Skill Acquisition in Football
8 to 16 year olds

The Football Association's Player Development Advisor - Craig Simmons, together with skill acquisition specialist Andy Grant, and Andy Franks from Liverpool John Moores University review the skill acquisition principles for use with developing players.

An essential role for the football coach is to help players attain new skills. Three interrelated phases of development over varying time scales have been identified as crucial in the acquisition of skill in football players. The three interrelated phases are:

1. Motor Control Development (movements without the ball)
2. Technique Acquisition (movements with the ball)
3. Individual and Team Match-play Intelligence

The paper will focus on these three stages and will highlight the coaching methods and learning styles that are important in teaching skill in football.

Skill Acquisition in Football

The traditional model of skill acquisition suggests that the athlete replicates a movement until it becomes a 'programme' stored in memory. The more experience and success they have of the movement, the technique and the application, the more successful the execution of the skill becomes instinctive.

1 - Motor Control Development

- Performance can be efficient without explicit knowledge of underlying mechanical principles. For example, riding a bicycle does not require knowledge of mechanical principles in order to maintain balance.
- Developing basic motor skills in young players such as balance, coordination, and agility are the building blocks in skill acquisition in football. It is well documented that today's young players are not getting the opportunity to develop their motor control and movement through playing in the school playground or in the local park.
- Lack of motor control may result in the player having weaker concentration and limited attention span. Football techniques are attention demanding and complex, to be executed successfully they require a high level of coordination, balance, speed and agility.
- Developing the player's ability to perform actions such as jumping, landing and turning are essential underlying fundamentals of skill acquisition in football.

2 - Technique Learning

Players learning new techniques have been shown to progress through three stages of learning:

- In the early phase the learner is preoccupied with trying to determine the basic movements patterns of the technique. Players may verbalise about what to do.
- In the intermediate phase the basic mechanics of the technique have been learnt and the player attempts to reduce the number of errors and to refine the skill. For example, passing the ball with the inside of the foot has been developed, now the player may be attempting to sweep the ball using the inside of the foot with disguise and keep varying distances.
- At the advanced phase the player can now perform the technique without thinking about it, allowing attention to be devoted to strategic and tactical aspects of performance. Technique execution has become instinctive as the player has developed the timing required to successfully perform the skill. For example, the skilled goalkeeper becomes attuned to the specific movement of the ball in flight. As the ball comes toward the goalkeeper, the image will start to expand on the retina. As the image reaches a critical point the goalkeeper will instinctively move to parry or catch the ball. The goalkeeper has developed an instinctive response to technique execution.

3 - Match-play Intelligence

Match-play intelligence involves an awareness of the individual players' circumstances and the game situation both in possession and out of the ball.

- When in possession the player must show an understanding of when, where, why and how to use the techniques that have been learnt.
- Creativity, innovation and an awareness of the balance of risk of conceding or maintaining possession are some of the essential elements of match-play intelligence in the game.
- When out of possession the player must develop perceptual understanding such as positional sense, assessing his movement in terms of the risk of scoring and conceding goals and anticipating.

Small and full-sides games can emphasise and develop match-play intelligence through the understanding of when to apply the correct technique in decision making through playing the actual game. However, the motor learning literature suggests there may be times when some aspects of skill may need to be isolated, broken down and practised.

Teaching and Learning Styles

Skill acquisition in football requires the players to establish three interwoven phases of development: motor control, technique development and match-play intelligence. The teaching methods that can be used by the coach in each of these phases, and the learning strategies adopted by the players, are highlighted below.

Teaching Styles

Three distinct teaching styles are currently recommended:

1. Question and Answer
   - Communication between the coach and player in order to establish the level of each other's understanding of a particular question or task.

2. Guided Discovery
   - Discovery learning can be broadly defined as the process by which players can search for and discover relatively individual solutions to executing skills without direct instruction from a coach.

3. Command Style
   - The coach makes all the decisions and may perform the demonstrations. The player's role is to listen and comply.

Learning Styles

1. Auditory - the ability to interpret and learn from the coaches verbal delivery
2. Visual - the ability to learn by seeing and understanding football pictures in motion
3. Kinaesthetic - the ability to learn by perceived movement in football practice

Everybody has their own preferred learning style. Some players may need specific instruction while others may perform better by observing and then attempting the movement or technique with no instruction. The motivation for learning
Coaching Methods

- The coach could devise practices and introduce opportunities that allow players to explore all the sources of information, these may include the following: watching games, playing matches with invention and creativity, conversation, instruction, listening, reading, watching television, video, games.
- The coach could structure practice sessions to provide opportunities for individuals to question, search and discover movement solutions for themselves whilst directing some elements of the session in a command style.
- Conditioning practice games and drills may be an example of guided discovery and can encourage this type of exploration (e.g. playing 2 touch football to improve the technique of controlling the ball).
- Small-sided games play a crucial element in skill acquisition in football.
- Participating in team games allows players to develop their individual football personality whilst developing essential skills such as innovation, imagination, instinct, positional sense, reading the game, anticipation, creativity, improvisation, communication whilst playing as an individual and a team member.
- The use of small-sided games is recommended at the beginning stage, (with caution during the early phases) as this reduces the complexity of learning as well as introducing decision making.
- Coaches need to be flexible and willing to use both movement drills, technique-oriented drills and games in order to assist the development of skill learning.

Organisation of Sessions

Coaching only one technique would create a coaching session that may be low in variability, whilst teaching more than one would allow for increased variability and random selection of the techniques to be learned. Research indicates that when players are learning skills, variable practice results in greater accuracy and consistency than specific repetition of the same movement or technique.

- The coach should ensure that they vary practices by manipulating factors such as distance, speed, direction of a pass, opposition and surfaces to be used.
- The coach should not make the variation in practice so great that the task becomes a different skill to that originally taught.

Practical implications for coaches across the different phases of skill learning

<table>
<thead>
<tr>
<th>Stage of Learning</th>
<th>Do</th>
<th>Do not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early (or Cognitive)</td>
<td>- Provide a general idea of the movement by using verbal, instructions, demonstrations and video</td>
<td>- Emphasise the outcome;</td>
</tr>
<tr>
<td></td>
<td>- Simplify the task and introduce the players to a logical sequence</td>
<td>- Concentrate too much on errors;</td>
</tr>
<tr>
<td></td>
<td>- Encourage transfer of learning by using related football movements</td>
<td>- Overload the players with too much information</td>
</tr>
<tr>
<td></td>
<td>- Provide positive early simple and accurate feedback for error correction and motivation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Employ specific practice drills in one skill per session</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Stress the process goals</td>
<td></td>
</tr>
<tr>
<td>Intermediate (or Associative)</td>
<td>- Encourage players to perform the skill at the correct speed, (as near as possible)</td>
<td>- Give too much feedback</td>
</tr>
<tr>
<td></td>
<td>- Encourage performers wherever possible to evaluate their own performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Increase progressively the complexity of the task</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Increase variability in practice by introducing more than one skill per session, or create multiple variations of one skill, e.g. passing</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced (or Autonomous)</td>
<td>- Use minimal intervention (encourage the learner to self-evaluate) - Deal only with highly specific components of the task</td>
<td>- Assume that learning has stopped</td>
</tr>
<tr>
<td></td>
<td>- Use goal setting to sustain motivation</td>
<td>- Accept bad habits which may occur</td>
</tr>
<tr>
<td></td>
<td>- Create a complex, realistic and challenging practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Encourage improvisation and adaptability</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Use highly variable practice conditions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Give adequate feedback</td>
<td></td>
</tr>
</tbody>
</table>

Summary

Research on the development of top-class sportsmen and women found that the only common trait was that they had practiced for at least 10 years and had usually started very young. This suggests that the opportunity to play at a very young age was more important in the development of elite performers than having natural talent. The evidence from motor learning and physical education research highlights the important role of the coach in skill acquisition in football. Developing basic motor control, technique and match-play intelligence were highlighted as the three interwoven phases involved in skill acquisition in football.

Acknowledgement

I would like to thank Dick Bate, National Coach - Under 16 England team, for his contribution to this article.