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Teaching Practices and Symbolic Violence: The Case of Racket Sports at School

Pratiques enseignantes et violences symboliques : le cas des sports de raquette en contexte scolaire

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ABSTRACT: Starting from the hypothesis that standard forms of intervention by racket sports teachers involve a degree of symbolic violence insofar as they do not take the *in situ* mobilization of students into account, two studies were performed: 1) 394 students were asked about what they hoped to experience and what actually occurred in the table tennis classes they had taken, along with their perceived pleasure in this activity; 2) the temporal structure of 1,844 points scored by 40 students, who had been ranked vis-à-vis five levels of intention in badminton were compared. Our results demonstrate that there is a mismatch between teaching practices and activities that provide pleasure to students, with a mean perceived pleasure score for table tennis (3.7) that is significantly lower than that for physical education activities in general (5.3). We also found that, in badminton, the rhythm of play varies significantly among the five registers of intention ($p < 0.0001$), while standard teaching practices tend to use only one playing time in this sport. In the discussion, teachers are invited to develop new didactic strategies that are more “responsible” than traditional time-based forms of class competition.

KEYWORDS: Symbolic Violence, Racket Sports, Perceived Pleasure, Physical Activity, Responsible Strategies.

RÉSUMÉ : L'hypothèse de notre travail est la suivante : les pratiques scolaires d'intervention en sport de raquette seraient porteuses de violences symboliques dans la mesure où elles ne prendraient pas en compte le sens de la mobilisation in situ des élèves. Deux études ont été réalisées : une première,

centrée sur le discours de 394 étudiants, examine le décalage entre les pratiques vécues et souhaitées en tennis de table ainsi que le plaisir perçu dans cette activité ; une deuxième, centrée sur l'action, compare la structure temporelle de 1844 points joués par 40 étudiants classés selon cinq registres d'intention de jeu en badminton. Les résultats montrent, d'une part, un décalage entre les dispositifs des enseignants et les activités porteuses de plaisir chez les élèves et un score moyen de plaisir perçu significativement faible en tennis de table (3,7) par rapport à l'EPS en général (5,3). D'autre part, le rythme du jeu en badminton diffère significativement entre les 5 registres d'intention de jeu ($p < 0,0001$) alors que les pratiques usuelles d'enseignement sont plutôt orientées vers un temps de jeu unique. La discussion invite à réfléchir à des stratégies enseignantes davantage "responsables" que la traditionnelle montante-descendante au temps.

MOTS CLÉS : violence symbolique, raquettes, plaisir perçu, activité physique, stratégie responsable.

ZUSAMMENFASSUNG: Unterrichtspraktiken und symbolische Gewalt: das Beispiel der Rückschlagspiele im schulischen Kontext

Unserer Arbeit beruht auf folgender Hypothese: da sie nicht die tatsächliche Sinngebung der Schüler berücksichtigt, impliziert die schulische Lehre der Rückschlagspiele eine Form symbolischer Gewalt. Es wurden zwei Studien durchgeführt: in einer ersten wurde der Diskurs von 394 Schülern hinsichtlich der Diskrepanz zwischen den erlebten und gewünschten Praktiken im Tischtennis und dem bei dieser Aktivität gefühlten Spaß analysiert. Eine zweite Studie konzentrierte sich auf die Aktion und verglich die zeitliche Struktur von 1844 Punkten im Badminton, die 40 in fünf Spielintentionalkategorien eingeteilte Spieler spielten. Die Resultate zeigen zunächst eine Diskrepanz zwischen den Vorgaben der Lehrer und den Aktivitäten, die den Schülern Spaß bereiteten, und einen signifikant schwachen Wert des gefühlten Spaßes beim Tischtennis (3,7) im Vergleich zum Sportunterricht im Allgemeinen (5,3). Außerdem zeigte sich, dass die Spielrhythmen im Badminton sich deutlich je nach den fünf Spielintentionalkategorien ($p < 0,0001$) unterscheiden, während die üblichen Unterrichtspraktiken eher auf einen einheitlichen Spielrhythmus ausgerichtet sind. In der Diskussion wird dazu angeregt, über eher „verantwortungsvolle“ Unterrichtsstrategien als über die traditionelle Ausrichtung nach auf- und absteigendem zeitlichen Rhythmus nachzudenken.

SCHLAGWÖRTER: symbolische Gewalt, Schläger, gefühlter Spaß, Sport, verantwortungsvolle Strategie.

RESUMEN: Profesores y prácticas, la violencia simbólica: el caso de los deportes de raqueta en el contexto escolar

La hipótesis de nuestro trabajo es la siguiente: las prácticas escolares de intervención en los deportes de raqueta poseen violencias simbólicas en la medida que estas no toman en cuenta el sentido de desplazamiento in situ de los alumnos. Se han realizado dos estudios, el primero centrado en el discurso de 394 estudiantes, este examina la diferencia entre las prácticas vividas y deseadas en el tenis de mesa, como también el placer percibido en esta actividad; un segundo estudio se centró en la acción se compara la estructura temporal de 1844 puntos jugados por 40 estudiantes clasificados de acuerdo a cinco registros de intención de juego en bádminton. Los resultados muestran por una parte la separación entre los dispositivos de los profesores y de las actividades que permiten el placer en los estudiantes y un resultado medio de placer percibido muy débil en tenis de mesa (3,7) en relación a la educación física deportiva EPS en general (5,3). Por otra parte el ritmo de juego en bádminton difiere significativamente entre los cinco registros de intención de juego ($p < 0,0001$) cuando usualmente las prácticas de los profesores son más orientadas hacia un tiempo de juego

único. La discusión se invita a reflexionar sobre las estrategias de enseñanza más «responsables» que el tradicional tiempo de arriba-abajo.

PALABRAS CLAVES: violencia simbólica, raquetas, deseo percibido, actividades físicas, estrategias responsables.

RIASSUNTO: Pratiche d'insegnamento e violenze simboliche: il caso degli sport di racchetta in ambito scolastico

L'ipotesi del nostro lavoro è la seguente: le pratiche scolastiche d'intervento nello sport di racchetta saranno portatrici di violenze simboliche nella misura in cui esse non prenderebbero in conto il senso della mobilitazione *in situ* degli allievi. Sono stati realizzati due studi: un primo, centrato sul discorso di 394 studenti, esamina lo sfasamento tra le pratiche vissute ed auspiccate nel tennis tavolo così come il piacere percepito in quest'attività; un secondo, centrato sull'azione, compara la struttura temporale di 1844 punti giocati da 40 studenti classificati secondo cinque registri di intenzione di gioco nel badminton. I risultati mostrano, da una parte, uno sfasamento tra i dispositivi degli insegnanti e le attività portatrici di piacere negli allievi e uno *score* medio di piacere percepito significativamente debole nel tennis tavolo (3,7) in rapporto all'EFS in generale (5,3). Dall'altra parte, il ritmo del gioco nel badminton differisce significativamente tra i cinque registri d'intenzione di gioco ($p < 0,0001$) mentre le pratiche usuali d'insegnamento sono piuttosto orientate verso un tempo di gioco unico. La discussione invita a riflettere sulle strategie di insegnamento maggiormente responsabili rispetto alla tradizionale montante-discendente del tempo.

PAROLE CHIAVE: attività fisica, piacere percepito, racchette, strategia responsabile, violenza simbolica.

There has been a keen interest in racket sports in French schools since the 1990s, when badminton and table tennis were added to the physical education curriculum. The case of badminton is particularly illustrative: this sport, which was more or less unknown at the beginning of the 1980s, had, by the mid-1990s, risen to second place among the most practiced individual sports in France's UNSS [*Union nationale de sport scolaire* or National Union of Sports in Schools]; in 1995, the *Fédération Française de Badminton* boasted 43,420 registered members, as opposed to 24,000 in 1990 (Gomet, 2012). In physical education curricula [known as *l'éducation physique et sportive* or EPS in France], badminton became one of the "standard" sports offered to students, present in 96% of high schools [*lycées généraux*] and 94% of vocational high schools [*lycées professionnels*] (Gomet, 2012). In 2001, it was one of the most frequently taught sports, particularly in high schools (Terret, Cogérino & Rogowski, 2006).

Yet at present, racket sports do not seem to be an ideal way of motivating students

in physical education classes. For example, Deslaurier (2007), who studied perceived pleasure experienced during different activities in physical education classes, showed that badminton comes in at only the eighth place, along with rugby, and behind soccer, dance, gymnastics, judo, circus skills, outdoor games and even acrobatic gymnastics. However, badminton remains the most frequently practiced individual sport in the UNSS and the number one federated sport in terms of new members. One may well wonder, as does Gomet (2012), whether current students' lack of interest in racket sports stems from the way these sports are taught in schools.

This is what we have sought to examine, by looking at the possible symbolic violence that may be inflicted when racket sports are taught.

Our work aims at testing the hypothesis that the standard forms of intervention by racket sports teachers and coaches involve a degree of symbolic violence, to the extent that they do not take the *in situ* mobilization of students into account. Two studies will allow us to achieve

that objective: 1) a study centered on what students say, which examines the gap between their expected and actual experience in table tennis, along with the perceived pleasure of students who participate in this sport, and 2) a study centered on action, which explores the gap between recommended activities and the level of mobilization of students who play badminton.

ASPECTS OF OUR THEORETICAL ORIENTATION: SYMBOLIC VIOLENCE AND INTERVENTION

The etymological origins of the term “violence” evoke the notion of imposition or intrusion. “Violence” can be defined as “the entire spectrum of activities and actions that provoke suffering or physical injury in individuals” (Hurrelman, in Vettenburg, 1998). Such violence can be inflicted and exerted consciously or unconsciously, but it always gives rise to a form of suffering or injury in those who are its victims. In the context of physical education in schools, these injuries can appear in different ways, such as disengagement and a loss of mobilization and pleasure.

To be more specific, violence can be considered symbolic when its infliction involves a mismatch between meanings or significations. The teacher’s imposition of ways of practicing that conflict with the meaning that students themselves give to their activity can be considered a form of symbolic violence, which may lead to a loss of motivation or a lack of pleasure among students. This article examines this form of symbolic violence: the conflict between intervention practices and the meaning that students give to their actions, as it is conveyed by educational institutions and directed towards learners. Different forms of such conflict or of a rupture of the pedagogical process, occurring between the principles of proposed situations and the rules governing individual actions, can be listed (Bui-Xuân, 1998, 1999):

A first form of conflict is linked to the structured scheduling of school time, which can

counteract or even thwart didactic concerns. In fact, table tennis and badminton are sometimes promoted in school programs for organizational reasons, “because table tennis can occupy a large number of students in a relatively limited space” (Joing & Bauer, 2012) or because “the facilities required [for badminton] are much more attainable than most other sports activities” (Gomet, 2012). Likewise, in sports practiced in school settings, badminton and table tennis are often played by the clock. Here again, scheduling requirements are in conflict with didactic aims: “although the game should logically involve matches scored by points, the school schedule can force us to prefer playing by the clock, which is [...] more effective and functional” (Leveau, 2007, p. 77). However, this kind of by-the-clock play can tend to impair the sport in its own right. The objective of a traditional “*montante-descendante*” match (a common form of in-class competition in which students play matches that are structured to rank them into groups based on their levels; see Descamps, 2008) is often to lead students to “hurry up” in order to score as many points as possible. There is no need for time management in this case, because students have to be as fast as possible.

A second form of conflict involves the didactic structures of physical education classes in general and the teaching of racket sports in particular. First of all, with regard to the phase of didactic transposition (Chevallard, 1985), Joing and Bauer’s (2012) study of table tennis classes in schools found that the organization of space is prioritized and produces a focus on the educative facet (i.e., the managing of order) in a way that seems to inhibit or prevent the use of certain teaching tools. At best, when there is a real concern for learning, the predominance of organizing the play area in terms of targets to be attained without including a tactical dimension (“game of darts”) seems to organize the activity of teaching. If we then consider the content of the teaching and the student’s phase of appropriation, we can also identify several pitfalls; one of which is the teacher’s attitude, when it

consists in a prescriptive understanding of programs, one that focuses more on the skills to be acquired than on the student's mobilization. In such cases, the teacher begins from the desired outcome and suggests a "reductive" activity (Gagnaire & Lavie, 2007) that is inappropriate from the point of view of both the cultural activity and the student's activity (Dieu, 2015a). Furthermore, there is a second divergence, which can be called "educative" in nature, and which consists in concentrating on acquiring social and methodological skills. Table tennis and badminton happen to be prime sports for experimenting with new coaching and observational approaches. Nevertheless, in an effort to prioritize the decision-making dimension of racket sports, teachers often reduce the students' physical activity to verbal strategizing or the filling out of worksheets about their game plans. The systematic use of such activities can tend to reduce the time of movement tempo, which can in turn fall short of students' expectations; these students struggling to apply their plans when they actually play.

A final form of conflict involves the role that time often plays in evaluating racket sports, especially in the early interruption of rallies; such evaluative simplifications downplay the weight of contextual action (Couartou & Grunenfelder, 1992). As early as 1992, Couartou highlighted the specific nature of the alternation between game time and non-game time in badminton, in comparison with tennis or table tennis: "badminton demands a lot of energy and it is essential to provide time for recuperation" (p. 47). These authors were already warning against teaching approaches that deemphasize the weight of contextual action for the sake of simplifying evaluation: "If it can be interesting to pay attention to early rally interruptions with new players, it is easy to lose sight of the basic tactics of badminton, which is to set up high-intensity exchanges by requiring the opponent to move around and get tired" (p. 148).

Thus, any conflict between the prescribed situation (the teacher's approach) and the

experienced situation (the meaning of the activity for the student) carries a symbolic violence which is liable to damage the student's pleasure in and mobilization for the game.

To get a sense of this and especially of the ruptures of meaning (which bring violence), two complementary approaches will be taken up in what follows: one founded on discourse, or what is said, the other on action, or what is done.

The first consists in the evaluation of perceived pleasure in racket sports activities. This perceived pleasure provides information about how study subjects represent their experience. It is thus an indicator of the presence or absence of conflict between the prescribed situations and the experienced activity. However, it is limited in its ability to account for the real mobilization of students who can always, once outside the experiential context, state "I didn't enjoy or take pleasure in that" even though they had been very involved when playing (Récopé & Bui-Xuân, 2007). This is why we have also chosen to investigate the specific *in situ* mobilization of study subjects by exploring it not in reference to discourse, but to action. The concept of "mobilization" will be defined here in conative terms (Bui-Xuân, 1998), as the meaning of the student's real activity at the experiential level he is at. For this approach, progress in a sport is not limited to a linear improvement in performance, but instead involves a deep, qualitative restructuring of the meaning of the player's mobilization. The ergonomic meaning of movement, in terms of the direction and the intensity of his play, varies according to the student's level in the conative curriculum (Dieu, 2012, 2015b).

METHODOLOGY

Study 1: Teaching Practices and Perceived Pleasure in Table Tennis

Participants. A group of 394 first-year university students (175 of whom were studying

law and the other 219 physical education) participated in this study. The sample was composed of 183 female students and 176 male students (35 participants did not specify their gender).

Although this sample had a weak ecological validity with respect to the university background of participating students, statistical analysis by comparison of means (student's *t*-test) did not show that the students' background had any significant effect on the different variables of the study, such as the type of situations experienced or the students' perceived progress and pleasure. This result suggests that bias related to this sociological variable remains limited.

Survey tools and data analysis. Participants answered a five-part questionnaire. Its first part was based on a tool that has been scientifically validated as measuring perceived pleasure during physical activity (Delignières & Pérez, 1998). It includes questions about their enjoyment during table tennis learning cycles in middle school and high school, and is composed of twenty closed questions with a seven-point approval rating scale (10 questions about middle school and 10 questions about high school). Students were to place themselves on the scale by indicating whether they agreed or disagreed with the statements that had been provided. Twelve items related to pleasure perceived in the activity (for example, "I found the table tennis cycles enjoyable") and eight referred to a lack of pleasure (for example, "I did not like the table tennis cycles"). A perceived pleasure score from 1 to 7 was obtained for each participant by adding the score (where 1 = strongly disagree and 7 = strongly agree) for each "perceived pleasure" item and then dividing the sum by the number of items in this category (i.e., 12). Conversely, a "displeasure" score for the activity was obtained by adding the scores for each item concerned with a lack of pleasure and then dividing the sum by eight (the number of items included in the "displeasure" category). A twenty-first question asked about the

student's enjoyment if his physical education classes as a whole.

Part two of the questionnaire asked students about the types of situations they had experienced during the table tennis cycles in their prior schooling. A list of eighteen situations was presented, which included competitive situations ("*montante-descendante* matches", "thematic matches", "matches without a specific theme"), repetitions and learning situations ("repeating a movement", "repeating serving", "hitting targets on the table", "situations not involving the table"), situations using teaching materials (ball basket, above-the-net trainer, videos, special balls), situations including a dimension of social participation (refereeing, coaching, observing) and situations with different kinds of groups ("practice with two students per table", "practice with more than two students per table", "doubles", "tournaments"). Participants were asked to rank the frequency with which they experienced these situations on a four-point scale (from 1 = never to 4 = often). A score of less than three indicated that the situation was experienced rarely, and very rarely for a score of less than two. Conversely, a score greater than or equal to three indicated recurring situations.

Part three of the questionnaire measured the progress perceived during table tennis cycles, using a closed question with a four-point approval rating scale (from 1 = no progress at all to 4 = significant progress).

Part four asked students about what they did and did not like about their table tennis cycles and what they would have liked to do or experience as regards that activity. This part was composed of two open-ended questions. The data analysis was based on the identification of inter-personal recurrences.

Finally, part five of the questionnaire concerned sociological data, in particular the student's university program and gender.

Data Collection. The questionnaire was administered as a pre-test to 33 second-year undergraduate students in the physical

education department, during tutorial classes in their degree program. Thus only those students who were present in class on that day filled it in. Groups were chosen at random (all the groups that had a class on the same day participated in the pre-test). A period of explanation, during which the aims of the survey, the confidentiality of results and the option not to participate were discussed, preceded the distribution of the questionnaire.

Study 2: Teaching Practices and *In situ* Mobilization in Badminton

Participants. Forty healthy adolescents and adults between 17 and 37 years of age participated in this study. They were volunteers and were either students or badminton players affiliated with the *Fédération Française de Badminton* (31 men and 9 women). Details of their characteristics are presented in Table 1.

Table 1. Characteristics of Participants (Study 2. Badminton)

Participants	Total	Males	Females
N	40	31	9
Age (years)	22; 20 [17 - 37]	22; 20 [17 - 37]	21; 20 [18 - 26]
Height (cm)	176; 176 [160 - 195]	178; 178 [160 - 195]	168; 168 [162 - 176]
Weight (kg)	70.0; 69.5 [52.0 - 100.0]	73.0; 73.0 [53.0 - 100.0]	59.4; 58.0 [52.0 - 70.0]

Data are presented as mean; median [range].

Study subjects played several sets of 21 points against different opponents. All of these sets were filmed and ranked by level of experience (1, 2, 3, 4, 5) using the criteria of the conative curriculum (Dieu, 2010, 2012, 2015b). To ensure that the match-ups were homogeneous in terms of player strength, it was not determined prior to the sets which data would be saved. The score of the played sets was retained only if the losing player had been awarded more than 11 points.

Tools

Classification of subjects in terms of conative levels. To “classify” study participants, we used the conative curriculum, which has been applied to the practice of sports (Bui-Xuân, 1999) and, more recently, specifically to badminton (Dieu, 2012, 2015a).

The conative approach is based on the idea that progress in sports cannot be reduced to a simple increase in the level of performance, but involves instead a change in the way the player is mobilized by or engaged in the game. Depending on his/her experience (the conative step), the player mobilizes prevalently either

his/her structure (physical capacity), technique (motor dexterity) or functionality (decision-making and tactical choices). In the first (structural) level, before “winning,” there already is a preoccupation with “not losing”; the player’s intention is to return the shuttlecock into the opponent’s court with as much force as possible, and this is why physical capacity is the first aspect mobilized. Once the player has solved the problem of hitting the shuttlecock back, a new question emerges: how can the opponent be beaten? From there, the player begins to make use of free space to force the opponent to move around the court. In this second, functional level, mobilizing decision-making resources takes priority. Level three involves the question of effectiveness: what do winners do? When a player enters into a technical level, he/she loses in functionality what he or she gains in technical effectiveness because he/she is preoccupied with performing well and moving correctly. It is only at level four, the contextual level, that the player is able to place technique in the context of a sequence of actions. At this level, the prevalence of tactics emerges again: the player is mobilized both technically and

functionally. Finally, the fifth level of expertise is characterized by an optimal mobilization of the player's structural, functional and technical resources through the creation of a style of play.

This theoretical classification of conative levels was verified by a video testing of the ten badminton specialists on the 2011 national committee in charge of recruiting physical education teachers. The test's rate of validity was satisfactory because it involved a margin of error of 5% for the committee members, whose ages, regions and training backgrounds were very different (Dieu, 2015b). Moreover, unlike the committee, which only had six minutes of viewing time, the present study provided the

opportunity for longer observation accompanied by recorded videos that allowed for one or more later viewings, to eliminate any videos that could be disputed. During the preliminary observations, if the macroscopic indicators were identified, the individual was classified at the corresponding level. During the tests, matches were set up such that, in each instance, the two players were at the same level.

By playing out the oppositions among the 40 subjects, 50 sets between players of equal strength were selected for further study. This provided us with a collection of 1,844 data points in terms of individual points won (or rallies) (Table 2).

Table 2. Number of Rallies Played per Conative Level (Study 2. Badminton)

Conative Levels	Sets	Males	Females	Rallies
Structural Level	10	4	6	384
Functional Level	10	10	0	370
Technical Level	10	6	4	356
Contextual Level	10	10	0	382
Expert Level	10	10	0	352

Because the matches were taped, we wanted to investigate the dynamics of the play point by point (or set pace) in order to see how each player, depending on the level he or she had attained, handled the switch between play and non-play, vis-à-vis both time and the quantity of movements.

Measuring the temporal structure (duration). Video recording of the matches enabled us to distinguish the duration of game and non-game time. The explanatory variable retained in this study is the ratio of periods with play to periods without play since from a dynamic perspective, the non-game periods have meaning only in relation to the game periods that precede them.

Measuring physical activity (intensity). Each participant wore an accelerometer while playing one set of badminton (21 points with a "tie breaker" and no overtime). The only instruction given was to play "like you're in a match"

while wearing an elastic belt to which a GT3X had been attached so that it would sit at the base of the back, at the level of the spine, and in contact with the skin. We used accelerometer technology (Craig, *et al.*, 2003; De Jonge, *et al.*, 2007) to quantify the amount of physical activity because numerous studies have confirmed the validity of this technology for measuring physical activity in comparison with standard approaches relying on indirect calorimetry (Chu, McManus, & Yu, 2007) or oxygen use (Vanhelst, *et al.*, 2010). Accelerometers allow subjects' physical activity to be evaluated on the basis of a mechanical measurement of movements (Chen & Bassett, 2005; Dieu, *et al.* 2015b; Silva, *et al.*, 2015); the acceleration recorded by this means accounted for the frequency, duration and intensity of the physical effort exerted by the body under study as it moved. The GT3X® accelerometry monitor (Pensacola, FL) measures physical activity on three axes

(X: vertical, Y: mediolateral, and Z: anteroposterior). Results are expressed in “counts.” The quantity of physical activity is calculated in terms of vector magnitude (VM), which is the square root of the sum of the squares of each axis (X, Y and Z) of data (counts).

The explanatory variable retained in this study is the ratio of the magnitude vector during periods of play to that during periods without play, since from a dynamic perspective the quantity of movement during the non-game periods is only meaningful in relation to the quantity of movement in the periods of play that precede them.

Protocol

At the beginning of the practice session in which measurements were taken, individuals who had previously been identified as being in the same conative level were informed that they could participate in a study about badminton (to avoid affecting the internal validity of the study, the role of the conative approach was not mentioned). Those who agreed to participate were given a document composed of a fact sheet and a consent form. The protocol was as follows: participants were to play one 21-point set of badminton without overtime or a half-time break, against a designated opponent, while wearing an accelerometry belt to which a GT3X Activity Monitor had been attached. They had also agreed to being filmed. To minimize the influence of the recording equipment as much as possible, the camcorder had been placed behind a court at the beginning of the session.

Statistical Analysis

The data were described in terms of mean; in terms of median (range) for quantitative variables; and in terms of (actual) percentage for qualitative variables. Given that most of the quantitative variables were discrete variables with asymmetrical distributions, nonparametric tests were performed. The rhythm of matches – their duration and intensity – was

compared in terms of conative level using the Kruskal-Wallis test. Post-hoc two-by-two comparisons were performed using the Mann-Whitney *U* test, with the Bonferroni correction applied in cases of multiple comparisons. The significance level of tests was set at 5%. The data were analyzed with SPSS Statistics (version 11.5) and SAS (version 9.4).

RESULTS

Study 1: Teaching Practices and Perceived Pleasure in Table Tennis

A particularly low perceived pleasure score.

The results show that the level of perceived pleasure experienced during table tennis cycles was relatively low. The mean “pleasure” score in middle school was 3.76, with a non-response rate of 12.7% (50 students did not answer this part of the questionnaire, which suggests that they did not participate in table tennis cycles in middle school). The mean “pleasure” score was 3.85 in high school, with a non-response rate of 33% (corresponding to 130 students who we suppose did not take part in table tennis cycles in high school).

If these results are compared with Deslaurier’s (2007) survey, which used the same tool to measure the perceived pleasure of students who had participated in different physical education activities, the mean scores of perceived pleasure we obtained seem particularly low. The mean score in Deslaurier was 4.30, ranging from a low mean of 3.5 for wrestling to a high mean of 5.5 for judo.

Interestingly, the students who participated in our study expressed an elevated level of perceived pleasure for physical education activities in general (mean: 5.31). No significant difference in this score was found for groups of different gender or university studies. Our results are consistent with the idea that the physical activity taught (in this case, table tennis) has an impact on the level of perceived pleasure (in this case, particularly low).

Effect of gender on perceived pleasure. Our results show that boys experienced significantly more perceived pleasure during table tennis cycles than girls did (mean = 4.02 for boys vs. mean = 3.5 for girls in middle school; mean = 4.12 for boys vs. mean = 3.58 for girls

in high school). Furthermore, the boys had a significantly lower “displeasure” score than girls’ for table tennis cycles in primary schools (mean = 3.03 vs. mean = 3.53). These results are presented in Table 3.

Table 3. Effect of Gender on the Level of Perceived Pleasure in Table Tennis (TT)

	Perceived pleasure score for TT in middle school	“Displeasure” score for TT in middle school	Perceived pleasure score for TT in high school	“Displeasure” score for TT in high school
Girls	3.53	3.53	3.58*	3.54
Boys	4.02**	3.03*	4.12**	3.12
Total (includes participants who did not indicate gender)	3.76	3.30	3.85	3.36

* Score is significantly low in relation to equal distribution (Chi-squared test, $p < .05$)

** Score is significantly high in relation to equal distribution (Chi-squared test, $p < .05$)

In conclusion, we note that while gender had no significant effect on the level of perceived pleasure during physical education classes, (mean = 5.04 for girls and mean = 5.72 for boys), it seems that the way table tennis is taught and perceived by students had a greater impact on the “displeasure” of girls.

The type of activity experienced vs. the type that was desired. The situations that are commonly experienced during the table tennis cycles in school are “*montante-descendante*” matches (77.2% of respondents indicated that they had frequently taken part in these by choosing “very often” or “often”), matches without a specific theme (69%) and practice with two students per table (66%). On the other hand, few participants stated that they had commonly experienced activities involving video (2.6%), special balls (2.5%), a ball basket (8.9%) or activities focused on learning to coach others (4.6%).

Once the situations are grouped into categories, the results show that competitive situations are definitely predominant (72.8% of

participant indicated that they experienced them regularly). Situations involving repetition and learning, as well as those including a dimension of social participation, were proposed very rarely: 21.3% of participants indicated that they had experienced situations involving repetition and learning, and 6.6% situations including a dimension of social participation. Situations in which specific teaching materials were used were almost non-existent, with 0.6% of respondents stating that they experienced them frequently and 78.4% indicating that they had never experienced them.

Moreover, a comparison of means (student’s *t*-test) shows that perceived pleasure was significantly greater when students indicated that they had often experienced situations involving learning and repeating specific moves or serving, as well as observation situations and themed matches.

Indeed, correlation analysis (Pearson coefficient) demonstrated a significant correlation between increasing levels of students’ reported

progress during the cycles and higher levels of perceived pleasure ($r = 0.43, p < .05$). Pearson's coefficient is even higher for female participants ($r = 0.50, p < .05$).

Finally, the analysis of participants' answers to questions about the types of activities they wish they had either experienced or avoided experiencing during the cycles reveals that the repetition of competitive situations with something at stake (i.e., a grade) and/or with time pressure (timed match) restricted the pleasure of learning and playing (participants indicated that they hated "stressful competition against other students", "the competitive spirit", "graded matches", "losing", and timed "*montante-descendant*" matches). Participants deplored situations that were "too monotonous" or "too repetitive"; they would have preferred for them to be more "varied", "original", "fun" and focused on "actual learning".

Our results thus reveal that there is a large gap between the activities that were actually experienced (situations of repetitive competition) and those that were desired (situations that would have been more varied and aimed at teaching, without pressure stemming from time limits and grading), and that this appears to have had an impact on the pleasure perceived during the activity.

Study 2: Teaching Practices and *In situ* Mobilization in Badminton

How the level influenced duration. The distribution of the relation between periods of play and periods without play, along with its components, is presented by levels in Table 4.

The play/non-play relation is significantly different for the five levels ($p < 0.0148$). Post-hoc two-by-two comparisons show that level 4 had a higher relation than levels 2 ($p = 0.027$) and 3 ($p = 0.018$).

Table 4. Influence of Conative Levels on the Duration of Points Played in Badminton (in Seconds)

	Levels					<i>p</i>
	Structural	Functional	Technical	Contextual	Expert	
Time of Play	6.4; 5.0 [1.0 - 24.0]	5.5; 5.0 [2.0 - 18.0]	5.7; 5.0 [1.0 - 19.0]	6.3; 5.0 [2.0 - 20.0]	9.4; 8.0 [1.0 - 42.0]	< 0.0001
Time of Non-Play	7.2; 7.0 [1.0 - 19.0]	6.6; 6.0 [1.0 - 17.0]	7.0; 7.0 [2.0 - 14.0]	6.7; 6.0 [2.0 - 20.0]	10.7; 9.5 [1.0 - 42.0]	< 0.0001
Play/Non-Play Relation	0.99; 0.80 [0.13 - 5.5]	0.92; 0.80 [0.20 - 7.0]	0.89; 0.80 [0.14 - 4.75]	1.06; 0.86 [0.13 - 3.17]	1.05; 0.80 [0.02 - 7.75]	< 0.0148

Data are presented as mean; median [range].

How the level influenced intensity. As Table 5 shows, the play/non-play VM relation varies significantly across the five levels ($p < 0.0001$). The play/non-play VM relation increases as the level of conative levels increases, with significant two-by-two differences at all levels except from level 2 to level 3. In particular, there is a sharp increase in the play/non-play

differential in moving from the contextual level (4) to that of expertise (5).

The data from this second study concerning the temporal and energetic structure of the alternation between periods of play and periods without play in badminton show that conative prevalence is linked to specific rhythms of play.

Table 5. Influence of Conative Levels on the Duration of Points Played in Badminton (in Counts)

	Levels					<i>p</i>
	Structural	Functional	Technical	Contextual	Expert	
Vector Magnitude (VM): Play	143.7; 143.4 [44.6 - 247.4]	166.9; 172.3 [53.7 - 247.9]	169.8; 177.4 [46.9 - 281.7]	223.9; 230.0 [68.2 - 366.4]	255.9; 264.2 [29.7 - 372.2]	< 0.0001
Vector Magnitude (VM): Non-Play	89.2; 85.3 [23.3 - 218.3]	91.4; 93.5 [33.1 - 184.5]	89.5; 88.8 [18.2 - 176.4]	83.7; 77.6 [22.0 - 208.2]	76.7; 55.1 [24.5 - 320.0]	< 0.0001
Play/Non-Play Relation	1.87; 1.62 [0.37 - 6.40]	2.13; 1.88 [0.42 - 6.83]	2.28; 1.90 [0.42 - 13.85]	3.21; 2.92 [0.67 - 9.94]	4.62; 4.53 [0.51 - 11.60]	< 0.0001

Data are presented as mean; median [range].

Normal vector magnitude (VM) is calculated as follows: $VM = \sqrt{x^2 + y^2 + z^2}$. It expresses the quantity of movement or expenditure of energy in counts per second.

These results seem to confirm our hypothesis: the rhythm of the set (the intensity and duration of the play/non-play sequences) changes depending on the player's experience and skill (higher conative levels).

At level 1, players take their time, relatively speaking, in the periods without play, yet they move around in a comparatively vigorous or agitated manner. At level 2, players continue to delay but they are less agitated during periods without play. This trend continues at level 3, in terms of both duration and intensity. However, at level 4, players raise the tempo while moving around much less, in relative terms, during the periods without play. Finally, at the ultimate expertise level, players take their time and move around much less when not playing.

DISCUSSION

Taken as a whole, our results reveal that the way in which racket sports are taught in schools involves symbolic violence because the activities and didactic tools provided by teachers are often at odds with the meaning students find in these sports. Our work shows that time-limited competition (in the form of "*montante-descendante*" matches) is frequently offered in classes. Now students not only state that they prefer activities that are more oriented towards "actual

learning", without worrying about grades and the pressure of the clock (study 1) — and we also note that students had perceived more pleasure during the latter sort of activities —, but we also found that the systematic and undifferentiated use of playing "by the clock" introduces a form of violence insofar as the rhythm of the match (and therefore its relation to time) varies for each student according to his or her conative level (study 2).

This fact suggests that the use of undifferentiated times of play would itself involve violence. This kind of teaching practice can be used with level 1 players (who have not yet incorporated the function of recuperation during periods without play in badminton), as long as an adequately long amount of time is allotted for this. Experiencing fatigue will actually lead such students to ask themselves, "How can I win without getting worn out?", a question that will facilitate their progress towards level 2, which consists in directing the shuttlecock. At level 2 (the functional level) of badminton, playing for points should take precedence over timed matches because players at this level have grasped the general usefulness of periods without play. This is the level at which players begin to pace themselves and to focus before serving. Timed matches require them to try to score points as quickly as possible so as not to lose the "race",

and this works against the logic which is starting to be developed. Finally, playing against the clock is “insane” once the contextual level has been attained, for when players need to manage the score in relation to time when it is close, it goes against their learning to incorporate recuperation periods into the dynamic of the game.

We thus see that many forms of teaching practices in racket sports are potentially violent, because they involve approaches that are out of step with the meaning that students attribute to their activities (whether we speak of activities they wished they could have done or of their *in situ* mobilization), which then produce a lack of enjoyment in these activities.

Although our conclusions lead us to call certain teaching strategies into question, it is nevertheless important to highlight several limitations of our work. First, our results come from two different studies, which involve two different racket sports: study 1 is concerned with students’ feelings about their experiences of table tennis in middle and high school, while study 2 concerns observations of badminton players. The two studies highlight the way in which certain teaching practices conflict with the structure of the students’ progress and lead us to adopt a critical view of such practices, beginning with the very common tradition of time-limited “*montante-descendante*” matches, which introduce *ipso facto* inequalities among students and a relative lack of mobilization. However, it is very important to stress that an individual can enjoy practicing a sport such as badminton, for example, without also having any interest in another one such as table tennis. It would therefore have been interesting to carry out these studies in the same sport.

CONCLUSION

Our work has sought to test the hypothesis that the standard forms of intervention by racket sports teachers and coaches involve a degree of symbolic violence, to the extent that

they do not take the *in situ* mobilization of students into account. The results of our two studies, despite their focus on two distinct racket sports (table tennis and badminton), support the hypothesis: they reveal that there is not only a mismatch between teaching practices and activities with high levels of pleasure perceived by students, but also that some of these practices conflict with the meaning students give to their experiences of the sports.

As they are currently taught, racket sports do not seem to be an ideal approach for increasing student engagement in physical education classes. On the contrary, it seems important to think about teaching strategies that would be more “responsible”, in the sense that they would mobilize and motivate students, bring them enjoyment and allow them to improve — in short, promote their well-being. “It is [thus] less a matter of introducing new practices into schools and more one of knowing how to read the preferences and motivations of students as they emerge, so that they are taken into account when school programs are drawn up” (Davaisse, 1998).

If some authors have shown that getting students moving helps to reduce misbehavior and disputes (Flavier *et al.*, 2002), our work suggests that moving and activities alone are not sufficient to reduce the level of “symbolic violence” in racket sports....

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