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Debates of Ideas and Technological Approach in Collective Sports

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***Abstract**: Using verbalization in the teaching of team sports may help meet various needs: to put together a common frame of reference; to acknowledge, conceptually wise, action rules and management rules for the organization of the game… Also, in this paper, we shall examine, with concepts of technological approach, examples of dialogues from debates-of-ideas recorded during a set of handball lessons with girls in a secondary school of Thala in Tunisia.*

***Key-words**: debates ; teaching ; tactics; handball; girls*

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The tactical intelligence of a player results in a thorough analysis of the logic of the different forms of games adopted and the choice of the form of evolution of the perceived configuration of the game. A careful appreciation of these different game configurations aim, in learning collective sports, to allow students to manage positions, paths and trajectories of the ball and players. Everything happens in emergency conditions, which requires an immediate decision, in order to bring the ball into the scoring area and score. From this point of view, in collective sport, we can identify two major teaching strategies while applying an educational approach aimed at understanding the game.

- Offer students the discovery of tactical and technical skills that apply in a specific situation. Such an option would be associated with an indirect pedagogical approach, combining both an object of study and a pupil-centered perspective.
- Propose to students the construction of appropriate personal tactical skills that apply in a variety of situations such an option, also under indirect teaching and would be associated with a constructivist approach so that the knowledge built by the student is the result the interaction between his cognitive activity and the reality of the game (Gréhaigne, Godbout & Bouthier 1999, Piaget, 1974).

In this second perspective, designing a lesson based on the constructivist and using the "scientific debate" is to ensure that knowledge and motor skills are no longer parachuted into the classroom based on the teacher's proposals. Only. It will be preferred to have a debate where students learn to formulate, defend and evolve together the data and answers to a problem posed by the practice. The debate at school is a pedagogical device implemented regularly in classrooms by teachers who wish to engage students in teaching that breaks with traditional pedagogy.

To this end, in EPS, we have proposed the notion of a debate of ideas (Gréhaigne, 2007), which is part of an innovative conception of the teaching / learning system at school, in which knowledge is developed. with the help of peers and the teacher.

Also in this article, after having quickly returned to the debate of ideas, we will analyze dialogues between pupils with different concepts of the technological approach (Mouchet, Amans-Passaga & Gréhaigne, 2010). The verbatim are from a handball cycle for young girls in high school in Thala (Tunisia).

I. The Debate Of Ideas

In a debate of ideas, the awareness of a situation in a group should make it possible to give the observed facts a coherent interpretation, on the one hand, and to anticipate future states of these elements, on the other hand. The terms mental image, representation, or schema, all refer to cerebral productions modeling the world around the player, part of a team.

According to Casetti, Lumbelli & Wolf (1981), the debate is an organized discussion, a confrontation of opinions about a particular object but which takes place in a prefixed frame. Thus, are partly predetermined the length of the debate, the duration, the number of participants and the purpose of the exchange. In addition, a debate usually involves a "moderator" responsible for ensuring that it runs smoothly. The debate is therefore both discussion by its descriptive and argumentative nature and the interview by its media nature. The debate would function as a sort of model of conversation, of idealized mirror, demonstrating or striving to demonstrate the effectiveness of a disciplined exchange and that a proper application of conversational rules can "spring the light". In this context, the debate of ideas constitutes a central piece of a constructivist conception of the learning of collective sports. It consists after a sequence played and after the feedback of information in a discussion to

change or not the action plan of the team by revisiting the planned strategy and analyzing the tactics applied. Elements regarding the use of the play area can also provide valuable insights.

II. Verbatim and Technological Approach.

The technological approach is the way to approach the facts of the practice by investigating them in their complexity in order to produce tools of reading, comprehension or transformation of the productions, thus making it possible to establish the registers of technicality of the field approached (Bouthier 2000, Bouthier and Durey 1994). As such, the artifacts developed assume a status of cognitive instrument facilitating, during their implementation, computation in natural language. In this sense, the technological approach by the artefacts that it allows to produce, develops the field of knowledge that it investigates: The rules of production of this knowledge open on perspectives of elaboration of corpus which by formalizing meaning to the practices (explicitation) and, when they are formalized, take on a scientific character to define an autonomous field (Barthès, 2000). The technological approach is therefore part of the field of technological research which, according to Staudenmaier (1988), is the study of scientific knowledge as tool disciplines and the study of tools through the products of technical projects carried out.

The technological researches on the intervention in Physical and Sports Activity are therefore interested in field questions by subjecting them to a scientific approach that can shed light on them. They are defined as studies on the conditions of transmission and / or appropriation of corporal techniques, in their socio-technical system of appearance. They have the following objectives: to increase knowledge of the intervention, to contribute to the constitution of knowledge on the formalization and the transformation of the corporal techniques, to contribute to the optimization of the procedures of training, formation and teaching.

In our case, the study deals with verbatim records that also come from recordings made during handball cycles (Zerai, 2011, 2017) using the reduced play modality, instructions and debates of ideas. Here, students were asked to organize themselves collectively and individually to observe, analyze and elaborate planned actions in order to beat an opposing team and then to evaluate and regulate this project. The debates of ideas were the common thread to analyze the evolution of the game. Nevertheless, the complexity of the qualities, the resources and the constraints for a player immersed in a collective sport environment led us to be careful when it comes to analyze the states of balance and imbalance in the game. For the players, it seems that we are confronted with operating registers in conditions related to the immediate environment rather than to clearly identifiable stable states. This notion of functioning register is based on the idea that in a complex situation, there are several responses or behaviors distinct to the player, which can constitute a satisfactory adaptive response to a defined threshold, in front of the same configuration of the game. There are also several distinct situations in which the same solution or attitude may constitute a satisfactory adaptive response to the same adaptation threshold (Gréhaigne, Billard & Laroche, 1999). Hence the interest of the study of the interlocutions of the players during debates of ideas to follow the evolution of tactical thinking and cognitive functioning registers.

Table I. Categories of analyzes selected for the technological approach and a general category

Rules and principles of action
Play in motion or not lose the ball
Rule of the Game Organization
Strategy, tactics adopted *
Group Management Rule
Network of competence, exhortation
Motor Skills and Driving Principles
Capture, transport, propel the balloon
Observe, perceive game features
Perceptual activity
Interjections, questions Elements of dialogue

For this first analysis based on the work of the technological and didactic approach of the collective sports, we propose that the "knowledge in action" rest on the identification of rules and principles of the effective actions, the rules of organization of the game, rules of group management, motor skills, observation. Finally, a category "general observations, interjections" was created in order to be able to classify the dialogue elements that did not fall into the categories belonging to the technological approach (Table I). It is clear that certain interlocutions could fall into two categories. According to the general meaning and the context of the dialogue, we have broken them down into the category that seemed the most explanatory.

III. Analysis and Interpretation.

A first observation of the verbatim has allowed us to classify them into six categories. The introduction of language, as a tool or instrument of thought, promotes an awareness and emergence of the rules of effective action. "The subject uses language to organize his own conduct" . Which is a first step for our research.

3. 1. Rules and Principle of Action

The rules of effective action or rule of action (Gréhaigne, 1989, Vergnaud, Halbwachs & Rouchier, 1978) define the conditions to be respected and the elements to be taken into account for the action to be effective. True knowledge about the game, their use isolated or articulated with other rules is an answer to a given problem. They represent a punctual truth and some rules, true temporarily, can be obstacles to progress at other times. As for them, the principles of effective actions, defined as a theoretical construction and an operative instrument, guide a certain number of actions of which they represent the source and make it possible to act on reality (Gréhaigne, 1989). They constitute a kind of macroscopic frame of reference allowing the teacher to isolate and classify the facts he / she is responsible for and to construct classes of a more general level of generality.

It represents 17% of the verbatim texts that focus on the rules of action that girls have developed during this learning cycle. In interactions, girls are aware that there are no miracle recipes to overcome difficulties.

Kods: We'll play next time on the sides and try to reverse the game on both sides.
Oumayma: Without forgetting to circulate the ball between us and to follow follows the advice and instructions that we learned.
Ilhem: I agree, but you have to increase the playing area and play all over the field: in the middle and on the sides.
Wafa: If we play this way we can win especially if we always stay close to each other, we can create free spaces and vary our tactics of play.

Lesson 1 / Group B

The dynamics of the group are constituted when all the girls mobilize adequate knowledge to a specific situation and always contextualized. In other situations, it will be other rules of action that they will have to use.

Kods: I think the most effective thing is to surprise the defenders when they exchange passes. We must deceive the opponents and reverse the game. And as you have noticed, the girls' move is a bit long.

Lesson 5 / Group B

It is also necessary to point out the objects of development: the knowledge, of course, but also the capacities of action, which implies that the motor and cognitive development at the learner can be acquired during a situation of game.

Amal: You have to be interested in both defense and attack.
Sahar: Okay, we'll defend each other in turns, the main thing is to let no defender get close to the cage and shoot.
Amal: First of all, you have to defend, to get the ball and attack.

Lesson 1 / Group A

So it's a good idea to think and "act" together: play on the move to bring the ball into the scoring area and score.

3. 2. The rules of the organization of the game.

They cover a number of data that relate to the logic of the activity, the size of the playing area, the distribution of players in the field, a distribution of roles and some simple precepts of organization that can enable strategy development. In football, because of the verticality of the target, it is necessary to occupy constantly the central axis of the ground. Game organization rules account for 36% of all verbatim and this is the most important category.

Nada: No, on the other hand, it is an organized game, which has its rules and its logic, if we do not respect them we can not progress and keep the victory.
Kods: We played together in attack and defense and we watched the girls of the opposing team, so we're on the right track.

Lesson 1 / Group B

This expanded viewpoint allows us to show how verbalisation records the traces of a cooperative action between girls in order to construct explanatory models of the game or an effective strategy to overcome a certain problem encountered. At this level, communication, the production of what one has already done is accompanied by other direct or indirect meanings aimed at the cognitive (planning) and / or motor (execution) plan. In addition, it has been noted that exchanges between girls induce more spontaneous and exploratory use of language. This fact underscores the fact that learning is essential, for the most part, between peers.

The study of these verbal interactions, between girls, poses for the description of the new difficulties, because most often the linguistic structures produced in conversational interaction do not coincide with the

problem in situation of game. Thus, the developments of complex ideas, the sequence of one girl to another and the exchanges with several peers give rise to new lines of thought that are no longer just the language game but also previous experiences in the confrontation itself.

Sahar: For you, try especially not to throw the ball stupid especially when you are close to the defenders. Sometimes it is better to calm the game than to engage.

Amal: We have to focus more next time, ask more for the ball and especially not lose it.

Lesson 5 / Group A

Rihem: Our dear guardian, you have to raise the ball quickly before the other girls reorganize their defense.

Nada: Play also before to lead the danger in their zone.

Lesson 5 / Group B

3. 3. The group management rules.

As in any group, in each team there is a distribution of tasks, conflicts or a tacit division of roles and functions, thus generating a network of skills. At the interface of the logic of the subject, the logic of the group and the internal logic of the sport considered, the player's place in this network of skills is often a reliable revelator of the reciprocal relationship between the player and the team. . Sometimes it can even take the form of a balance of power between two partners. By collectively exploring a problem, the players build connections between each other's ideas and the problems posed by the game sequences. All this is aimed at developing new and adapted responses. This third track that we have just identified represents 18% of the verbatim reports and highlights the socio-cognitive relations that exist between the girls during their discussion. It is in the relationships that girls maintain with each other, in the context of their interactions and according to the difficulties they face, that speech is constructed. Thus, the meanings are calculated, projected, reconstructed. This interlocutive activity refers to divergences with respect to the defined socio-cultural context in which learning takes place (play) thus determining the representations, motives and expectations of the individual.

Sahar: It's true that they are aggressive but it does not prevent if we organize a little we can score goals.

Wafa: And if you still continue to lead an individual game, you will surely lose.

Ilhem: We will concentrate better to avoid these mistakes and we will do everything to each time catch the ball and shoot in the goal.

Lesson 5 / Group A

3. 4. Motor skills and motor principles.

It is the motor skills built by a player allow it, in game, the exchange, transport and propulsion of the ball. It is not a question of the technique reduced to its most apparent components (the gestures), including vacuum worked outside the real conditions of the activity. These singular motor skills obey, nevertheless, to driving principles of operation. Verbatim reports of "motor skills and motor principles" account for 8% of all interlocutions. They are focused on the game actions when the technical part caused a performance concern. It is now a question of remedying this problem. Here, the communications necessarily lead the girls to pay more attention to the conditions of execution of the action. In addition, we found also a low variety in the vocabulary to qualify the action, a virtual absence of technical vocabulary. With regard to the conversational dynamics of technical learning, we find that the further we go in the cycle, the more they tend to decrease. This proves that girls are part of a collective web construction perspective and progress more tactically. Also playing a lot allows them to spontaneously supplement their motor resources.

Verbalization helps girls gradually build the representation of the correct movement, especially through the analysis of each attempt. Acquiring the ability to detect and correct errors is central to the learning process. At first, the perceptual trace is constructed from verbal information. Thereafter, during the motor stage (action, execution), the subject will self-regulate on the basis of the sensory data produced by the context.

Wafa: Regarding the shots, you have to shoot a little down and get closer to the cage to better aim.

Lesson 2 / Group A

Imen: And you call it a shot, you shoot softly as if you were stroking the ball. Wafa: You must have some strength at least in your arms.

Lesson 3 / Group A

3. 5. Observe perceive features of the game

This perceptive and decisional activity of the player is reflected in a relevant observation of the game and decisions adapted to the relationship of forces involved: make a long pass to a player demarcated in depth.These last two categories (12%) have a very close relationship with each other. Indeed, the perceptual and decisional activity is both autonomous but also limited by the existence of motor skills that allow the execution of the decision taken.To respond positively to a call from a partner's ball, it is necessary that the player who requests the ball is in the field of view of the passer but also that the receiver is at a safe distance from the passer.

There may also be a problem of understanding when the communicative intention of the girls is out of step with the realization. This is our fifth category that focuses on "observations of game features". Even if the

communicative intent is in agreement with the realization, the meaning may not be transparent to the receiver. ("But what, express yourself"). A distortion between the speaker's language production and the speaker's reception may give rise to a question. : (" Like what ? "). The questions are usually unpredictable because they can occur at any point during the interaction. This type of conversation aims to resolve momentary disagreements, often related to misunderstanding between girls. (" All alone ? "). These observations made by girls represent an important tool for acquiring knowledge.

The questions thus give rise, through corrective feedback, to a resolution of statements that seem problematic. In this case, the interaction is beneficial insofar as the girl exposed to corrective feedback can become aware of the discrepancies between her logic and the logic of others. On the other hand, the collaborative dimension depends to some extent on the motivational dimension: if we can assume that a task whose resolution requires real collaboration from the members of the group will engage them more intensively in the interaction and may give rise to more questions and more explanation. However, in verbalization, perception participates widely and effectively in another function that supports the previous one, it is the coordinating function. It is not only a question of making observations, it is also necessary to ensure that they are received, to evaluate the way the interlocutor understands and interprets them, and to share with him the meaning of the word. .

3. 6. General observations, interjections, questions

When analyzing language productions, we also noticed the existence of "general observations, interjections" made by girls. This phenomenon represents 9% of all verbatim. When an observation exists, it manifests itself in one way or another in the interactions. A statement in the class should not be a shocking thing for girls, but on the contrary something that can provide information on the dynamics of the group concerned

Rihem: *But at the beginning we missed goals maybe because we were rushed to increase the score.*

Lesson 10 / Group B

The findings can sometimes lead to conflict, and that says conflict eventually says negotiation, an issue that becomes interesting in the context of communication. This observation can be shown by the explanatory activity.

Oumayma: *We must not ignore that there are still some technical faults.*

Lesson 10 / Group B

Indeed, to make an observation can not be made without making understand to the other the reasons of its posture in the interaction, which can allow in the end to unblock the conversational situation. Based on these observations, the aim is to develop skills to identify implicitities and to better understand the variety of behaviors and skills at play. The girls then select supports that allow people to see each other on a common problem encountered. during the game

Rihem: *We won it's true, but we must not believe that they are going to keep their hands crossed, that's why we must improve our strategy.*

Kods: *Yes, we won, although we did not have many chances, but we enjoyed and scored our goals*. *Lesson 5 /*

Group B

As a result of the language interactions, the girls implement operations to solve the problem posed by the activity. If we refer to the cognitive point of view, these operations lead to cognitive level work of reactivation of knowledge allowing students to build understanding procedures in action.

Ilhem: The girls on the other team are watching us one by one and we can not move the ball freely or exchange it.

Lesson 1 / Group

A After this broad overview, allowing us to obtain information on the language elements used about the game and its tactics, it seems important to ensure that the data interpretation phase is actually built and validated. With this condition, this type of work can respond to the current challenges of education and bring effective tools and relevant answers to all teachers.

IV. Discussion

Figure 1 represents the distribution of categories according to their appearance in the verbatim of girls. These categories are distributed as follows: 36%, represents the highest percentage and refers to the rules of the organization of the game. This category consists of all the statements that are related to the organization of the game, the strategy and the logic of the activity. Then come with 18% the rules of management of the group. These highlight the cognitive and cultural relations, the conflicts that exist between girls during their discussions. For rules and principles of action, the score is 17%: this category as already mentioned focuses on the conditions to be respected and the elements to be taken into account for the action to be effective. The motor

skills and motor principles that are built and used by the players to play, exchange, transport and propel the ball represent 8% of all recorded utterances. The comments related to the observation and perception of the characteristics of the game are 12%. This category reflects relevant observations about the game to solve a problem. The last category, related to questions and interjections of girls, represents 9%, which indirectly informs the atmosphere and listening in the group.

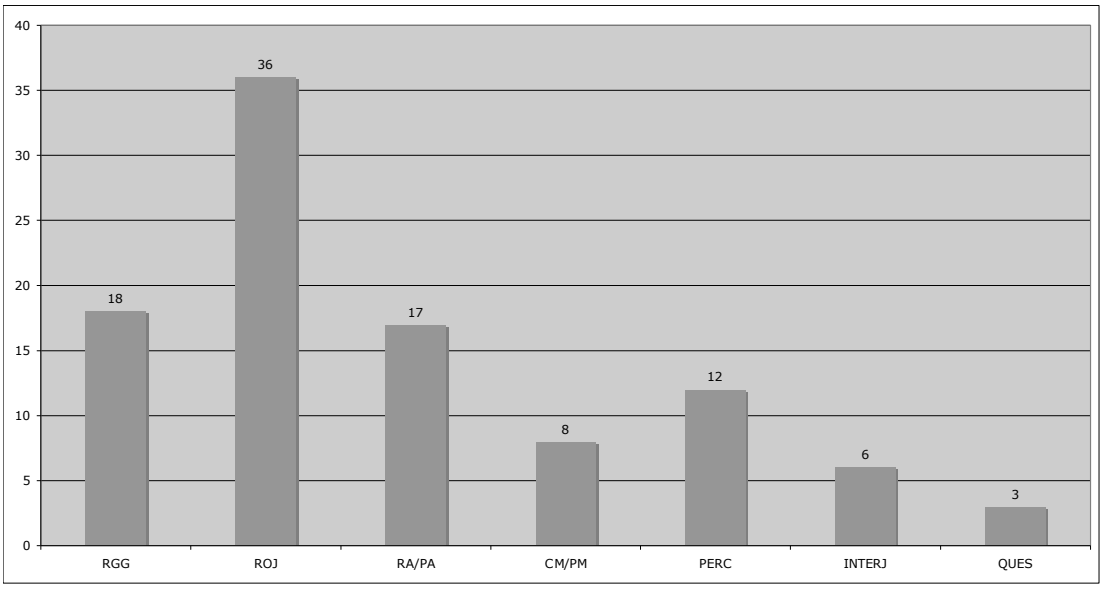

Fig 1. Breakdown of categories. (Percentage

In a second point, it appears that in physical education and sports, it is difficult to separate activity and learning, because any game action is always accompanied by a learning activity, more or less marked: in collective sport, we learn by doing. Conversely, game actions are needed to support the development of a learning activity. At school, in intentional learning situations, the purpose of the action is represented by the learning activity, where the game is the means and support of the activity building new knowledge and skills. There is a big difference in temporality between the game and a learning activity. The game activity ends with the end of the action, whether the action was successful or failed. But, the construction activity can extend well beyond the end of the action with verbalization. This is precisely why the analysis of one's own activity and that of others, after the fact, in other words reflective and retrospective analysis, is a remarkable instrument of learning. But what are the assumptions underlying the research presented here? (see Gréhaigne, Godbout & Bouthier, 2001).

- Learning is based on multiple interactions.

The development and maturation of an individual takes place through an adaptation to the game perceived as a system of constraints and resources. The analysis of this adaptation necessarily includes the interaction of a player on the game and the game on the players.

- Learning is based on a cognitive activity.

The use of cognitive processes, conscious or not, is essential for the construction of knowledge. In a learning activity, the learners, the actors of their formation, develop a self-regulation activity which consists in comparing the objective sought, the results obtained and finally to analyze the reasons for the failure or the success. This comparison allows an evolution of the planning, the selection of the actions and the requested motor resources.

- Learning involves building knowledge.

Faced with any situation, learners know and know how to do certain things and their development is also based on previous learning. This development involves a new coordination of knowledge blocks under the influence of internal or external constraints that force adjustments of the learner's activity.

- Learning is based on plasticity.

Plasticity represents the ability of a system to durably modify its own structure and the acquisition of new skills. In the face of unusual situations, plasticity allows the development of new resources which will lead to a better adaptation of the player to the situation of play. This point of view is fundamental for a functional conception of learning: a knowledge then consists in selecting, after identification of a signal, in the directory of available answers or plausible alternatives "a" good adaptive response and no longer "the" correct answer.

Nevertheless, we currently have little data on these learnings and the different paths that lead to them. The concept of a player's operating log in relation to the action rules implemented and the motor skills used undoubtedly constitute an interesting track to follow. The rules of action networked by the activity of the subject, used in a conscious and / or automatic way, constitute, undoubtedly, the base of strategic and tactical knowledge in collective sport.

V. Conclusion

The transition from understanding to succeeding is through an awareness of the game's properties and through a well-thought out reflection about actions taken during games. It appears that the analysis of verbalizations can provide information on the obstacles encountered by students in their effort to solve the problem encountered. Such information may be used by the teacher or may be shared among students during the discussion of appropriate means to better perform a task. Our studies (Zérai, 2011) demonstrate that verbalization can improve student learning collectively; these results support the idea that verbalization is a key process that can help develop self-regulated learning in children. The construction of knowledge comes on the one hand from the confrontation of representations on a subject coming from different interacting individuals. The increasing use of communication in practices in order to develop the cognitive (argue, categorize, verify ...) and social (respect the other, wait for the turn ...) skills of pupils raised the question of its didactic effectiveness. Concerning the collective sports, it is worth noting the close relation between verbalization and observation of the game, the latter offering a unique frame of reference for a "debate of ideas" in the classes of physical education and sport. It therefore seems fundamental to us to reinstate girls in an activity of real confrontation, of individual opposition and not to let them practice in simulacra trading games. The recognition of spaces, intervals, the reading of the game and the anticipation of choices are undoubtedly other elements to explore. The main didactic function of verbal interactions lies in the clarification of the purpose and sub-goals of the task, this is the main contribution of the analysis of the task "to the didactics of collective sports.

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