

sports coach UK Research Summary 1

More than Just Physical Maturity: How Coaches, Parents and Children All Influence the Relative Age Effect



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The Relative Age Effect is a phenomenon in sport. It describes how top-level sport is often dominated by players born at certain times of the year. Physical maturity is most often cited as the cause, with bigger children receiving the benefits of more attention and playing or practice time. But what if it wasn't the only culprit? What if parents, coaches and the children themselves were all unconsciously complicit?

This is the idea recently put forward by researchers who suggest how three concepts widely used in business and management can help explain how factors beyond physical maturity influence the Relative Age Effect.

✓ KEY LEARNING POINTS

- ✓ Participants who start with an advantage are likely to maintain and even increase it over time.
- ✓ A unique characteristic of superior coaches is the ability to create high-performance expectations that players fulfil.
- ✓ What coaches expect of a player and the way they treat them largely determines player performance and career progress.
- ✓ Players, more often than not, appear to do what they believe they are expected to do.



Setting the scene

They used to say that Mario was big for his age, but that's what happens when you're born early in the school year. The coaches loved Mario as he could run faster than the other kids, was the tallest on the pitch, and could outjump everyone. They recognised skill when they saw it and encouraged Mario to be the best he could be. Mario responded well to the attention and, as the years went by, he continued to develop while his friends just dropped out.

Mario's story is not unique and is known as the Relative Age Effect.

Youth sport is traditionally grouped by age bands, and research has shown that those born early in an age band experience advantages in terms of participation and performance that become accentuated as they progress through the system. For example, research in football has shown an over-representation of players born in the first quarter of the selection year (from January to March) for all the national youth selections.

However, this is not just an issue about developing the stars of the future, as the Relative Age Effect has also been shown to influence participation in sport at all levels. Research has found that players born late in the selection year are more likely to drop out of the sport as early as 12 years of age.

So what is going on here? The obvious answer is that children born early in an age band are physically more mature (ie bigger) and therefore stand out more in the crowd. A relatively small

10-year-old child can be approximately 20 centimetres shorter and 27 kilograms lighter than an early maturer:

Physical maturity is also often confused with skill, with the result that the bigger children are seen as more skilful and thus get more playing time. And here's where it gets interesting. Because they have more playing time, these relatively older children are also getting more practice, which, in turn, enables them to improve faster. The faster they improve, the more they stand out; the more they stand out, the more playing time they get; and the more playing time they get, the further they improve! The ultimate impact is that as time goes by, the gap between younger and older children in an age band gets wider.

The latest idea put forward by researchers is that physical maturity is not the only cause of this effect, and that parents, coaches and children all play a part. They suggest three models widely used in business and management that could easily be transferred to sport and have relevance for coaches: the Matthew Effect; the Pygmalion Effect; and the Galatea Effect.



The Matthew Effect

First coined in 1968, this term has been applied to technology, politics and economics. Derived from a Bible passage from the Book of Matthew, it can be paraphrased as the rich get richer and the poor get poorer.

The original 1960s research carried out by sociology professor Robert Merton interviewed Nobel Prize-winning academics in America. The results showed that up-and-coming scientists had a much harder struggle to get their ideas recognised than famous prize winners.

From a youth sport point of view, this means that those who start with an advantage will maintain and even increase it over time. One way to achieve this advantage is by enrolling in a sport earlier; or what tends to happen in practice, your peers enrol later in the sport. Research in France and Canada has shown an over-representation of relatively older players at the youngest age groups (even for recreational programmes), which researchers believe is based on an initial enrolment bias among parents. In particular, parents of relatively younger children may recognise possible disadvantages for their children and decide not to enrol them in that sport for a couple of years.

Late enrolment of relatively younger children allows their peers to develop skill advantages at the beginning of their careers. This then is the start of the Matthew Effect, with early enrollers already having more 'in the bank' to invest and therefore increase their advantage over time.

The Pygmalion Effect

Based either on a classical Greek poem by Ovid or a George Bernard Shaw play (possibly better known as the film *My Fair Lady*), this refers to the idea that the greater the expectation placed on an individual, the greater the result that individual will attain. Or put simply, expectations dictate outcomes.

This term was originally coined by psychologist Robert Rosenthal following a piece of research with teachers in California in 1965. Students took a test that was said to identify 'gifted' children and, sure enough, by the end of the year, those children had improved significantly more than their classmates. But here's the trick – the 'gifted' children were not identified by initial test results but merely selected at random. They were not especially talented (except in the mind of their teachers who had been told the false test results) and subsequent, though unconscious, preferential treatment occurred, leading the 'gifted' students to outperform other students.

The authors argue that a similar thing could easily happen in coaching. More physically mature children are seen as 'gifted' (based on a flawed understanding of maturity and skill), which results in them getting more attention and therefore greater improvement. Indeed, research has shown that coaches behave differently between high-expectancy and low-expectancy athletes. The high-expectancy athletes receive more feedback, praise and instruction, while the low-expectancy athletes receive more general instruction.

The Galatea Effect

The Galatea Effect shows how an individual responds to the Pygmalion Effect. It shows that once expectations are placed on an individual, that person acts in accordance with those expectations. Put simply, if a person thinks they will succeed, they are more likely to succeed.

In an experiment in the 1990s, two researchers randomly divided 556 candidates into two groups. In one group, test scores were deliberately increased to give those individuals an increased sense of belief in their own ability. Members of this experimental group were found to volunteer more frequently, which the researchers believed was based on their increased expectations of success. Research in education has similarly shown that when professors overtly trust and believe in their students, their self-expectations and performances increased.



Learning from the research

Put this all together and you get an interesting take on the Relative Age Effect. Parents enrol relatively older children earlier than younger ones, thus giving them an immediate advantage over their peers. Coaches see the more physically mature children as better and invest more time and effort in them. Children respond to the expectation of their coaches (and increased attention) and improve further. The result is a self-fulfilling prophecy that would make any relatively younger child wonder why they bother!

Although this is still a theoretical model that needs testing, it raises some interesting questions for parents and coaches:

- Do I enrol my children too late?
- Do I pay too much attention to physical maturity rather than skill? How can I differentiate between skill and maturity?
- Do I give certain children more attention than others? Would it be worth asking another coach to observe in case my bias is unconscious?
- Do I place the same expectation on all my participants? How can I make them all believe they are important and can improve?

References

If you are interested in finding out more about this area, the core of this summary is based on the article below:

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