

# Chapter 10

## Addressing Gender in French Research on Subject Didactics: A New Line of Investigation in Physical Education



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### Introduction

This chapter is about a French *didactique* research program that explores how institutionalized teaching and learning processes, which are fundamental if people are to live together and act as citizens, can participate in the societal challenge of gender justice at school. It presents a recent theoretical development that addresses gender perspectives in subject didactics. More particularly, it focuses on how gendered contents take shape, or might be challenged, through teacher and students' interactions in the class. The chapter begins by pointing out the late emergence of gender as a research question in European didactics and gives an insight into recent perspectives in German, Nordic and French didactics research. The core of the chapter, in two sections, develops the way gender is addressed within a French *didactique* research program of the early 2000s that emerged to investigate gender issues at the micro level of didactical transactions. The first section sketches out the conceptual framework and key concepts that form the background against which the studies are conducted. The second gives two examples in physical education that illustrate the unique twofold contribution of this research program in terms of (i) investigating didactical interactions through a non-binary gender analytical lens and (ii) implementing emancipatory didactical strategies that foster non-gendered learning. The first example underscores the extent to which the program sheds new light on gendered knowledge constructions and the second gives a glimpse of how collaboration between teachers and researchers can enhance directions to increase gender equity from early schooling onwards. The conclusion stresses the need to increase didactic research on gender in all school subjects.

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## Gender in European Didactics

Since the late 1970s, an increasing volume of research within educational sociology, educational psychology and curriculum studies has shown that pedagogical practices reproduce gendered aspects of the cultural heritage of societies. In the Anglo-American areas, early works on gender and school subjects questioned the gendered knowledge-producing processes in schools. An overview was provided in the third part of the 'Handbook on Gender and Education' (Skelton et al., 2006) with chapters covering the theme in particular school subjects, such as literacy, mathematics, science, sex education, and technology. Recently, national curricula or national standards over Europe have encouraged teachers to consider girls and boys equally in day-to-day practices to promote a more inclusive pedagogy. Despite a dramatic increase of gender studies in the various fields of educational research and some recommendations given by educational policy makers, European didactics research (understood as studying the teaching and the learning of subject-specific knowledge) did not pay much attention to gender before the last decade (Danielsson, 2010; Schneuwly, 2015). However, related works on-going since 2014 were presented in EERA Network 27 (Didactics – Learning and Teaching) through symposia and workshops. They gave exposure to research on gender in learning and teaching, from which a book, 'Gender in Learning and Teaching: Feminist Dialogues Across International Boundaries', has been published recently, providing a collection of international research (Taylor et al., 2019). The emergence of a focus on gender in European didactics is thus recent. In the late 2000s, initial works concentrated on differences between female and male students' achievement, attitude and motivation, etc., while shedding little light on the social interactional processes underpinning the differences observed in students' gendered relations to the subject being taught and learned. Gender is considered in these first studies as a characteristic of the individual student and, more often than not, related to an a-theoretical approach taking gender as synonymous with sex (Danielsson, 2010). These approaches to gender are still vivid in the landscape of European didactic research.

More recent works concentrate on gender as a social construction within academic disciplines and their cultural anchorage. They are studies providing gendered analysis of textbooks, of students' voices, of teachers' attitudes and knowledge, etc. Innovative designs and intervention projects intended to enhance students' achievement have been tested, particularly in subject disciplines marked by inequalities of gender performance, such as literacy, mathematics, physical education (PE), technology, and sciences. Notwithstanding, over the 2000s, gender focus has still remained marginal among the incredible amount of literature in didactics research. The last decade was characterized by new didactical approaches going far beyond the taken-for-granted traditional binary gender distinction and more attention has recently been paid to how the contents of lessons impact students' gendered learning (Amade-Escot, 2019a; Danielsson et al., 2018; Goetschel, 2010) as outlined in the next section.

### ***Contemporaneous Gender Research Approaches Within the Three Core Strands of European Didactics***

Didactics research within continental Europe is multi-faceted and the kind of focus given to learning and teaching differs according to national contexts. Three core strands are classically distinguished: German-speaking didactics, Nordic didactics, French-speaking didactics (see contributions in Hudson & Meyer, 2011). In this landscape, the study of gender issues in subject-didactics research still has strong connections with the theoretical frameworks used in each didactical research tradition. The types of present-day non-binary didactical research on gender are briefly summarized and illustrated below:

- Aligned with the historical and philosophical German *Didaktik* tradition of *Bildung*, researchers put forward feminist critiques of the gendered culture of knowledge production at school, its impact on teaching and the risk and danger of reifying traditional gender roles through teaching, particularly in STEM (Scholand, 2011; Jehle & Blessing, 2014; for a discussion, Taylor, 2019). Questioning the Enlightenment origin of didactics, the new approaches integrate post-modernist, post-structuralist and/or queer theories to breach the binary perspective that underpins ‘mainstream’ research in German *Didaktik* (Goetschel, 2010; Kraus, 2019).
- In Nordic didactics, contemporary studies investigate gender, knowledge and power together within the Foucauldian framework of governance using post-structural discourse analysis to explore teaching and learning (Eriksson Barajas, 2010; Larsson et al., 2009). Within a pragmatist standpoint focus on how teacher-student interactions contribute to knowledge construction and meaning making, some works underscore how vivid relations between knowledge and power are in classrooms (Danielsson et al., 2018). Teachers communicate what counts as (ir) relevant knowledge or (ir)relevant ways of acquiring knowledge and thus contribute to the exclusion of certain knowledge and gendered ways of knowing, as well as the normalization of gendered power relations and hetero-normativity (Danielsson, 2014; Larsson et al., 2014).
- The hallmark of Francophone *didactique* research is to focus on how subject-specific knowledge gets transposed as it moves, through curriculum choices and teachers’ practice, from society to the classroom where learners confront it (Caillot, 2007; Ligozat, in this volume). Within the perspective of didactical transposition, the first interest in gender started with studies focusing on sex-stereotyped contents, teaching practices, and assessment, mainly in the subjects of PE, science education and French literature (Verscheure, 2020a). Using the Joint Action framework in Didactics (JAD), an innovative line of research in PE emerged in the early 2000s at the *University of Toulouse*, in France. Based on detailed analysis of classroom events, this body of research (for a review, see Amade-Escot, 2017) sheds light on how gendered contents are co-constructed by teacher and students as a by-product of the differential didactic contract (definition will be provided in a coming section). Drawing attention to the fact that

participants continuously interpret and define both the context and the meanings, this approach underlined the extent to which didactical transactions affect the doing/undoing of gender in the class far beyond the traditional sex categories.

A common characteristic of contemporary studies across the three strands of European didactic research is to provide fine-grained, descriptive accounts of classroom interactions, relations, and transactions with a particular focus on how gender impacts knowledge construction, meaning-making, and subject contents. All these works are rooted in non-binary theoretical gender perspectives (Taylor et al., 2019). All are related to the very specificity of knowledge embedded in learning environments, including its gendered aspects. Their conceptual frameworks may differ but they have common purposes: (i) to consider that students are differently literate, physically and discursively, according to the various school-subjects; (ii) to delve into how subject specific knowledge impacts, through teaching practices, gendered students' knowledge construction; (iii) to investigate how teaching and learning implies gendered power relations. This research, while rooted in the various didactical frameworks of individual European traditions, also finds stimulating sources of inspiration in post-structural feminist theories, critical pedagogies, queer theory and intersectional approaches. The purpose of the next sections is to look into a French *didactique* research program in depth.

### **Investigating Gender in Teaching and Learning: The Distinctive Approach of the French Research Program on 'Gender and *Didactique*'**

Broadly speaking, research in didactics relies on the idea that all students, whatever their differences, should be entitled to knowledge because knowledge has a potential power to move individuals towards emancipation. Thus, when investigating gender in the classroom, subject-didactics researchers aim to study the possibility and the constraints of gender sensitive pedagogies, identifying the critical role of knowledge in the promotion of gender justice in education. As far as the 'Gender and *didactique*' research program is concerned, the aim is twofold: (i) to describe the unequal dynamics of gendered learning related to each individual piece of knowledge content; and (ii) to create didactical conditions that allow girls and boys to acquire empowering knowledge and know-how while deconstructing traditional gender norms. Two tenets are at the core of this research program (Amade-Escot, 2019a; Verscheure, 2020a):

- Gender is theoretically understood as a relational concept, a fluid, multiple and shifting category beyond the traditional male and female binary,
- Gendered or non-gendered learning of any particular knowledge is co-constructed through didactical joint action.

### ***Gender as a Relational Concept***

Drawing on authors who criticized the blind, binary gender perspective in social sciences and who theorized the important distinctions among sex, sex-category, and gender (Butler, 1990; Chabaud-Rychter et al., 2010; West & Zimmerman, 1987), we consider gender as a relational and social construct to be understood far beyond the traditional male and female distinction. According to West and Zimmerman (1987) gender is ‘an emergent feature of social situations: both as an outcome of and a rationale for various social arrangements and as a means of legitimating one of the most fundamental divisions of society’ (p. 126). For the two authors, doing gender is ‘the activity of managing situated conduct in light of normative conceptions of attitudes and activities appropriate for one’s sex category’ (p. 127). Gender is thus performed depending on the social context through day-to-day practices and cannot be reduced to the notion of identity (Butler, 1990). In that theoretical perspective, we contend that ‘doing gender’ involves socially guided perceptual and interactional processes in all areas of activities, and ultimately in institutional arenas like schools. School activities often reproduce gender binary norms of behaviors and marginalize individuals who are not clearly identified as acting according to those traditional norms. In our research, the concept of gender is conceptualized and investigated in terms of the subject’s fluid, shifting and, sometimes fragmented, experiences that regulate, rather than determine, the enactment of unequal learning trajectories. Investigating gender in classroom practices to examine how girls and boys construct their knowledge differently through academic expectations requires focusing on the tiny and detailed ways knowledge contents are brought into play at the micro level of didactical transactions between students and teacher and/or among peers.

### ***A Research Program Rooted in the Joint Action Framework in Didactics (JAD)***

The French research program named ‘Gender and *didactique*’ (Amade-Escot, 2019a; Verscheure, 2020a) investigates gendered knowledge construction against the background of the JAD theoretical framework (Amade-Escot & Venturini, 2015; Ligozat, in this volume; Ligozat et al., 2018; Ligozat & Schubauer-Leoni, 2010). The purpose of this descriptive framework is to account for the situated dimensions of the intertwined process of teaching and learning. It draws on the idea that teachers’ and students’ practices are best theorized as ‘joint action’. However, joint action does not mean that participants have the same goals or agendas. Therefore, transactions about the knowledge at stake continuously occur in classroom settings. Tackling gender issues in didactic research requires attention to be given to the several facets of each individual piece of knowledge, particularly the gendered ones. Within a pragmatist view of classroom practices, the research program focuses on

the teacher and students' didactical joint action to account for gendered learning experiences and meaning-making through these experiences (Amade-Escot, 2019a; Verscheure, 2020a). It was first conducted in PE at different school levels (Amade-Escot et al., 2004, 2015; Verscheure, 2005, 2009; Verscheure & Amade-Escot, 2007). Then, studies were extended to other school subjects like science education (Pautal & Vinson, 2017) and philosophical debates at primary school (Verscheure et al., 2019), recently integrating an intersectional approach (Verscheure & Debars, 2019).

Over time, three analytical key concepts have appeared as relevant to address the critical question of gender in teaching and learning school subjects: 'differential didactic contract', 'epistemic gender positioning' and 'teacher and student practical epistemologies'. Their compatibility with the didactical joint action framework is discussed in Amade-Escot (2019a) and Verscheure (2020a).

### **Differential Didactic Contract**

The concept of didactic contract accounts for teacher and student joint action with regard to a particular piece of knowledge. It refers to the transactional dynamics of the teaching and learning semiotic processes: how individuals engage with and interpret the knowledge content at stake and its epistemological, social and cultural dimensions. According to Schubauer-Leoni:

The 'didactic contract is not implicitly negotiated with all the students of the classroom but with some groups of students having various levels of standing. These standings are themselves related to diverse hierarchies of excellence and are partially attributable to students' social backgrounds' (Schubauer-Leoni, 1996, p. 160, our translation).

Among these social backgrounds, gender as a social and cultural construction of habits, plays a major role in the differential evolution of the didactic contract in a class and, in consequence, in students' learning. This was clearly stated in the seminal doctoral thesis of Verscheure (2005).

### **Epistemic Gender Positioning**

Over the course of the first studies, the need for the second key concept appeared for investigating gender in didactical transactions. Epistemic gender positioning is a knowledge specific concept (Amade-Escot, 2019a; Verscheure, 2020a; Verscheure et al., 2020). It expresses what teacher and students privilege when interacting about the piece of knowledge embedded in any didactic *milieu* (i.e. a specific learning environment that encompasses conceptual and material components as well as social and semiotic aspects that provide the context of teacher and students' didactical joint action, Amade-Escot & Venturini, 2009). We borrowed the term

'positioning' from the work of Davies and Harré (1990) and Harré and van Langenhove (1999). For these authors, human behavior is constrained by group norms and is a product of the history of each individual's interactions with other people. Drawing on the social, symbolic and interactional dimensions of human action, the importance of context and language, these authors demonstrate that individual 'positions' are not fixed but fluid and can change from one moment to the next, depending on the context through which the various participants take meaning from the interaction. Extending the 'positioning theory' to teacher and students' gendered participation in teaching and learning, we claim that the concept of epistemic gender positioning: (i) resonates with Butler's idea of gender performativity (1990); (ii) allows us to grasp the various and differential ways gender is done or undone in the class; (iii) accounts for the transactional dynamics of the construction of gender inequities; and (iv) explains how gendered contents are enacted through didactical transactions. Actually, it is the various forms of gender positioning and repositioning that teacher and students enact during didactical transactions that play a major role in the differential evolution of the didactic contract. Among them, are some noteworthy forms of gender positioning in the classroom that are 'linked with each participant's practical epistemology', in the sense that teacher and students, who are embedded and act within an implicit and differential didactic contract, value or privilege different facets of knowledge depending on context, meanings and interactions' (Amade-Escot, 2019a, p. 35). This point marks the dialectic relation between epistemic gender positioning and the teacher's and students' respective practical epistemologies, the third key concept used in our approach.

### **Teacher and Student Practical Epistemologies**

The notion of an individual's practical epistemology is mainly conceptualized by two pragmatist research approaches in European didactics (Amade-Escot, 2019b; Ligozat et al., 2018). Broadly speaking, French didactics primarily studies the teacher's practical epistemology and how it influences the didactical transactions, while Swedish didactics focuses on that of each student. In our works, we pay attention to participants' practical epistemologies, understood as what the teacher's and students' actions privilege in the various facets of the knowledge taught and learned, to document the gendered patterns of expectation and perception the participants have of the subject.

To conclude, within the didactical joint action theoretical framework, the interrelations of the three concepts (differential didactic contract, epistemic gender positioning, and teacher and students' practical epistemologies) allow us to interpret how gendered contents are developed through transactions, and the extent to which they impact student gendered learning trajectories.

## **Two Examples of Empirical Contributions in Physical Education**

In this third section, we illustrate the twofold purpose of the research program through two examples of empirical works. The first one, extracted from a volleyball lesson at a middle school during ordinary teaching, exemplifies the relevance of the three key concepts delineated in the section above to describe the very subtle dynamics of unequal gendered learning that occurs unbeknownst to the participants. The second example, borrowed from a collaborative research design in rugby at primary school, points out how a gender sensitive pedagogy creates conditions in which girls and boys acquire empowering knowledge and know-how while deconstructing traditional gender norms. Both account for the evolution of didactical transactions and how gender is done or undone in the class.

### ***Method***

This section presents a brief overview of the observational method used in both studies, and sketches the principles that undergird the collaboration between teachers and researcher in the second one.

### **Overview of the Observational Research Design**

Data collection in both studies was based on the observation of didactical practices to provide fine-grained accounts of classroom events related to the specificities of the knowledge taught and learned. It used videotaping and participants' interviews over a succession of lessons, even though we only present one lesson in each setting here. The focus of observation (including verbal and non-verbal transactions) was on documenting: (i) the gendered forms of knowing valued by the teacher, (ii) the gendered forms of achieving the tasks valued by the students, and (iii) the diverse ways girls and boys interact with the teacher in relation with the gendered dimension of the knowledge content at stake. The purpose of the method was to provide a description and an analysis of the dynamics of the differential didactic contract.

### **Principles Guiding the Collaborative Research**

In the second study (rugby at primary school), the collaborative research was driven by the idea that changes in teaching can no longer rely on only teachers' awareness of gender inequalities but need an 'activist approach' as discussed by Oliver and Kirk (2015). Specific didactical strategies were co-elaborated by the teachers and the researcher: (i) all lessons were co-designed, (ii) the teaching was conducted by

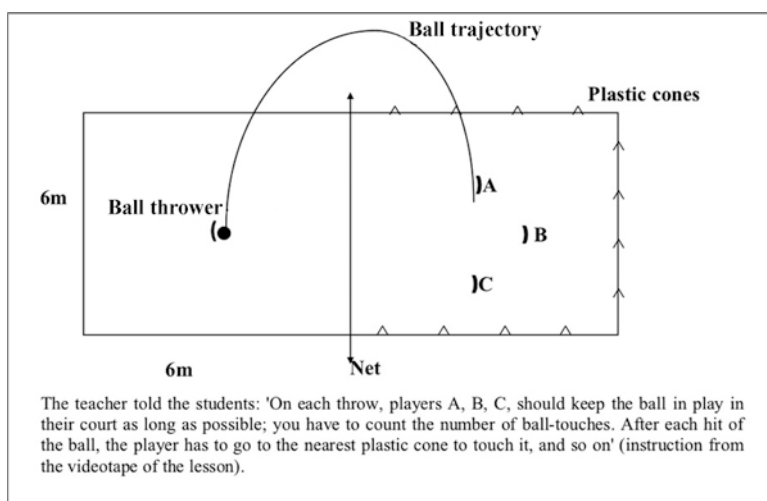


the teacher of the class and all lessons were videotaped; (iii) the debriefings after each lesson co-analyzed the lesson with the aim of providing guidelines for the next one. During the debriefings, videos of lessons helped the scrutiny of the teacher's and students' actions but they may also be used with students for reflective practice. At each step of the collaboration, the teacher's and researcher's deliberations focused on the functioning of the didactic contract and its potential/actual differential evolution among students.

### ***Effects of Participant's Epistemic Gender Positioning on Gendered Learning in Ordinary Volleyball Teaching at Middle-School***

This first excerpt is from a volleyball unit conducted by an experienced female teacher. It concerns the principal task of the tenth lesson of 14, which opposed a ball-thrower (as a facilitating high serve) and three players (A, B, C) who had to cooperate to maintain the ball overhead in their court (see Fig. 10.1).

The knowledge at stake is related to the continuity and the cooperation between the three players (A, B, and C) to maintain the ball alive overhead in their own court 'as long as possible'. The 'need for cooperation in the team was highlighted during the previous lessons based on easy serves initiated from the back of the court, at approximately six meters' (Teacher's pre-lesson interview). Furthermore, the teacher indicated that she privileged 'the two-hand set' over the lessons: 'I never forbid the two-hand bump but, at any time I see a student using the two-hand bump and losing the ball [most often because the ball is deviated or kicked down]



**Fig. 10.1** Volleyball Learning task as provided by the teacher

I mention that it is not the best way to play collectively'. In line with these aims, to increase collective cooperation in the task, each player has to initiate high ball trajectories, the only condition giving time to her/his partner to move under the ball with good balance and to hit it (continuity of the collective cooperation). At the same time, performing high trajectories helps to give the ball-player time to move sideways, to touch a plastic cone and then to return. Moreover, giving high trajectories to the ball forces the players to reorient the contact-surfaces upward when engaging bodily under the ball to perform a nice two-hand set. To summarize, the immediate targeted knowledge contents of the task are: (i) for the ball-player, to coordinate height and direction when hitting the ball; (ii) for the partners, to read the ball trajectory and decide who is going to play it next and, (iii) for the one who is in charge of the ball, to move under it to make a high trajectory pass.

At this stage, the knowledge and know-how at stake in the didactic *milieu* set by this teacher neither privileged stereotypical masculine gendered norms of volleyball practices such as spikes and powerful attacks (Verscheure, 2009), nor is benevolent toward girls in terms of demand of exacting content (Larsson et al., 2009). It may be said that this female teacher's practical epistemology is not really gendered.

### Observation of Didactical Transactions

The class was organized into six groups of students with heterogeneous volleyball skill levels. Three of the six groups were single-sex (two groups of boys, one group of girls); the three others were mixed. The six work groups of the class engaged in the task consistently:

- A group of four male students having the highest skill level in the class succeeded in keeping the ball flying during four to five successive hits but none of them moved sideways to touch the plastic cones during the task. They played in a very reduced space. The continuity of the volleyball rally was thus gained at the expense of high trajectories. These boys never risked losing their balance and they acted in ways that did not allow them to progress. Through their actions, we can interpret the meaning they gave to the task: they privileged a form of cooperation that fulfilled the overt part of the didactic contract (counting the number of ball hits). However, the implicit one (to perform ball high trajectories), which is at the core of cooperation, was left out of their work. Actually, these four boys did not increase their learning; they just repeated what they already knew. Surprisingly, the teacher never monitored them or reminded them to touch the plastic cone. At the end of the lesson, she mentioned to the researcher:

#### Excerpt 10.1

'well ... it's... it's difficult ... I saw groups playing differently: some try to hit the ball high, others target the partner ... and I also saw some students that played together with exchanges of tiny amplitude, in a small space, without any risk of losing their balance' (post-lesson interview, italics our emphasis).

Playing like this often characterizes forms of beginners' practical epistemologies but, in this group of more highly skilled boys, it can be interpreted in terms of epistemic gender positioning: these four boys favor their male self-esteem, exhibiting a kind of success in the task while remaining at the margin of the didactic contract.

- Two other groups of mixed students having an intermediate level of volleyball skills organized their work by placing one receiver in the middle of the volleyball court and the two other players near plastic cones. The receiver (most often a boy) deviated the ball to target one or the other partner. We observed very few successive hits of the ball (one or two) before the ball fell. All actions were explosive. The height of the ball trajectories never exceeded the net line. In these groups, students privileged the instruction to 'touch the plastic cone' at the expense of the other dimension of the work, which was the cooperation in the team. The teacher consistently monitored these two groups: 'do not stay stuck to the cone, move, move'. She invited them to reflect: 'how can you keep the ball alive?' Some students (boys as well girls) maintained their place in ways that might be interpreted as avoiding the responsibility of taking charge of any action on the ball, letting the skilled boy in charge or the receiver manage the game. In terms of epistemic gender positioning, we can interpret these actions as a feminine way of being a 'competent bystander'. Competent bystanders are students who are particularly competent for 'the avoidance of participation without misbehaving' (Tousignant & Siedentop, 1983, p. 49), often described as ways of practicing games that girls privilege to protect their selves during PE lessons valuing masculinity (Davis, 2010; Griffin, 1984).
- Finally the students of the other three groups (in the majority girls) who encountered the greatest difficulties at the beginning of this volleyball unit (Teacher's pre-unit interview) tried to apply the instruction. Each student who hit the ball moved sideways to touch the nearest plastic cone and return. The ball trajectories were of limited amplitude and thus did not allow a second touch of the ball. The teacher concentrated her monitoring in the direction of these three groups. She first invited the students to reflect: 'how can you keep the ball alive?' Then she reminded them 'go go go and touch the cone'. She particularly supported the single-sex group of girls, who applied themselves strongly to the game, and said loudly: 'high, high ... need to send it [the ball] high', even though they did not really succeed in doing so. The teacher gave support: 'yes good idea, it's a good job'! Interestingly, during the 32 min of the task development, we observed the early stage of new know-how, some clumsy adjustments with the premises of an upward reorientation of the two-hand contact-surfaces, and better body engagement under the ball. In these three groups, students' actions expressed a certain sensitivity to the implicit part of the didactic contract: the meaning they built in the situation at hand was compatible with the knowledge and know-how targeted by the teacher. Through didactical joint action, emerged relevant volleyball forms of knowing. In terms of boys' and girls' epistemic gender positioning, we also point out a greater independence with respect to traditional gender norms (Davis, 2010).

To conclude on this first research excerpt, the analysis revealed the diversity of student learning and how gender epistemic positioning impacted the functioning of the differential didactic contract. It also underscored the uncertainty of the didactical process to address gender in an ordinary setting, even when knowledge contents and the teaching did not pay tribute to masculinity as is often the case in PE (Davisse, 2010; Fagrell et al., 2012; Griffin, 1984; Larsson et al., 2009; Verscheure, 2009).

### ***Raising Teachers' Gender Didactical Judgment Through Collaborative Research in Rugby at Primary School***

This second research excerpt is borrowed from a collaborative longitudinal study aiming to combat school construction of gender differences (Verscheure, 2020b). As pointed out above, the research design followed 'an activist approach' (Oliver & Kirk, 2015) to increase gender justice in teaching and learning, notably in raising teachers' didactical judgment (Almqvist et al., 2019). Moreover, consistently with the 'Gender and *didactique*' research program, which emphasizes that gender order in the class is a by-product of teacher and students' didactical joint action, the collaborative project also fostered young children's awareness of gender issues in their learning (Verscheure, 2020a, b; Verscheure et al., 2019). In that vein, during all PE lessons and in continuity with other activities in the class, any gendered exchange, remark, or form of bullying expressed or suggested by any child (boy or girl) related (or not) with the subject was brought forward to the class to increase awareness about gender stereotyping.

The excerpt selected here is related to a rugby unit (8 lessons on the field, 3 on videos) at elementary school (age 6–7 years) during the second year of the research. The choice of rugby, a sport activity having a strong social male connotation, makes the recognition of gender stereotypes more salient. In rugby, they are often expressed as: (i) girls and timorous boys systematically avoid contact with the opponent and get rid of the ball as soon as received without any tactical intention, and (ii) more confident boys happily engage in bodily struggle and, whatever the opponent context, often perform (un)successful individual runs to score a try. Of course, these descriptions are not only binary but also reductionist and gender biased.

The educational project during the rugby unit aimed at fighting these stereotypical social gender norms by implementing relevant non-gendered learning environments where the management of the balance between power and strategy in the game was at the heart of the teaching. Its ambition was to maintain strong vigilance so that girls, but also certain boys, did not become confined (or confine themselves) in bystander roles; and that not only the most highly skilled boys could feel authorized to score tries. In other words, the collaboration between the teacher and the researcher over the unit aimed at undoing gender.

Within the above purpose, the broad didactical strategy was to involve students in a play-practice of school rugby based on a game where two teams of two players

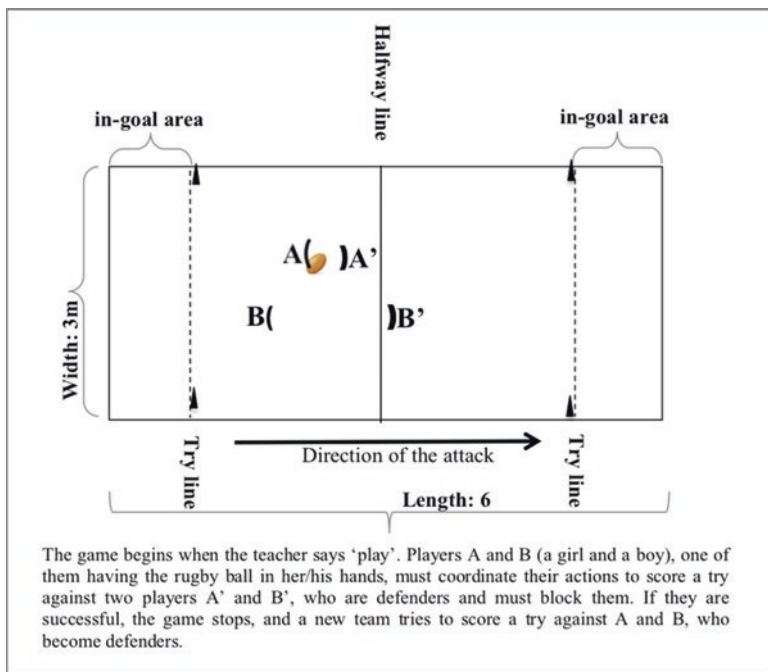
played against each other. This reduced game format (noted below as 2vs2) is considered as the ‘simplest unit of a complex game’ that maintains the logic of rugby as a social sport practice (Bouthier, 2007). In our research, the 2vs2 was used to develop both tactical and technical rugby skills that contributed to a non-gendered rugby play-practice. Another standard to promote gender cooperation between children over the unit was that all learning tasks involved teams systematically composed of one girl and one boy, both of almost identical size. Moreover, approximately every two lessons, a short video session was dedicated to students’ analysis of their own game. The overarching learning purpose for the unit was collaboratively defined in terms of increasing ‘*students’ sense and know-how to achieve an accurate collective attack and score a try*’ within the 2vs2 game.

The task is multivalent in its conception: there are several ways to achieve it, making various students’ actions possible according to their own practical epistemology. The knowledge contents at stake respect the logic of a rugby game. During the attack: (i) each ball-carrier has to coordinate her/his action with her/his partner using two types of tactical alternative: she/he may strike the defender or she/he may skirt around the defender, before passing the ball to her/his partner; (ii) for the partner, she/he may adjust her/his move to support the ball-carrier and/or to be available to receive the ball and go forward in the direction of the in-goal area; (iii) both players have to cooperate consistently during the ball progression whatever the choice of alternatives. As in any rugby game, no intentional throwing or passing the ball forward is allowed. All these actions are equally relevant ways to perform an accurate collective attack and score a try without privileging only strength and power to succeed. An important aspect of the didactic milieu thus concerns the dimensions of the playing area. The ground must be neither too broad nor too restricted to increase various forms of tactical cooperation between students. The length (6 m) and width (3 m) of the field (see Fig. 10.2) were designed to facilitate cooperation between children through tactical choices that did not privilege traditional gendered rugby practice only (i.e. if the ground is too wide the ball-carrier will most often skirt around the defender, avoiding body contact; if the ground is too long it becomes hazardous to maintain cooperation over the field as it favors fast, strong children and an individualistic attitude in the game).

To sum up, the knowledge at stake in this task offers the students various tactical choices in relation with the context at hand, allowing diverse epistemic gender positioning and repositioning throughout the game. During its completion, great vigilance must be exercised by the teacher over time in order to attach equal value to all ways of performing, notably students’ actions that increase cooperation in the team and not only a hand-to-hand struggle.

### **Observation of Didactical Transactions: The Case of Nina and Mathieu**

In this section we describe the case of Nina and Mathieu during the 5<sup>th</sup> lesson of the unit, which illustrates how students, girls and boys, progressively undo gender over the unit. At the very start of the 1<sup>st</sup> lesson, Mathieu said loudly that ‘rugby is for



**Fig. 10.2** Rugby 2vs2 play practice co-constructed by the teacher and the researcher

boys'. This gave the experienced female teacher the opportunity to bring forward a debate in the class on what sports are appropriate (or not) for girls and for boys: a first step to address sex-stereotyping! Thanks to children's inputs during the debate, the teacher concluded: 'Hey Mathieu: what we think is not always the reality!' and for the class: 'we will see at the end of the unit if Mathieu has made a mistake'.

During the 2vs2 play-practice, all children consistently engaged in the game. For example, the team of Nina and Mathieu scored a few tries. Nina initiated the first one, choosing to go with the ball and engage with the defenders. The video recordings of the previous lessons show that she did not do this at the beginning of the unit, where she privileged skirting around defenders to avoid bodily confrontation. In her successful effort, the two defenders came to her and attempted to capture the ball from her hands. Nina, surrounded by the defenders, turned her body backward and looked around to find the support of Mathieu. The boy was waiting for the ball behind Nina, at some distance from the defenders. Nina's strategic choice of carrying the ball close to the defenders gave her the opportunity to pass to her partner, who was free from opponents at this time. The pass was effective and Mathieu progressed forward. He concluded the collective action by scoring a try. In this attempt, the two students demonstrated great understanding of collective basic rules of rugby: fixing the defenders, making a backward-pass. After this attempt, and in line with the didactical strategy of the whole unit, the teacher called the four players to reflect on what happened. The teacher then summarized the relevant key-point of

their discussion for all the class: ‘Thanks to Nina’s choice of fixing the defense, Mathieu found an open space to carry the ball to the in-goal area’. Later, in another attempt, Nina was the one of the team who carried the ball into the in-goal, after a good backward pass from Mathieu.

All these actions and reflections did not appear suddenly. During the previous four lessons, the teaching had emphasized the tactical notion of how to collectively carry the ball forward without ever throwing or passing it forward. It also provided the children with learning experiences of performing the backward-pass skill. Moreover, during a video session, a debate was implemented within the class to focus students’ attention on collective strategies rather than on individualistic actions.

This short extract exemplifies the interest of using multivalent tasks as a didactical tool to undo gender at school. There is no one best way or single approach! Learning environments (or didactic *milieux*) should offer several legitimated and equally recognized ways of achievement. This didactical strategy allows children to express their own epistemic gender positioning in the course of the collective actions. But, in itself, this condition is not sufficient to open new learning paths. A permanent focus on students’ gender positioning and repositioning is also needed. This was another target of the collaboration during the research because such gender focus helps teachers, when monitoring students’ actions, to manage the didactical uncertainty of the differential didactic contract: an additional condition to envision relevant evolution of students’ practical epistemology, as exemplified by Nina and Mathieu.

This second research excerpt illustrates some didactical conditions under which collaborative research allows gender justice to be increased in terms of students’ achievement and in terms of the teacher’s didactical judgment:

- Over this PE unit, children (boys and girls together) progressively learned several things: (i) ambitious knowledge content related to how to play rugby tactically; (ii) new rugby experience breaking away from traditional teaching which, too often, pays tribute to masculinity; (iii) mutual gender respect including the sense of fair play through cooperation between students. All of this is in contrast with PE teaching that endorses benevolence towards girls and ostracism toward boys who are not clearly identified as acting according to their assigned sex (Larsson et al., 2009).
- Over the collaboration (co-construction of learning environments, post lesson debriefings, video co-analyses, etc.), this female teacher enhanced her teaching skills in rugby, a sport she had not taught much before. She gained a deeper cognizance of the logic of rugby that helped her to increasingly use more gender sensitive monitoring during didactical transactions. For example, as a co-author, she has reported that, over the course of collaborative research, she ‘expanded vigilance about sex-stereotyping whenever it appeared in student discourse or, more implicitly, in PE practices’ (Verscheure & Barale, 2017).

## Conclusion: Gains of Addressing Gender at the Micro-Level of Didactical Transactions

The twofold purpose of this chapter was to draw attention to: (i) the subtle gendered didactic phenomena that, unbeknownst to anyone, are co-constructed in class through teacher and student transactions within a specific learning environment where stereotypical masculine and/or feminine forms of action can be valued (or not) by participants, and (ii) how a collaborative emancipatory research project can provide directions to increase gender justice and equity in PE.

Within the JAD Francophone theoretical framework, the research program on ‘Gender and *Didactique*’ highlights the specific forms of gendered embodiments, discourses, values and cultural experiences that undergird knowledge construction in everyday classroom life. It shows how all of these constitute a ‘material force’ (Taylor, 2013) at the roots of gender inequalities that are enacted through tacit and implicit transactions in relation to the gendered nature of the knowledge at stake. The specific contribution of this line of research is to feature the effects of didactical transactions on gendered learning and how it evolves differently (or not) between students.

The volleyball case demonstrates the subtle process at the base of the production of gender order in the classroom even when the teaching and the contents are not gender biased, as is traditionally the case in PE. In creating the concept of epistemic gender positioning, the program gave rise to an analytical tool that expressed how individuals engaged themselves in the situated teaching and learning processes with regard to the piece of knowledge at stake (Amade-Escot, 2019a; Verscheure, 2020a; Verscheure et al., 2020). This concept, which is very specific to the knowledge intended to be taught, and then really taught, provides new research perspectives to describe how gender order and its subsequent inequalities are enacted in the classroom but can also be defied. This research program, coherent with previous research, underscores that the teacher’s experience and goodwill are not sufficient and suggests that a better understanding of the didactical phenomena at the core of doing/undoing gender in the class can open new directions to foster emancipatory projects.

Then the rugby case at elementary school comes to the fore, illustrating the didactical conditions a collaborative research design is able to implement in raising teachers’ gender sensitivity and didactical judgment. It shows the extent to which learning environments – understood as the evolving dialectic genesis of a didactic milieu and a didactic contract monitored by a teacher – can envision undoing gender in the class without sacrificing the quality of the content.

In that sense, the ‘Gender and *didactique*’ research program supports the idea that gendered learning can be challenged even if it cannot be totally eradicated. Teaching and learning are not neutral processes and gender emancipation can be contested as it is bound up in power relations. That is why the collaborative didactical strategy adopted is to consider that gender justice in teaching and learning may remain something of a holy grail if the teacher’s mediation is not strongly attentive



to power relations in the class, to the implicit hierarchy of the activities related to the knowledge at stake, and to the need for critical reflexivity during the exchanges between students. It also suggests that greater attention should be paid to teacher and students' joint action related to knowledge during classroom events and how the differential didactic contract is functioning.

In terms of research perspectives and with the purpose of addressing the issue of gender to meet educational and societal challenges, we believe that future research on subject didactics has to delve more deeply into: (i) the study of knowledge content and its gendered role in teaching and learning; (ii) the extent to which participants' epistemic gender positioning impacts learning and students' developmental processes; and (iii) the implementation of didactical conditions that support changes in teaching and learning. Important themes still waiting to be investigated!

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