



Non-gender stereotyped motor development in the discovery stage of tennis: A narrative review

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ABSTRACT

We present motor development as the central element of the integral development of children in the pre-school stage, which is also transferable to primary education. Movement and motor acquisition facilitate new learning, such as that which takes place in the social sphere. Thus, through motor skills, boys and girls increase their interactions with others, which gives them more opportunities to establish positive gender relations with their classmates. The purpose of this review article is to provide knowledge and recommendations so that teachers who teach mini-tennis classes in schools or clubs have educational resources that allow them to teach with equity in a context of greater gender equality. The teachers will note two relevant facts: first, that human beings begin to show gender differences when choosing a game very early, around the age of two; second, they will understand that rackets in themselves, like balls and colours, do not have gender. Throughout the text, we will present some examples of gender stereotypes that will help to better understand this problem that limits the development of boys and girls, and that is part of our society.

Key words: Developmental cascades, early ages, mini-tennis, gender equity and equality values.

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INTRODUCTION

From the earliest ages, the natural energy that children possess drives them to move, to play with different toys and to participate in all kinds of playful, physical and sporting activities such as those that are put into practice in mini-tennis classes in educational centres, clubs and tennis schools. In this initial stage of discovery and "motor literacy", exploration and experimentation are promoted, the first games, circuits and stations are organised (without and with racquet) in which various motor skills are developed (walking, running, jumping, throwing, catching, driving, pushing, bouncing, hitting, etc.); and coordination, balance, physical abilities, and social and emotional skills are also improved (Campos-Rius and Rocca, 2021). Movements and motor experiences are essential tools of motor development that allow children to perceive their opportunities for action, to know their bodies, to acquire new skills, to understand the meaning of the context and to achieve an integral development in all areas: motor, physical, emotional, social, linguistic and cognitive; it is from this perspective that Adolph and Hoch (2019) defend motor practice as a fundamental pathway of motor development, since motor actions are the resource that enables new learning in the various domains studied by developmental psychology: "motor skill acquisition can instigate cascades of development that are so far-flung from motor behavior and so far removed in time that, on the surface, they hardly seem connected at all" (p. 155).

This means that children not only learn new motor skills, but that these newly acquired milestones "are a means" that facilitates the acquisition of other skills that are part of the

pupils' overall development. This is a central idea of our article: the motor domain influences and incites developmental cascades. Therefore, these new motor learning processes benefit other areas of boys and girls; thus, the consequences of these influences go far beyond the exclusively motor aspect, they stimulate various psychological functions and, above all, the acquisition of social skills, attitudes, behaviours and values such as equity and gender equality.

Education authorities are concerned about gender stereotypes and behaviours among boys and girls in schools. In the recent Royal Decree 95/2022, several key terms are intentionally used to explicitly encourage Early Childhood Education teachers to adopt a didactic approach based on equity: equality (15 times), discrimination (13 times) and stereotypes (8 times); as an example, in the curriculum area of "Growing up in harmony", basic knowledge "D" highlights "respect for gender equality and the rejection of any kind of discrimination" (p. 14581). The issue of gender equality is not only of concern to education authorities, but also to sports leaders, managers and various professionals who observe significant inequalities in sport. For this reason, the International Tennis Federation (ITF) has launched the gender equality strategy "Advantage All" in 2019. In addition, the ITF Academy online platform offers the e-learning course "ITF Advantage All Gender Equality Strategy-Introduction" and the video "The psychological effect of stereotypes on girls and women in tennis". The ITF Gender Equality Commission hopes that tennis will be an example for other sports, a more egalitarian sport at all levels, without discrimination for any reason or circumstance, without favouritism, with more opportunities, with more gender balance, and that the equity

measures implemented will promote the empowerment of the most vulnerable groups, such as girls and women who play tennis.

The main objective of this article is to provide knowledge and guidance to teachers who teach mini-tennis classes in pre-school and primary schools and tennis clubs, as well as to other professionals involved in the motor and integral development of pre-school children, and transferable to later ages. We highlight the fact that early motor experiences will impact the future developmental potential of boys and girls, and that learning about gender equality starts very early in the life cycle.

RESEARCH METHOD

This review has articulated three main themes (motor development, gender perspective and the discovery stage of tennis) in order to find useful knowledge and applications for teachers. In order to do so, four main stages were followed (see Table 1): 1st Identification stage A: bibliographic searches in English and Spanish were carried out in two electronic databases using various keywords; 2nd Identification stage B: manual searches were carried out by studying the reference list of some relevant documents and in addition specific websites were consulted; 3rd Eligibility stage: the most appropriate documents for this study were selected, in total: 14 articles, 3 books and/or book chapters, 1 project and 1 educational regulation; and 4th In-depth review phase: the content of the 19 selected documents was read and the essential information for the main sections of this article was extracted.

Table 1

Summary of the investigation procedure.

Succession of the stages used in the review
1st Identification Phase A: electronic searches in Web of Science and Google Scholar.
2nd Identification Phase B: manual searches through reference lists and website queries.
3rd Eligibility phase: selection of suitable documents.
4th In-depth review phase: full-text reading of the selected documents and extraction of key information.

MOTOR AND SOCIAL DEVELOPMENT GO HAND IN HAND

As we saw earlier in the introduction, motor development stimulates and accompanies the socialisation process. Motor and social skills are progressively acquired during interactions with others. These links between the motor and social spheres occur naturally through play, looks, smiles, gestures, sounds, words, etc. When children acquire a new motor skill, a whole range of possibilities opens up. An example of this process is when they stop crawling and start walking independently. This is a more interesting skill because they can now move from one point to another more easily, their field of vision increases and they free their hands to manipulate more objects, all of which will lead to increased interaction and play with others. Consequently, as children improve their motor skills, they also progress in their socialisation processes by increasing their interactions with significant people: peers, caregivers, educators and family members (mothers, fathers, siblings,

etc.). In this initial stage of discovering tennis, through a wide range of group games and mini-tennis activities, children will increase the frequency of their relationships with their peers and will have more opportunities to develop their social skills.

At the same time, in this social context of teaching and learning, the set of play activities developed in each session will be the means for the education of values such as respect, companionship, equity and gender equality. By equity we understand the means, measures and resources to achieve equality between boys and girls. Not all children grow up in equal socio-cultural and economic conditions, and we know that these conditions of inequality can limit their all-round development (Haywood and Getchell, 2020); therefore, some children will need special support in order to have similar developmental possibilities as others. We also understand gender equality as the aim, the goal to be achieved in childhood, that we are treated equally in our society, with respect and fair treatment, and that we have the same possibilities to develop.

COLOURS, BALLS AND RACKETS HAVE NO GENDER!

A key issue to consider for the education of our children is to assimilate the fact that colours, clothes, toys, sports materials and facilities, play spaces, games, sports, professions and household chores are "genderless"; however, gender attribution and, consequently, stereotypes are so ingrained in our society that it is sometimes difficult to see that they are right in front of our eyes (Collard and Meurant, 2023). Adapting the examples of these authors, you can ask yourself if you have had the following cases in your mini-tennis classes: have you ever seen a pupil playing dressed in pink or dressed up as a fairy, or have you seen an unfeminine and extremely competitive pupil playing very well at sports or dressed up as Spider-Man, these fictitious cases that might cause concern for some parents encourage us to reflect.

Gender identity is constructed from childhood and is a complex multifactorial process that is not static; it can undergo changes during the life cycle because a set of biological, social, cultural and psychological variables are interrelated (Rocha, 2009). At the same time as the process of gender identification is taking place, gender typing (stereotyping) is developing. The latter is mainly influenced by socio-cultural factors: from an early age, boys and girls acquire typified behaviours and learn to differentiate colours, toys, games, activities, etc. by gender. In this way, boys and girls acquire gender stereotypes which are representations, ideas or labels "different for males and females": they may attribute gender role stereotypes to games, tasks or activities (e.g. boys play at being firemen and girls at being nurses), or gender stereotypes of behaviour (e.g. girls are sensitive and boys aggressive).

In psychology, this process of categorisation has been studied by analysing gender differences in choosing or preferring toys to play with; for example, at the age of two years, girls and boys differentiate themselves by preferring to play with a certain type of toy; if this differentiation occurs, we would be proving that a gender stereotype does exist. Boys' and girls' choices are influenced by "multiple factors" such as the messages they receive from adults, mothers, fathers, teachers or caregivers (Boe and Woods, 2018), or by other variables such as the colour and type of toy (Fulcher and Hayes, 2018), or are caused by toy companies' advertising strategies that target a particular gender; thus, children, mothers and fathers see highly gender-stereotyped images, words and messages

on television, the internet, social media, or on the toy box itself.

In this regard, Weisgram and Dinella (2018, p. 4) raise two relevant questions: "what makes a toy masculine or feminine?", and what would happen if the industry advertised and marketed the same toy in a neutral way for boys and girls, "omitting explicit and implicit labels". Undoubtedly, these factors condition boys' and girls' choices by generating stereotypical toys and dichotomous play activities that are either masculine or feminine (i.e., boys play with motorbikes and cars; girls play with babies and dolls). These characteristics related to gender typing are learned in a sociocultural environment that is specific to each child and, therefore, children's behaviours and preferences are studied from a binary or traditional gender perspective, masculine versus feminine, with no other options in between, neutral or mixed (Dinella and Weisgram, 2018).

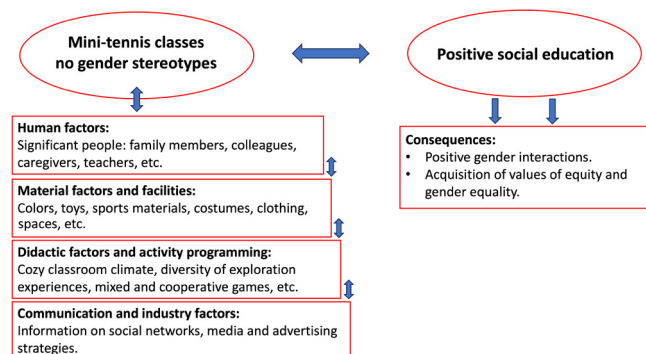
In research, it is quite difficult to ascertain precisely at what age infants, toddlers and very young children show gender differences in their play preferences; one of the important limitations is due to language acquisition. Despite the methodological problems inherent in the nature of these studies, some researchers argue that gender differences "appear" from 18 to 21 months, but that these differences "are constant" as they approach 24 months of age (cf. Zosuls and Ruble, 2018).

Educational programmes and interventions are priority instruments to improve gender equality in children and adolescents. In Physical Education classes, stereotyped behaviours have been observed mainly in boys, although if the intervention is appropriate, improvements in equal behaviours are observed in both genders (Pelegrín et al., 2012). In Early Childhood Education schools, gender-stereotyped play spaces can be identified, such as the cooking corner or the construction corner; Collard and Meurant (2023) suggest that these spaces be modified by educators, for example, a corner with a restaurant where all the staff "working" is very diverse (boys and girls) would be more inclusive compared to the more traditional cooking corner.

Inappropriate behaviour, inequality and gender stereotypes are also frequently observed in the shared spaces of schools and tennis clubs. Recently, Zapatero-Ayuso et al. (2022) conducted a study in the playground of a primary school in the Community of Madrid. The results after the co-educational intervention indicated certain gender differences. Girls complained of disrespect from boys, they demanded more "passive" spaces for rest and the need for alternative games to sports, and they requested materials such as swings and benches. The boys, for their part, had problems with respecting the turns on the multi-sports courts and expressed dissatisfaction with the reduction of sports areas, especially the one for football.

Researchers such as Riemer and Visio (2003) have observed a trend of change in the sporting choices of boys, girls and adolescents, which provides some hope for the reduction of gender stereotypes, but more research is needed to provide new data on this evolution. These patterns of change are a reflection of a society transforming over time as demonstrated by analyses of boys' and girls' drawings in very different years or time periods, 1977 versus 2015 (see Lamm et al., 2019).

As a result of this literature review, Figure 1 shows how various factors influence the implementation of an ideal educational approach: "Mini-tennis lessons without gender stereotypes". On the other hand, on the right, readers can see that mini-tennis lessons are an ideal way to promote a healthy socialisation process in which there is room for positive relationships between pupils and an inclusive education that



incorporates the values of equity and equality from a gender perspective.

Figure 1. Diagram depicting multiple factors that determine a mini-tennis education proposal based on equity and equality.

GUIDELINES FOR TEACHERS

This article is intended as a contribution to society in general, however, the main advice is aimed directly at teachers who teach mini-tennis in schools and tennis clubs.

You are the role model for your students, maintain a positive classroom climate

You are unaware or often unaware of the immense influence you exert on your students, without realising it, they will imitate your attitudes and behaviours, which will leave a permanent imprint in their minds (Haywood and Getchell, 2020; Jiménez, 2021). There are inconspicuous micro-events of gender stereotypes that can be detected in non-verbal and verbal expressions used by adults and teachers, some words such as "pretty, macho or champion" would be inappropriate (Collard and Meurant, 2023). Therefore, we suggest that you use neutral expressions in order not to condition your students, always think about preserving a positive classroom climate free of gender discrimination and discrimination of any kind. You will be the model that your students will implicitly imitate, examples:

- If you are a man, it is a good idea to participate in games and play activities that are often considered feminine, such as dances or jumping games with and without rope or rubber bands, adapted to the motor competence of your pupils.
- On the contrary, if you are a woman, try to show behaviours and values "normally" associated with masculinity, such as being very competitive, being aggressive in a good way and having ambition to win; your students will perceive that you can feel good showing behaviours associated with masculinity and, above all, they will be able to learn the positive aspect of these values.

In this way, your students will observe both facets: "the masculine and the feminine", being more equitable for their integral development; thus achieving the objective that they participate in confidence, without fear and in an atmosphere of respect and companionship.

Programme playful, varied, mixed and cooperative activities without gender stereotypes

The greater the diversity of games, the more likely your students will be to acquire the innumerable benefits that each activity offers; try to ensure that most of the games are mixed and cooperative, thus increasing social interactions between boys and girls and their interest in participating, and with creativity, gradually introduce gender-sensitive elements into the games (see Fuentes-García and Carmona, 2021). Your programming should not only have motor and tennis objectives, but also, ideally, in several sessions you should specify objectives (or competences) that promote values related to gender equity and equality. Teachers have a fundamental role to play in designing mixed-gender activities, taking into account the fact that girls are usually less encouraged and stimulated to develop motor skills and practice sports activities (Collard and Meurant, 2023); also, girls often feel "less capable"; therefore, teachers should plan measures or adaptations that promote equity, as well as avoid the habitual practice of gender-stereotyped activities and sports (Beasley, 2013).

Uses gender-neutral materials, toys, clothing, colours and play spaces

Educate your students without gender, the different elements you use will be the tools to take a step towards equality. Use a variety of colours, and if you use materials that are associated with a particular gender this will be an excellent opportunity to teach your students tolerance and respect. If a negative comment is made towards someone, or a child does not want to use a particular material, this is an opportunity to observe this behaviour and educate the pupils, examples:

- Suggest to your school or tennis club to buy paddles, rackets, bibs or design "gender neutral" clothing.
- Watch your pupils when pink is used in mini-tennis classes, it is possible that a pupil may say a derogatory comment to a classmate, or reject the pink material; remind them that there are great tennis players such as Alcaraz or Nadal who wear pink or similar colours in some matches.
- Make the most of the class that coincides with the carnival party so that everyone can dress up as they like. A few years ago, in a tennis club in the Community of Madrid, a teacher dressed up as Snow White and it was fantastic, there was no problem at all.

Involve families and managers

Raise awareness among parents and managers through workshops, projects or seminars involving people from the school or tennis club.

Design together with your students, collaboratively, a poster and/or "decalogue of good behaviours" that communicates messages directly related to gender equity and equality, and that involves the whole school or tennis club.

Also, it is key to emphasise that in the case of detecting inappropriate behaviour of a student, do not overlook it, and respectfully inform his or her family; take advantage of this possibility, your work is not limited to teaching only hitting skills.

Claims women's and men's triumphs in tennis

As a PE teacher, manager or club coach, recognise the achievements of male and female tennis players. If you ask people in a talk in 2023: who has won the most Grand Slams, you will be surprised to find that most people will not know that there are women tennis players who have won more Grand Slams than men. As has been suggested, some people are unaware of women's success because of the limited media coverage of these merits. Let us not be agents of this unequal transmission and let us be critical of this situation. It can be positive for your students to find sporting references of the same gender to strengthen their sporting practice in the long term; at the same time we contribute to spreading a fair and equal vision of sporting success in tennis.

Get your message across to the sporting goods and toy industry

If you dream of a more egalitarian society, don't just sit on your hands, find a way to make your voice heard. The "overly stereotypical" advertising your students receive is one of the factors affecting their development.

Evaluate your teaching

It is important that you take some time to think, evaluate and make decisions about your own teaching, using simple self-assessment questions such as these:

- Do I prepare concrete equity measures, adaptations or actions to bring pupils growing up in a less advantaged socio-cultural and economic environment closer to the development opportunities available to others?
- Do I create a welcoming classroom climate for my students to interact in a positive way?
- Do I programme mini-tennis activities and games that contribute to a more equal education of boys and girls from a gender perspective?
- Do I use mini-tennis materials, games and spaces that stimulate children's development?
- Do I take into account families and others who might influence the motor and holistic development of my learners?

CONCLUSIONS

The motor actions, games and strokes that boys and girls experience in mini-tennis classes not only stimulate motor development, but also motor skills are the way to promote new acquisitions in other areas of development, therefore, it is essential that teachers pay special attention to the design of sessions and activities. In this programming, objectives (or competences) guided by the principle of equity must be specified so that gender equality can be achieved or, in a more utopian way, so that mini-tennis classes can be taught free of gender stereotypes. As previously explained, we know that the differences in play preferences shown by boys and girls begin to develop very early, and can be detected when they are close

to two years old. As a consequence, it is of vital importance not to waste time and to start gender-sensitive education as early as possible from pre-school age. But we also know that children's gender-neutral minds are bombarded daily by stereotype-laden messages from peers, adults, the media, social networks and industry. The consequences of these messages modify ideas, beliefs and influence the formation of boys' and girls' personalities, limiting or significantly affecting development; they could affect the perception of competence, the expression of emotions, the choice of future studies and the roles played at home, among others. For these reasons, gender equality education should start at the pre-school stage, and then needs to be reinforced in the following educational stages.

CONFLICT OF INTEREST AND FUNDING

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