

Imagination is more important than knowledge! (Albert Einstein)

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June 2000

While Einstein definitely wasn't talking about soccer when he uttered those words, he certainly could have been hinting at the value of a learning environment that emphasized creativity and problem solving over rote learning. At the last World Cup, USA-99, it was noteworthy that the most gifted and creative players were from countries with the least organized youth soccer environments: Ghana, Nigeria and Brazil. The fact that this trend is evident on the men's side has always been taken for granted, but the continuation of the phenomenon into women's soccer merits notice and further exploration. If the women from these countries can emulate their male counterparts by emerging from relative obscurity and arrive on the world's soccer stage with subtle ball control and original ideas, what is it about their environment that we must attend to? It is perhaps significant that players from these countries almost always develop their craft in multiple-age group games over many years on sandlots and in alleyways, and generally without the "benefits" of structured coaching programs.

Coaching players to be subtle and creative is perhaps the most compelling and complicated challenge facing the Western soccer world today and, as fewer and fewer creative players emerge from the natural and traditional route of unorganized play, the burden of "manufacturing" gifted and talented players has been assumed by national coaching organizations through the implementation of systematic training programs. Sadly, the majority of these programs, including our own in the United States, are based on the Anglo-German Technical Model and the return has been less than spectacular for the time, effort and resources committed over the past 30 years. To appreciate why gifted players are more likely to emerge from unstructured environments, it is important to look at the nature of learning and the nature of unstructured settings. This article explores the elements of learning as they relate to player development and the benefits of a less-organized coaching environment.

The Technical Model

Thinking back to junior and senior high school physical education classes will provide a picture of the nature and failings of the Technical Model as it is still presented and practiced today. In those classes, the basic technical skills of the sport being taught were always presented at the beginning of each unit. This technical practice would always precede the games, which would take up the latter part of the unit once the skills had, theoretically, been taught and learned. Each year, the unit would begin with the same basic skills and, generally, the same kids who performed well or poorly the year before repeated their successes or failings. Students would stand in lines waiting their turn to practice the techniques and the teacher would offer feedback on how closely the demonstrated performance matched the textbook ideal. There were no opponents present during these exercises. Skill tests, if they were given, would establish criteria for grading, such as dribbling around a set of cones within a given number of seconds, or shooting a certain percentage of free throws. When the games began, the large number of students on each team made it difficult for the weaker-skilled players to participate with any success and the teacher spent the class time organizing the rotation of teams, keeping score, order and cheerleading. More damaging, once the drills had been practiced, information on how to actually play the games was rarely provided to the participants; those players who lacked the skills to succeed in the drill activities were now destined to fail in the game activities because they also lacked understanding.

So, why do years of free play experience at the younger ages seem to be more advantageous in cultivating competence and creativity? What follows are some observations about young players growing up in a street soccer environment.

Street soccer learning

Youngsters understand very little about the real game. When they begin to play at five or six, they consciously struggle to control the ball in any coordinated way and, invariably, labor to understand even basic ideas about the tactical nature of the game. They might have difficulty stopping the ball with their feet, so they often use their hands. They can be seen stumbling in the wrong direction and they have no

appreciation for the lines or the markings on the field. They have little or no use for teammates because they are very egocentric in their thinking.

As these young players start to compete in games with their friends of various ages, they begin to assemble their knowledge slowly and in piecemeal fashion, with observation as their primary mode of learning. They learn how goals are scored and which surfaces of the foot can be used to dribble and kick the ball. They learn to tackle and recover the ball and they learn to find spaces to receive passes from teammates. They learn to move in relation to the ball and to combine with teammates in elementary ways. They learn about boundaries and fouls. Goals are often makeshift from clothing or bags or rocks, and games like "ten goals to half-time and twenty goals to win" often determine the time limit of the street game. Playing with the "star" of the elementary school, or with the big kids on the big field are milestones in a youngsters' street career.

Significantly, motivated young players as young as six or seven will take time to practice skills that they have observed in others. At first their bodies may not be coordinated enough to successfully use these new skills in games, but they are planting seeds for their own futures. When they are the older, dominant players, the younger players will be the ones falling for their fakes. As they gain experience, they may begin to appreciate that by using their eyes and shoulders and hips and legs they can unbalance or unnerve defenders and buy time to escape a challenge or eek out an opening. Younger and smaller players must learn to adjust to the aggressive play of older or bigger opponents who limit their time and space with the ball and, by the time a street soccer player has reached the age of twelve or thirteen, they will have firmly established both their comfort level with the ball and their basic understanding of the game.

The motivation to play street soccer is found in scoring goals and being involved in the action, and the images on television can be vivid and vital. Who would be Claudio today? Which team was USA? Who would be Mia or Michelle or Sissi? Heroes are worshipped by imitation. Emotionally the game is played to emulate and compete and score. There are no coaches or referees or timekeepers or parents. It is young boys and girls in their own world until the calls to return home to the dinner table or bed become too frequent and loud to ignore.

Learning theory

In our adult world, survival is a matter of habits and routines. We create systems for much of what we do, including getting up, showering and leaving the house in the morning. We create systems for taking care of the lawn, for doing the laundry and for paying the monthly bills. By consciously or unconsciously organizing as much of our lives as possible, we can reduce our stress levels and meet most unexpected challenges. In doing so, we learn a little more about navigating life every day. And so it goes with sport. If a young player has the opportunity to learn the routines of tactical play through small-sided games, they build a repertoire of responses to game situations. As they gain experience, they develop the skill and understanding to play faster; success finds reward in growing confidence. When an unpredictable problem is confronted, the player must either find a solution or learn from the failure in the hope of a better outcome next time. When the numbers are small and the problems are highly repetitive, players can learn solutions in their own time and in their own way. When the numbers are too large, there is too much pressure to experience repetitive success, and frustration can lead to avoidance and eventual withdrawal from the sport.

The nature of experiential learning: assimilation and accommodation.

The Swiss psychologist Jean Piaget (1896-1980) is considered the father of children's cognitive-development theory and amongst his significant observations on how children learn are two critical ideas: the concepts of assimilation and accommodation. Assimilation suggests that we first try to place new experiences within our existing understanding of the world, while accommodation suggests that when a new experience cannot be explained by what we already know, we either ignore the experience, perhaps forever, or create new understanding. In these ways, assimilating new information allows us to deepen our existing understanding, while accommodating new information allows us to broaden our knowledge base. Learning over the course of a lifetime becomes a never-ending, spiraling process in which we continue to accumulate knowledge on a wide range of subjects, while adding layers to the information we already possess. We can only assimilate new information within knowledge that already exists, such as when a player who habitually curves the ball with the laces learns to drive the ball in a straight line. Conversely, introducing a crossing and heading practice to eight-year old players who are just beginning to feel comfortable with the ball will not

result in learning because they have no prior need to cross and head (failure to assimilate) and they are not intellectually ready to attending to this aspect of the game (failure to accommodate). Because the information is beyond their capacity and motivation to learn, no new learning takes place.

The nature of experiential learning: contextual interference theory

Shea & Morgan first published their research on the phenomenon of contextual interference in 1979. This theory suggests that leaning is more personal and permanent when it is untidy and unpredictable. Contrary to expectations, when we are faced with the performance of a repetitive learning activity, such as passing back and forth, our brain adapts to the mental effort required to succeed and then tunes out. It would appear that after a few repetitions the novelty wears off and the motivation to attend to detail is lost. While we do, initially, demonstrate improved technical proficiency in learning from repetition, the ability to reproduce the technique at a later time, particularly as skill (the application of technique) in novel situations is not retained. In contrast, when practice involves, for example, receiving balls arriving indiscriminately at different heights, speeds and spins, and particularly when there are a number of additional variables, such as opponents to factor into the technical and tactical solution, our brains are required to pay close attention in order to adjust our responses. Because the responses are similar (receiving a ball), yet different (trajectory of the ball, surface required, position of attackers and defenders), the next action interferes with the encoding of the last action, forcing our brain to constantly create connections between each event. The weave of mental links between the range of possible technical responses and the associated tactical contexts make learning more permanent and the ability to successfully improvise made more likely. Contextual learning is not clean and predictable because there are many different ways in which knowledge is being constructed, and sensory information may find relevance to performance immediately, tomorrow, years later or never.

Creativity and youth

There is a famous anecdote in education about the young child who is told to draw a tree. The child draws what looks like a trunk and adds branches and leaves and then colors the trunk purple and the canopy blue with yellow spots. It is a very bright tree. When the teacher sees the tree, she tells the child that it is not a very good tree because trees have dark trunks and green canopies, except in the fall when they may be red or orange. The child is upset that the teacher didn't like her version of a tree and obligingly draws another tree in the way the teacher had suggested. The original drawing was crumpled up and thrown into the garbage can and the child never drew a brightly colored tree again.

Youth is the time to play and experiment. Youth is the time to imagine and dream. Youth is the time to make mistakes. Youth is the time to succeed and be told everything is good. Youth is the time to lay the foundation. Youth is not the time to build the roof.

Create an environment; talent will come.