation by the equation below transferred by Taborsky.

$$V_i = \Sigma P_i + (1/2 M_i) + \Sigma N_i$$

According to the formulation, an individual's competition performance score (V_i) is calculated as average of two positive scores (P_i) stands for all positive points and $(1/2 M_i)$ stands for half-time of the game) and a negative score (N_i). Then, performance of the team is calculated by arithmetical average of the scores of all players ($V_t = \Sigma V_i$). (Taborsky F. 2007)

Schema 1: Game value scales relating to estimating Competition Performance Index in handball (Handball: Ulrich, 1998)

Positive values		Negative values	
Goal from game founder	1,0	Unsuccessful blocking	-0,4
2 minutes penalty	0,7	Losing ball	-0,4
Goal from near distance	0,6	Unsuccessful back court throwing	-0,4
Blocking goal by taking assistance		Unsuccessful near distance goal throwing	-0,6
	0,5	Progressive penalty (yellow card 2 minutes penalty)	-0,8
The assistance causing near distance goal throwing		Losing two-person competition	-0,8
	0,4	Faulty ball-losing causing goal throwing	-0,8
		Causing 7 m throwing	-0,8
Successive blocking	0,4		
7 m penalty throwing won	0,4		
Obtaining ball	0,4		

The concept of Performance Development Tempo: It is obtained by ratio of the competition performance to the individual performance.

2.2. 2.Talent Criteria; **development of performance components**

In this chapter, such evaluation will be presented for making an idea.

The definitive variables intended for benefiting from performance components and the appropriate tests are shown on Schema 2.

Schema 2: Definitive variables for comparison between talent groups in girls and boys.
Small deviations were seen in the definitive variables between two sexes.

	Definitive variable	Relevant characteristics and the tests applied
WOMEN	1 – Movement diameter	Movement diameter of shoulders
	2 – Complex speed	30 m. Sprint, 30 m. standing start sprint
	3 – Body nature	Height, weight, fathom length
	4 – Arm force	Explosive power: Ball throwing
	5 – Leg force	Explosive Power: Vertical jumping, long jumping while standing (right – left, double legs)
	6 – Simple Technique/ Coordination	30 m. ball driving, 30 m. Slalom ball driving/ Vienna coordination test battery
	7 – Complex Technique/ coordination	Speed with ball in complex test, movement quality with ball in complex test
	Definitive variable	Relevant characteristics
MEN	1 – Basic speed	Visual simple reaction, foot pressing speed test
	2 – Complex speed	30 m. Sprint, 30 m. standing start sprint
	3 – Body nature	Height, weight, fathom length
	4 – Arm force	Explosive power: Throwing ball faraway
	5 – Leg force	Explosive power: vertical jumping, long jumping while standing (right – left, double legs)
	6 – Technique/ Coordination	30 m. ball driving, 30 m. Slalom ball driving/ Vienna coordination test battery, coordination test with ball, speed and movement application quality in complex test with ball

A test battery, which is used in second identification stage, and applications results are given below as an example. The tests were applied to the handball players, who were chosen and not chosen for Israel National Cadet Team, at the beginning and end of two-year education. The test battery is consists of five conditional motor tests, **1 agility test, 2 explosive power tests and 2 speed tests and additionally slalom ball driving test indicating speed, agility and ball driving abilities**. Height and weight measurements are considered as sufficient in physical measurements. The evaluations of reliability, validity and objectiveness of these motor tests in this battery were done and published in literature (R.Lidor et al 2005).

The results obtained from statistical assessment according to the results of the applications may be summarized as the following:

The main finding understood as a result of two-year education is that there is an important overlapping between motor and physical performance results of the players, who were chosen and not chosen for National Team (however, still playing handball). With the exception of slalom skill test, none of the motor and physical tests, which were applied at the end of the

two-year education program, was sensitive enough to distinguish chosen and non-chosen players.

Any difference was not observed between heights and weights of chosen and non-chosen players. Although height is considered as an important variable in handball, it was seen that the chosen players were not taller than non-chosen players in talent identification and development steps. However, it was seen that both chosen and non-chosen players were taller than others in their age groups. Also, in another study, it was seen that the players of the teams found at top of the list in European Championship were not taller significantly than those, were playing in the teams found at bottom of the list.

Sprint is one of the basic motor characteristics in handball. The chosen players run more rapidly in final measurements only in standing start sprint compared with those, who were not chosen (both men and women). The only test, which supplies consistent data on talents of the players of cadet handball team compared with the others, is slalom test. It should be kept in mind that this test is the only test in which players use handball technique. As a result, it was proved that the tests measuring only motor characteristics do not allow distinguishing “well” from “very well” players in ball games. (R.Lidor et al 2005).

2.3. The role of subjective data in talent identification

Some special talents cannot be identified only by the observative methods above. The said talents may be identified by observations. These are for example performance motivation, hardworking, psychological strong, risk taking etc. As a result, it may be said that the combination of individual objective data and subjective methods which contains evaluations made by specialists is optimal to make a total evaluation.

3. TALENT DEVELOPMENT IN HANDBALL

3.1. The sequence and content of development training

Talent identification and development is integrated and simultaneous works in a long term training process (Hohmann & Seidel 2003). The success is obtained only by a **time – talent – proper training program** strategy. In such talent strategy, the object should be creative play development.

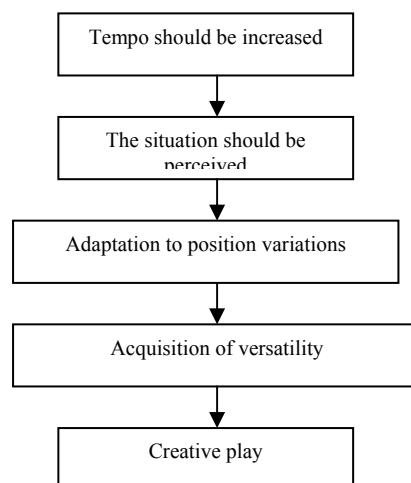


Figure 3: Handball training stages according to long-term development goals (Ehret, Spaete and Schubert, 1994)

The success desired is won only by systematic sportive workouts in the training process. The **nature and content** of these workouts have importance in winning success.

The data about **performance components** determining competition performance specific to handball are the criteria, which are frequently employed in talent identification and development. These efficiency components of handball performance shown on Figures 4 and 5 may explain the training nature of development process.

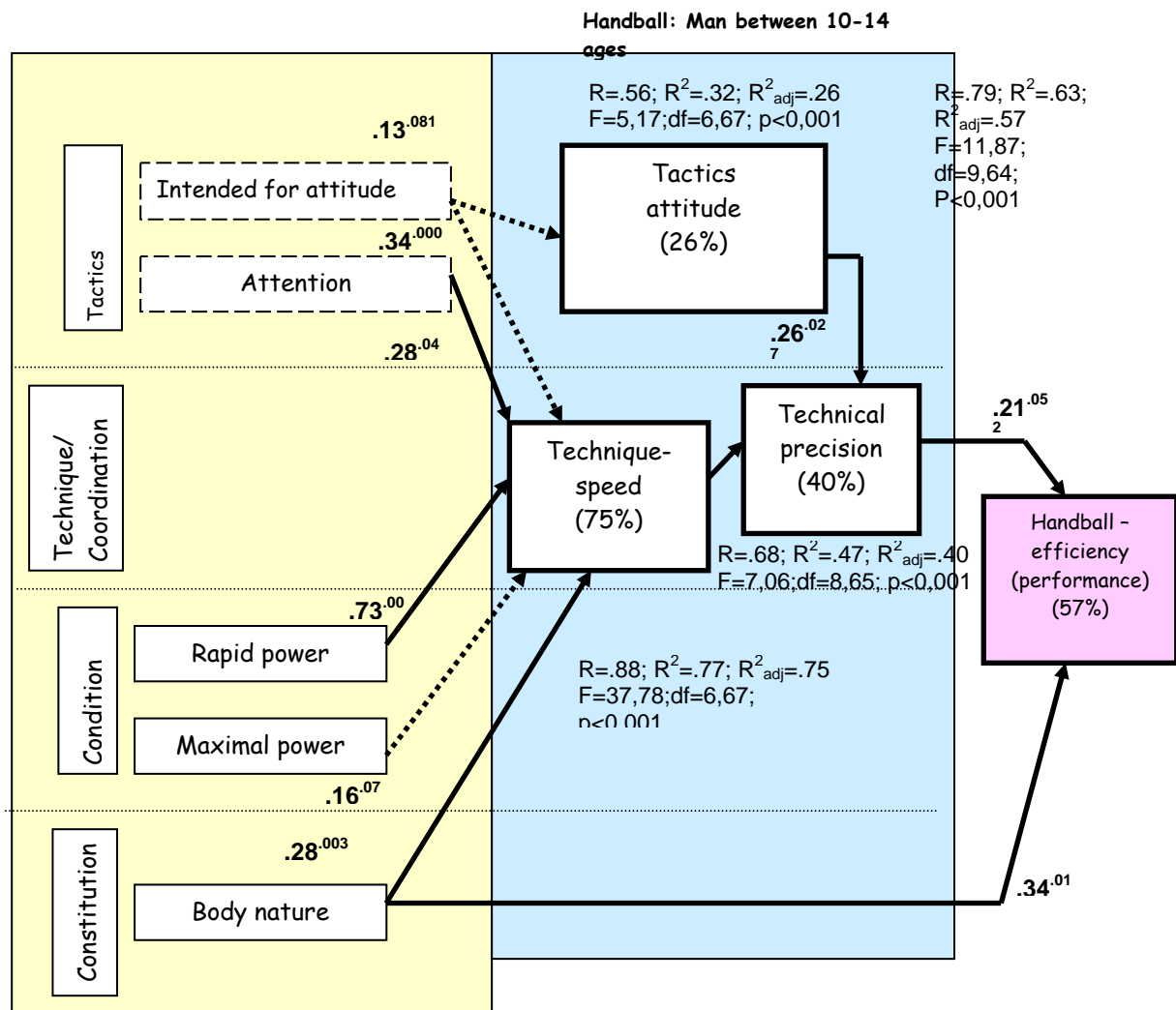


Figure 4: Performance structure model specific to age carried out by statistical evaluations of younger handball students in sports-weighted schools (n=112) (Hohmann, 2005).

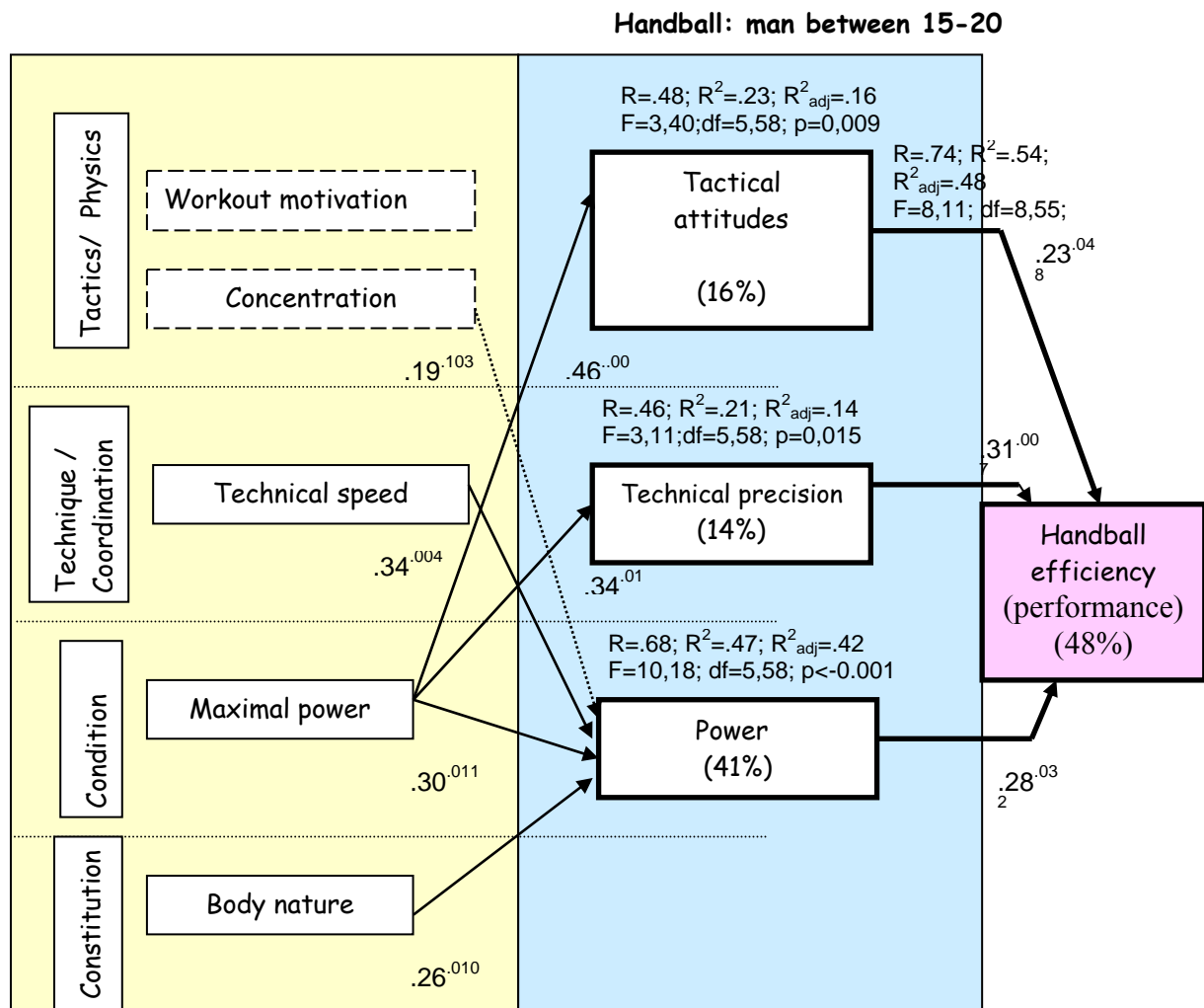


Figure 5: Performance structure model specific to age carried out by statistical evaluations of older handball students in sports-weighted schools (n=106) (Hohmann. 2005)

The model shows central position of **technique and speed** in workout priorities catalog for younger handball players. Rapid power and tactical attitude become important as much as technique and speed training in older players to create a handball performance.

In brief, developments process competition performance and its components give the first clue for development works to be applied in handball. However, competition performance in this process is not sufficient alone to guess exactly the final performance in the future (Wendtland 1984).

Under the light of these theoretical determinations, an example is given below intended for workout content and sequence for long-term practice.

Schema 3: Main content subjects in long-term development workouts (Spaete / Ehret 1994)

Development and age steps	General principles	Main training subjects intended for defense	Main training subjects intended for offense
Up to 12 years old 1st step	<ul style="list-style-type: none"> - Wide range motor training - Free play 	<ul style="list-style-type: none"> - Different types of man-to-man defenses (from center line to free throw line on the full court). - Pre-tests for local defense (for example man-to-man/local defense combination: 3:0+3,4:0+2) 	<ul style="list-style-type: none"> - Basic collective techniques (Basic throw, pass, catching the ball, tricks) - Collective game tests in basic arrangement (1:0,2:1,3:1 etc)
Under 13-14 ages 2 nd step	<ul style="list-style-type: none"> - competence intended for position has not existed yet - Versatile basic training - Individual tactic training independent from development situation - Bases for play talent 	<ul style="list-style-type: none"> - Defense (intended for man) (1:5,3:3,3:2:1) - Test matches (for choosing) (man-to-man 5 minutes in each half) - Basics for individual tactics 	<ul style="list-style-type: none"> - Transition to the game intended for 3:3 position, position alterations in width and length in the court - Individual tactics (such as 1:1,2:1) - Main forms of group tactics (offenses, cross-transitions, block) - Quick alterations in offense/defense
Under 15-16 ages 3 rd step	<ul style="list-style-type: none"> - Becoming competent provided that in one way in the region (as being versatile) - Individual tactics with an approach specific to the position with - Improving game skills 	<ul style="list-style-type: none"> - Defense intended for ball (offensive) 3:2:1 - transition from 3:2:1 defense to 4:2 defense (or visa versa) - Group tactics, securing, cooperation, passing the rival through, blockage 	<ul style="list-style-type: none"> - Continuing the game with position alterations; improving cooperation in group tactics (in pairs) transitions from basic arrangements to variations - Individual tactic intended for position - Quick offense (1st and 2nd waves)
Under 17-18 ages 4 th step	<ul style="list-style-type: none"> - Training intended for position by considering training in other positions too - Improving counter-play talent against variable defense situations 	<ul style="list-style-type: none"> - transitions from 3:2:1 defense to 6:0 -6:0 defense - Individual tactics in variable situations (defensive, offensive, anticipating) - Adapting variable defense types to the game 	<ul style="list-style-type: none"> In the game, - Continuing to produce offensive solution ways - Accelerating game-founding stage (changing the tempo of the game) - Practicing improved quick offense from the second wave

4. PROBLEMS IN TALENT IDENTIFICATION AND DEVELOPMENT

4.1. Methodic problems in talent identification

Although specialists in talent identification and equipment in sufficient number are available, the problems mentioned below always exist.

Therefore, scientific studies on determining parameters and solutions the problems below should be done.

4.1. 1. Cut-off value problem

It can be said that talented children are distributed in the general population equally according to the “bell curve” of Gauss (Figure 6). However, in identification of extreme talent, that they are shown on right hand side of the distribution curve does not reduce the problems in talent identification. The problem is which level the relevant cut-off value should be at in talent identification (Hohmann & Carl 2002). If cut-off value is held high (considering standard deviation as 2), approximately 2.3 percent of children, who are tested in relevant age group, will be higher than average according to this evaluation (Ljach 1997). If a cut-off value, which standard deviation is 3, is taken, those, who are considered as high-talented, will account for 0.13% of the population. As seen, if cut-off values are too high, extremely talented children may be identified as significantly absolute. However, many children, who have similar talent or are growing more slowly, will be deprived of workouts and their performances cannot develop. Moreover, if some of them drop out workouts or they are eliminated by the organization executing sports training program, talent identification will become a business, which is not economic.

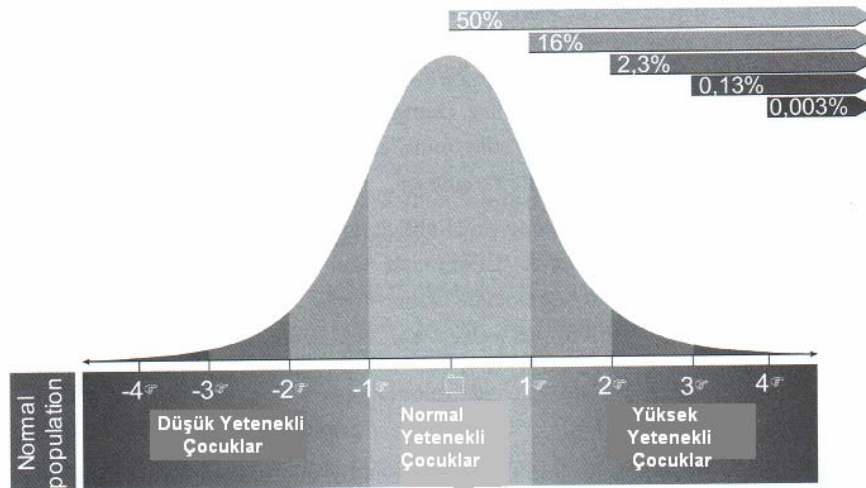


Figure 6: Gauss's normal distribution model “bell curve” as statistical base for talent identification (Hohmann 2005).

On the other hand, too low cut off values cause unsuccessful identifications and make talent search and identification system expensive and unnecessary.

4.1.2. Calendar age – Biologic age relation

Another problem in talent identification is caused by variations in calendar and biologic ages of young sportsmen. The children and young people, whose birthdays are at the beginning of the year, are preferred systematically in talent identification works held in certain periods of year by benefiting their calendar age. It was determined that more than 70 percent of the children, who were registered in English National Elite Football school in Lilleshall by election, were born within the first four month of the relevant year (Brewer, Balsom & Davis 1995 and De Simmons & Paull 2001).

The problem relating to calendar age – biologic age lasts until adult ages. That the children, whose biologic ages are higher and early-growth physically and cognitive-psychologically, are chosen and thus taken into the scope of more valuable workout may cause problems in the group (such as causing unjust election feelings). That young sportsmen, who were born in



different periods (months), make workouts together and make competition make the solution of this.

4.2. Problems encountered during talent development process

Some problems are encountered in talent development process until reaching to the final performance. They should be observed as being aware:

4.2.1. Early-Drop out sport

Although it is desired too much, unfortunately, the expected development in successfully estimation of sportsmen to be successful in the future (prognosis) may not occur. The most important of them is that the sportsman drops out handball in early ages. Many scientific factors may cause this situation such as the followings:

- ❖ It is that high-level homogeneous competition performances are started to form among sportsmen. This can be called as “narrowing of specific success range”. In this situation, efficiency levels of many sportsmen generally at top become closer. Some sportsmen cannot bear this competition and thus, drop out handball.

- ❖ One-way, monotone and intensive workouts create psychological saturation and boredom. Especially the workout content, which is not suitable to age level (for example intensive interval works caused by lactate anaerob loads) may cause many problems and may cause even sportsmen drop out.

- ❖ Another important reason of drop out sports during development process is events relating to injuries.

- ❖ The select sportsmen, who are older and have high-performance, tend to protect their positions in the team because of economic reasons and consequently, this situation causes hopelessness among provisional team players.

- ❖ Another important reason is that successful immigrant handball players are preferentially taken into the team.

4.2.2. Early specialization

Another problem occurs in calculating upper age limit for higher level efficiency for directing talent. The tendency starting performance workouts in earlier ages causes starting specialization training in earlier ages also.

The risks caused by early specialization with sports biology and workout approaches may be listed like the following:

- ❖ Unilateral intensification and workout content cause versatility principle, which is the basic characteristic of workout for this age, neglected.

- ❖ Unilateral and excess physical intensification may cause permanent and temporary injuries in muscle and skeletal system and also imbalance in muscle development. This situation also causes injuries.

- ❖ It creates a factor restricting mobility range.

4.2.3. Negative effects of parents, coaches and media

Parents' support is important and necessary for talented children during their sports life for success. According to a study on this matter, while positive attitudes of parents contribute to performance of children at a rate of 59%, their negative attitudes affect negatively their children's performance at a rate of 36%. These negative attitudes may be listed as the following:

- ❖ To emphasize success excessively, unrealistic expectations, to emphasize negative aspects of children



- ❖ Restricted financial sources of parents to meet financial requirements for children's talent development.
- ❖ Unjust attitudes of coaches, failing in making empathy, preparing and applying inappropriate workout programs for the children's age, considering winning as success.
- ❖ Exaggerated evaluation of media causing children, who are high-talented, spoiling socially (social seduction), and self alienation.

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