



Motor learning and tennis basic stroke teaching for 3 and 4-year-old boys and girls

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ABSTRACT

This article presents a less prescriptive approach to the teaching. Our didactic proposal is divided into 3 complementary and progressive stages. The first one encourages the child to explore the learning environment and to discover their motor capabilities; the second is an intermediate phase with greater practice variety in which the child experiences different ways of acting and hitting; the last one aims for each child to discover their own preferred movements and strokes in a natural way.

Key words: acquisition, non-prescriptive teaching, non-linear pedagogy

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INTRODUCTION

Primary school kids are often seen in tennis clubs hitting their first strokes with nets, rackets and balls that are adapted to their stage of development. But what happens if we are given a group of 3 or 4-year-old players at the beginning of the season? This is a great challenge as generally we are not prepared, or we don't know how to stimulate our kids so that they develop their motor skills and learn the basic tennis strokes. This lack of knowledge raises questions which need to be answered. This paper is the product of our practical experience with Kindergarten kids and it is supported by current knowledge of motor learning. It aims to urge club and school teachers to programme their lessons to include playful activities that consider the psychological development of the children.

Acquiring a new movement is a complex process of non-linear and dynamic changes, as the interrelation of several variables or constraints gives rise to a peculiar motor coordination (Newell, 2016). The learning process is not lineal, and it can be affected by many constraints since there is no single cause for change. Therefore, for a child to learn how to hit a ball, the

teacher must design learning situations that modify such constraints.

It is key for the teacher to provide positive feedback and make the children understand that making errors is normal in a learning-centred process. Besides, laterality is not yet solid in 3 and 4-year-old kids, and although they may show a natural preference, it is common to see them changing the racket from one hand to the other in order to hit the ball. At first, they reduce the amplitude of their movements and there is a muscular rigidity that helps them to feel safer and in better control.

The traditional method of teaching tennis has, for a long time, consisted of repeating the same stroke in a continuous and mechanical way in order to reproduce the ideal technique in non-contextualised practice situations (Crespo, 2009). On the contrary, we promote an individualised, less directive and less instructive teaching that preserves the need for spontaneity and an exploration of what each child feels. The traditional technique-centred teaching approach and early specialization are not the most appropriate for correct motor learning.

DIDACTIC PROPOSAL

Our proposal is based on the methodological approach of the Health Pedagogical Advisors of Lower Rhine (2015), which was designed for physical education classes for kids between 2 and 6 years old. We have adapted it to teach motor skills, including basic tennis strokes for 3 and 4-year-old kids (Table 1).

Its main idea is that during the learning process the child goes through three stages in temporary, non-permanent moments. In our model, the experimentation and motor selection processes happen gradually; they are like the shape of a funnel, going from the most varied and divergent to the most specific and convergent. The child experiences many kinds of motor and hitting skills, particularly during the first two stages, until reaching the third stage where they will use the movements that are more natural and efficient for them.

1st Exploration	2nd Diversification	3rd Structuring
The teacher organizes and sets up the different playing zones. The teacher encourages the child to discover spontaneous movements.	The teacher organizes, modifies and resets the learning situations so that the child acts in several ways and has different experiences.	The teacher organizes the activities and guides the child so they acquire the expected or more specific behaviours.
The child explores the environment. The child decides what, how, when and how much to play.	The child adapts, decides how to play and how to solve the motor problems they encounter.	The child naturally selects the most appropriate movements for them.
Games and motor skills: receiving, throwing, racing, turning, hitting with and without an implement, jumping, etc.	Games and motor skills: tennis basic strokes (single or two-handed, with different materials, with and without movement, etc.).	Games and motor skills: tennis basic strokes (preferred or specific to each child).
Example: ten kids play freely in the different learning environments. In the balloon corner, a child discovers they can successfully hit balloons with the palm of their hands.	Example: the teacher prepares several ramps with different inclination angles. The child puts the ball on the ramp to hit it and direct it towards some cones. Thus, the children can hit a forehand in different ways: with a bounce, without a bounce, with a paddle and a single hand, with a racket and both hands, etc.	Example: in a cooperation situation, two kids rally over the mini-net with a slow bouncing ball. One of them always prefers to hit a forehand with one bounce. So does the other one, but he sometimes hits the ball after the second bounce, indicating that his stroke is undergoing a structuring process.

Table 1. Didactic proposal in stages, adapted for clubs and schools.

METHODOLOGICAL GUIDELINES IN STAGES AND PRACTICAL EXAMPLES

First - exploration:

For part of the class the teacher creates safe and motivating situations that invite the child to discover the different possibilities available to them. The idea is that the movements of each child emerge spontaneously since the child voluntarily decides what to play. Example: the teacher creates five learning

corners or environments with different materials in areas that take up half of the court. In the other half, mini-nets will be set up for the other part of the lesson, or for occasional rotation. The spontaneous practice environments will have the following: 1) soft balls to hit with a paddle, 2) obstacles and skipping elastic tapes, 3) costumes to play pirates, 4) musical instruments to sing and dance with, and 5) mats where the kids can rest or play, so as to not force them to participate.

Second - diversification:

The teacher changes the situations and gives new instructions so the kids act in different ways. The objective of the task is mentioned, but the solution is not provided beforehand: "the target of the game is to hit the ball over the net and hit the doll, but without telling them how to". The teacher prepares materials for the kids to hit in several ways, for example, for the backhand: using a plastic case, which encourages hitting with one hand, then a paddle and then a racket, which encourages play with both hands.

The teacher can also ask the kids simple questions and use analogies to foster creativity and a linking together of ideas in problem solving: if the objective is differentiating the different heights, ask the children to hit fire balls with paths that "resemble a rainbow" (Atencio, Chow, Tan and Lee, 2014, p.8). It is also useful to rotate; teacher A stimulates the general motor skills of subgroup A in one part of the court with fun activities: corners, learning areas, free play, symbolic games, songs, controlled play, etc.; while teacher B teaches basic strokes to subgroup B in a motor circuit so that the kids have less time to wait after hitting.

Third - structuring:

The teacher organizes and guides the situations so that the child becomes aware of their preferred or more specific movements. These are the strokes or the hitting forms that the kids themselves have selected after a practice process and they are not imposed in an authoritarian manner. Even if the teacher has an ideal technical model, they should not give specific technical instruction. The point of focus will be the objective of the task, and this will guide the child's actions. We must not over-verbalize instruction, as in traditional teaching, but provide timely and simple instruction in language that is fun for the kids.





Simple sequences can be used on the court: first the backhand, then the forehand from mid-court, finishing with an easy volley close to the net. Rallying and adapted cooperation drills can also be encouraged

IMPLEMENTATION GUIDELINES

1) The stages can be flexible; for a group of kids, two of the stages could be mixed up in one or several sessions: for younger kids (exploration and diversification) and for the more competent ones (diversification and structuring).

2) When teaching larger groups, it would be ideal to have two teachers; in the main part of the class the teachers can feed more balls and increase practice. If the teacher is by themselves, hitting the ball with a hand rather than a racket is recommendable for the freer activities as it is safer.

3) At the beginning of the lesson more importance will be given to the development of general movement. Then, the main part of the class will consist of more basic stroke related activities. The final part is the ideal time for the kids to become aware of, and verbalize, the solutions they have found and their achievements.

4) We follow Sanz & Fuentes' (2008) learning progression, adapting it to younger kids: a) groundstrokes (forehand, low service and backhand), b) net strokes, and c) overhead service. The later is very difficult for children, though it fosters coordination and segment dissociation since they have to toss the ball with one hand and hit it with the other.

5) In order to succeed in individual motor skill teaching such as hitting, the teacher must be innovative and creative. They must also learn how to adapt activities on the go, depending on the level of motivation and concentration of the kids. They will have to modify the constraints (variables), adapting them to the motor skills of each child. For example, using soap bubbles to stimulate the perceptive-motor skills of 3-year-olds.

6) In order to develop the child's autonomy and increase hitting frequency, devices that allow hitting without depending on the teacher will be appropriate (frames with a fixed ball, hanging balls, bouncy nets, etc.). The teacher can build several ramps that project the balls without throwing them, or use more sophisticated devices such as a machine that produces air to

keep the ball in suspension (Justine Henin Academy Website, 2018)

CONCLUSIONS

The success of our proposal requires teachers who look at the learning process through different eyes; teachers who let children do, who let them create, discover their motor skills and their own strokes; teachers who guide them without imposing their solutions beforehand, and who are always attentive to the motor and emotional behaviours of each kid.

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REFERENCES

Atencio, M., Chow, J. Y., Tan, W. K. C., & Lee, C. Y. M. (2014). Using a complex and nonlinear pedagogical approach to design practical primary physical education lessons. *European Physical Education Review*, 20, 244-263. <https://doi.org/10.1177/1356336X14524853>

Crespo, M. (2009) Tennis coaching in the era of dynamic systems. *Journal of Medicine and Science in Tennis*, 14, 20-25.

Équipe des conseillers pédagogiques en EPS du Bas-Rhin. (2015). *Agir dans le monde 2 à 6 ans*. Schiltigheim: Accès Éditions.

Justine Henin Academy Website [Internet]. [cited 2018]. Available from: <https://www.facebook.com/JustineHeninAcademy/videos/1729017943859855/>

Newell, K. M. (2016). Change in movement and skill: Learning, retention, and transfer. In M. L. Latash & M. T. Turvey (Eds.), *Dexterity and its development* (pp. 393-430). New York: Routledge.

Sanz, D. & Fuentes, J.P. (2008). Descripción de las diferentes fases de las empuñaduras y ejecución de los golpes fundamentales del tenis. En D. Sanz (Eds.), *El tenis en la escuela* (pp. 83-114). Barcelona: Paidotribo.

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