

# What is Developmentally Appropriate Sport?

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'Developmentally Appropriate' is one of those phrases, isn't it? It is a phrase that is simultaneously compelling and artfully vague. 'Child-centred' is another; 'Individualised' and 'personalised', too. Their power lies partly in the fact that they capture a quality that most of us would simply take for granted as a good thing. After all, who would knowingly advocate inappropriate activities?

An inherent problem with these sorts of concepts, though, is that their very credibility can mean that they are not fully examined. When this happens important, even crucial ideas are in danger of becoming empty clichés.

With this concern in mind, I want to save 'developmentally appropriate sport' from the curse of credibility, so that it can offer direction and guidance for teachers and coaches as they plan and deliver their work with young people. In doing so, I offer my interpretation of research from a number of relevant fields, such as psychology, anatomy, physiology, and sport pedagogy. I claim no final authority here. On the contrary, this article will have fulfilled its purpose if it stimulated others to articulate the principles of 'developmentally appropriate' more coherently than I have here.

## Child Development 101

The collective wisdom from decades of research into children and sport can be summarised in just three points:

- 1) Children are not mini-adults;
- 2) Children are not mini-adults;
- 3) Children are not mini-adults.

Point '1' relates to the unarguable fact that children's minds and bodies work differently from adults. They process information, pay attention, move and exercise in distinctive ways. Many sports scientific principles that underpin conceptions of good practice simply do not apply to children. For example, we have been taught that benefits of exercise come from sustained activity above a certain threshold. But the most cursory observation of young children's physical activity reveals that it is stop-start, and of wildly varying levels of intensity.

Point '2' refers to movement development. With a few exceptions, adults engage in a small number of physical activities that require quite specialised motor skills. These skills predominantly relate to games with names (golf, judo, netball, and so on). Children are still laying down the foundations of their movement competence. Much of the pre-adolescent phase

is taken up with the development of fundamental movement skills – running, jumping, twisting turning, stopping, starting. These skills are necessary for subsequent physical activity. They are best developed in an atmosphere that could be characterised as 'play' and are intrinsically motivating (kids do them for they love the movements themselves). Also, importantly, these basic movements are best developed through engagement in a wide range of activities that are adapted to reflect the distinctive needs of children. In terms of early movement development, variety really is the spice of life.

Finally, Point '3' reminds us that, whilst "us adults" play sport for lots of different reasons – weight loss, elite competition, socialising, reproduction – the vast majority of children play sport for only one reason – fun.

Developmentally appropriate teaching and coaching is an attempt to put into practice what we have learnt about human development. It recognises that, if we want children to enjoy sport and to continue to do it throughout their lives, we'd better acknowledge some of the basic facts of their development.

You might think that this is all rather obvious. But if it is, I'm led to wonder why there is still so much inappropriate practice going on. Maybe we would expect the odd rogue teacher or coach to stand in opposition to recognised good practice. But this does not explain more structural things like:

- Children playing full (or nearly full) sided) games, or following adult-designed rules;
- Children being selected for teams based on their relative age or physique;
- Later sporting performance being predicted from early childhood;
- The concept of 'early specialisation sport'.

The list could go on and on, but I hope these few make my point. It seems to me that none of these practices can be described as developmentally appropriate. They either assume that children's and adults' needs and interests are more or less the same. Or that adults' sporting ambitions ought to dictate children's recreational actions. The first assumption is factually wrong. The second is heading towards being morally wrong. This is a serious matter, especially for those who try to persuade politicians, policymakers, practitioners and parents that sport is a really good thing for children, and that every child needs to experience regularly.

## Some Principles

I have hinted at some of the principles that might inform developmentally appropriate sport. Now, let me be more explicit about some of the building blocks.

### 1. Biology does not celebrate birthdays

There is a strong tendency in both physical education and youth sport to rely on chronological age as the main criteria for grouping children, but this is an extremely poor measure. At any given age, there will be children of the same chronological age who are up to 2 years older or younger in terms of development. The easiest way to see what this means is to look at a group of half a dozen ten or eleven year old boys and girls together. What will be obvious straight away is a stark variation in height.

### 2. Childhood can usefully be thought of in terms of stages of development

The child's developing body and brain alternate between periods of rapid growth and stability. This pattern has enormous significance for coaches, since learning complex skills can be tricky if the body is rapidly changing.



Figure 1: Two 11/12 year-old girls

	3 – 6 years	6-12 years	12-17	17+
Developmental Markers and Characteristics	<ul style="list-style-type: none"> <li>• Relatively rapid physical growth</li> <li>• Rapid brain development</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively slow physical growth</li> <li>• Steady brain development</li> <li>• Improving memory, decision-making, and attention-span</li> <li>• Reasoning abilities are limited</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively rapid physical growth</li> <li>• Initially rapid, followed by steady brain development</li> <li>• Physical and psychological maturation rarely occur at the same pace</li> <li>• Young people start to identify and commit to one or a small number of sports</li> <li>• Abstract thought becomes well-developed</li> </ul>	<ul style="list-style-type: none"> <li>• Relatively slow physical growth</li> <li>• Steady brain development</li> <li>• "End of the Beginning" - physical and emotional development continues, although at slower rates than before; preparing for adulthood</li> </ul>

I hope it is not difficult to imagine some of the implications of this pattern for effective sports practice.

### 3. Performance is a poor indicator of ability

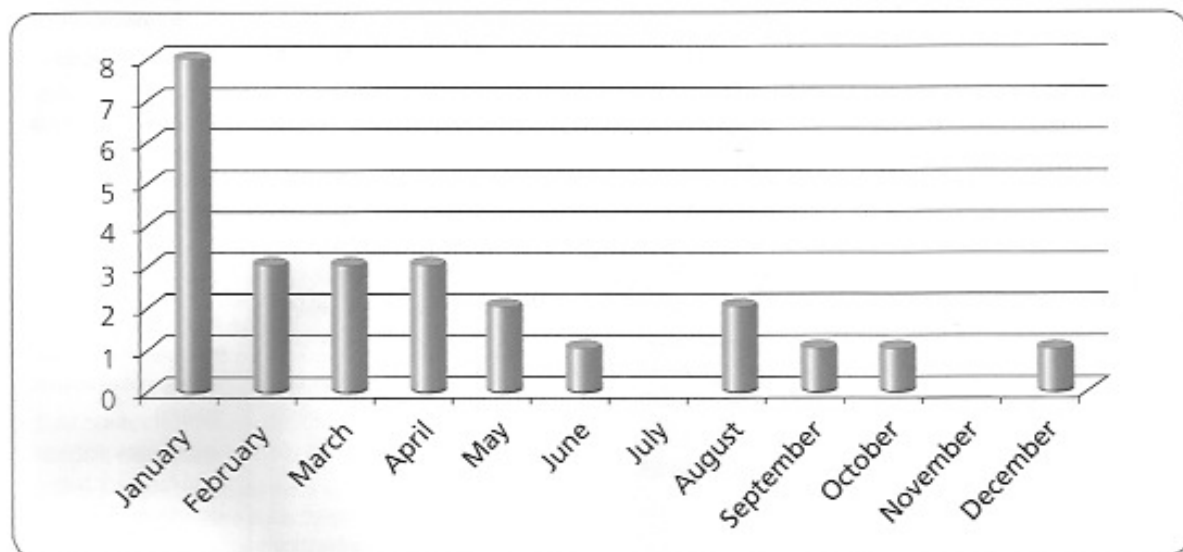
Many coaches and teachers continue to believe that the identification of talent in children is a relatively simple matter. They use essentially the same procedures used with adults, namely observing in practice and in competition, direct comparison with peers and occasionally some sort of "sciency" testing. Those who perform best are the most talented, right? Wrong!

It is almost impossible to make valid and reliable assessments of children's sporting performance that can be translated in terms of talent. The extent that this might seem a shocking statement is an indication of how over-zealous teachers and coaches have

simply ignored a host of factors that undermine the whole childhood talent enterprise. For example:

- **Relative Age Effect** – every age-based group of children will include those who are relatively young and those who are relatively old. The older children will have spent up to a year longer than their younger peers developing their bodies and practising their sport. And since maturation is the single greatest determinant of physical performance, it is hardly surprising that children born early in the selection year dominate.

Take a look at this chart, which shows the birth dates in a player roster of a Canadian elite junior Ice Hockey League:



This league selects from January; if it selected from September like in the UK, exactly the same pattern would emerge, albeit peaking on and just after September.

Perhaps you want to explain this pattern with reference to astrology: in Canada, Capricorns are good at Hockey; in the UK, Virgos are good at Football, or Netball, or pretty much anything that gives an advantage to the most mature.

- Social and economic factors are massively significant – generally speaking, children are unlikely to develop high-level sports skills if they have never learned that sport and had the opportunity to experience high quality coaching. The curse of most sports system is that opportunity is heavily mediated by factors that have absolutely nothing to do with the child's interest or ability.

Here is a summary of some of the social and economic factors linked to high performance in sport:

- Parents achieved high standards in domain
- Relatively high socio-economic status
- Ability and willingness to financially support participation and specialist support
- Ability and willingness to invest high amounts of time to support the child's engagement in the activity

- Parents as car owners
- Relatively small family size
- Two-parent family
- Attendance at Independent School

Countries vary in the details, but the basic pattern is the same (at least in the developed West): the most powerful benefit most from sport. How else do we explain this startling phenomenon: half the UK's gold medallists at the last Olympics were privately educated, even though that group made up just seven per cent of the population? It takes nothing away from the extraordinary achievements of elite athletes to suggest that they have benefitted from a system that confuses opportunity with ability.

I am aware of the limits of space, so I should stop there. There are plenty of other principles, and perhaps I will return to discuss them on another occasion. Some are so blindingly obvious that it is truly staggering that people are still arguing against them, such as an emphasis on long-term development, small-sided games, adapted equipment, restriction on the frequency and form of competition, and an ever-present emphasis on fun. But by way of conclusion, I will limit myself to some brief ideas, clustered according to the phase model I suggested earlier.

	3 – 6 years	6-12 years	12-17	17+
Developmentally Appropriate Practices	<ul style="list-style-type: none"> <li>• Young children need time and space to move</li> <li>• Physical activity should primarily have the character of creative play and experimentation</li> <li>• Activity should be a part of the child's daily life</li> <li>• Boys and girls should play together</li> </ul>	<ul style="list-style-type: none"> <li>• Children should sample a range of sports, as well as non-sporting physical activities</li> <li>• Games ought to be simplified or modified to reflect developmental markers and characters</li> <li>• The emphasis ought to be on fun / enjoyment and skill learning</li> <li>• Enough time for the skills to be properly learned</li> <li>• Children are capable of learning basic rules and strategies of sports</li> <li>• Competitions should be fun</li> <li>• Adults ought to reinforce the principles of fair play</li> <li>• Consistency in messages from coaching is vital</li> <li>• Training load needs to be increased slowly and gradually</li> <li>• Boys and girls should play together</li> </ul>	<ul style="list-style-type: none"> <li>• Temporary worsening in performance can result in drop-out</li> <li>• There is a need for on-going communication between child, parent and coach.</li> <li>• Guidance of lifestyle management (school-sport balance; importance of rest; etc.) will often be needed for serious athletes</li> <li>• Fundamental skills need to be applied in diverse settings</li> <li>• High quality practice with feedback helps automatise core skills</li> <li>• Competitions should become progressively more serious and frequent</li> <li>• Scope for greater personal goal-setting and responsibility in training</li> <li>• Introduce moderate anaerobic training</li> <li>• Emotional support is important</li> </ul>	<ul style="list-style-type: none"> <li>• Young people need to be led to take on greater responsibility for decisions and aspirations in sport</li> <li>• Increase training volume and intensity</li> <li>• Training and conditioning become highly specific</li> <li>• Athletes should become more aware of basic sports science that relate to their training</li> <li>• Development of aerobic capacity is vital</li> <li>• Progressively increase the volume and intensity of anaerobic training</li> <li>• High quality practice with feedback help generalize skills</li> <li>• Psychological skills training should become a central part of training</li> <li>• Guidance of lifestyle management (school-sport balance; importance of rest; etc.) will often be needed for serious athletes</li> </ul>

I hope it is not difficult to imagine some of the implications of this pattern for effective sports practice.

## Biography

Richard Bailey is a leading authority on the relationship between human development and sport. He works with a wide variety of agencies to help translate research into positive, evidence-based sports practice. Recent projects have been with the UNESCO, the International Federation of Red Cross and Red Crescent Societies, and the Nike Foundation. Previously Professor at Birmingham, Roehampton and Canterbury, he is now director of a specialist sport research and consultancy company, a public speaker and a writer. He has a popular blog 'Talking Education and Sport' (<http://talkingeducationandsport.blogspot.com>) and a Twitter feed that offers regular information on sport, learning and expertise (@DrDickB).