EDUMALSYS
Journal of Research in Education Management

e-ISSN : 2988-1188
p-ISSN : 2988-1196

Index : Dimensions, Scilit, Crossref, Garuda, Semantic, Google Scholar, Base, etc

https://doi.org/10.58578/edumalsys.v3i3.7748

Debate of Ideas and Proceduralization of Knowledge in Physical Education and Sport: A Powerful Vector for Pedagogical Innovation in STAPS

Radouane Aboufirass
Hassan II University of Casablanca, Morocco
aboufirassr@gmail.com

Article Info:

Submitted:	Revised:	Accepted:	Published:
Oct 17, 2025	Nov 10, 2025	Nov 22, 2025	Nov 27, 2025

Abstract

This study focuses on reflective learning in Physical Education and Sport (PE/Sport), alongside learning by action and observation, and examines how a debate of ideas (socio-cognitive conflict) within a group of students enables the construction of learning through the teacher's pedagogical mediation. By verbalizing the problems encountered during learning situations and proceduralizing knowledge, students become able to learn autonomously and responsibly through self-management. This expected outcome is consistent with the overarching aims of competency-based pedagogy and the pedagogical orientations of the National Charter for Education and Training, which seek to train citizens capable of developing analytical and reflective skills and the ability to adapt. Control groups were established to allow comparison of outcomes, and at the end of the experiment, students in the experimental groups showed greater progress than those in the control groups. These results confirm the research hypothesis that learning constructed by students themselves through a collective project based on the verbalization of actions and problem-solving is more effective, both for students and for teachers.

Edumalsys is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License

Keywords: Debate of Ideas; Verbalization; Socio-Cognitive Conflict; Proceduralization; Metacognition

INTRODUCTION

The student learning process has become a major concern in modern learning theories. Each has attempted to explain this complex and often elusive phenomenon.

Based on the work of Jean Piaget (1993), all knowledge is the result of individual learning experiences, invoking the concepts of accommodation and assimilation. According to this model, the acquisition of knowledge involves the transformation of information received by the learner through experience and prior knowledge.

To achieve a higher state of understanding, learners must challenge and reorganize their initial conceptions by integrating new data. This effort involves a phase of destabilization, necessary for recognizing the inadequacy of their initial representations.

The teacher's role is to create a cognitive conflict, generated by a contradiction between the learner's anticipation (based on their initial conception) and the observed reality. In summary, this represents an internal cognitive conflict between knowledge and the learner in a learning situation.

Physical Education and Sport (PE/Sport) should convey three main types of knowledge:

- Principles of action,
- Principles of management and regulation,
- Methodological principles related to "learning to learn."

However, in practice, teachers often limit their pedagogical intervention to contents focused primarily on principles of action, restricting the student's activity to reproduction and execution of given tasks.

We believe that engaging students in a reflective dynamic during the elaboration of motor actions and developing awareness of action rules through debate of ideas and verbalization is highly relevant to the effectiveness of learning.

This reflective practice helps in building knowledge, developing attitudes, and acquiring methodological competencies. Teaching PE/Sport should therefore not only involve teaching students technical gestures and tactical patterns, but also enable them to

engage in a process of reflective practice, analyzing the relationship between principles, rules, and planned actions.

The goal of our research is to verify to what extent debate of ideas, through verbalization and proceduralization of knowledge, can contribute to the effectiveness of the teaching-learning process.

Theoretical Framework

We have chosen interaction as the main focus of our study—a dynamic and polysemous concept.

According to Stengers (1987), interaction represents a nomadic concept. Its use is extremely frequent in the field of human and social sciences, where it appears to be an essential characteristic of teaching.

Altet (1994) defines teaching as "an interpersonal and intentional interactive process that uses verbal and non-verbal interactions to achieve a learning objective."

The concept of interaction forms a foundation for several major learning theories:

- Vygotsky's socio-historical-cultural theory,
- Piaget's theory of genetic equilibration,
- Bandura's socio-cognitive theory.

Croizier (1995) describes the socio-cognitive conflict as the transition from the interpersonal to the intrapersonal level—the ability to introduce an internal conflict based on an external one.

According to Famose (1991), although motor learning processes are essentially cognitive in nature, they often operate beyond the learner's conscious control, yet they fundamentally contribute to motor learning.

Similarly, Delignières (1992), Famose (1991), Fleurance (1991), and Temprado (1994) recognize that a certain degree of awareness is necessary for motor learning, which evolves rapidly toward an infra-conscious cognitive process. In the initial phase of learning, students rely primarily on their own conceptions.

METHODOLOGY

Methodological Approach

This experimentation falls within an empirical research framework. The proposed protocol consisted of organizing an eight-session teaching cycle focused on the Triple Jump.

The situations proposed were based on fundamental jumping exercises performed on a track.

Study Population

The total sample included 18 students (14 girls and 4 boys), aged 17 to 20, from a second-year Economics Baccalaureate class. None had previously practiced the triple jump. Subjects were selected randomly.

Measurement Instrument

Our study analyzed quantitative data to evaluate student achievements (through work sequence analysis) and verify the hypothesis that socio-cognitive conflict improves the efficiency of motor actions during complex learning situations (the jumping task).

Data were analyzed using the statistical software SPSS Statistics version 17.0.

Differences in performance between the pre-debate and post-debate phases were assessed using the Paired Samples T-Test, with "Before" and "After" as grouping criteria.

RESULTS AND DISCUSSION

The analysis conducted using SPSS Statistics 17.0 revealed the following:

- Initial Evaluation: Designed to identify difficulties, capacities, and available resources.
- Learning Situations: Focused on acquiring motor behaviors.
- Final Evaluation (Reference Situation): "Perform a regulatory jump after a run-up distance allowing optimal speed, from a take-off board located at 6 m for boys and 4 m for girls."

Based on the results obtained during the triple jump experiment, engaging students in debate of ideas sessions—to verbalize difficulties encountered in achieving efficient motor actions—enabled them to identify key mechanisms leading to success.

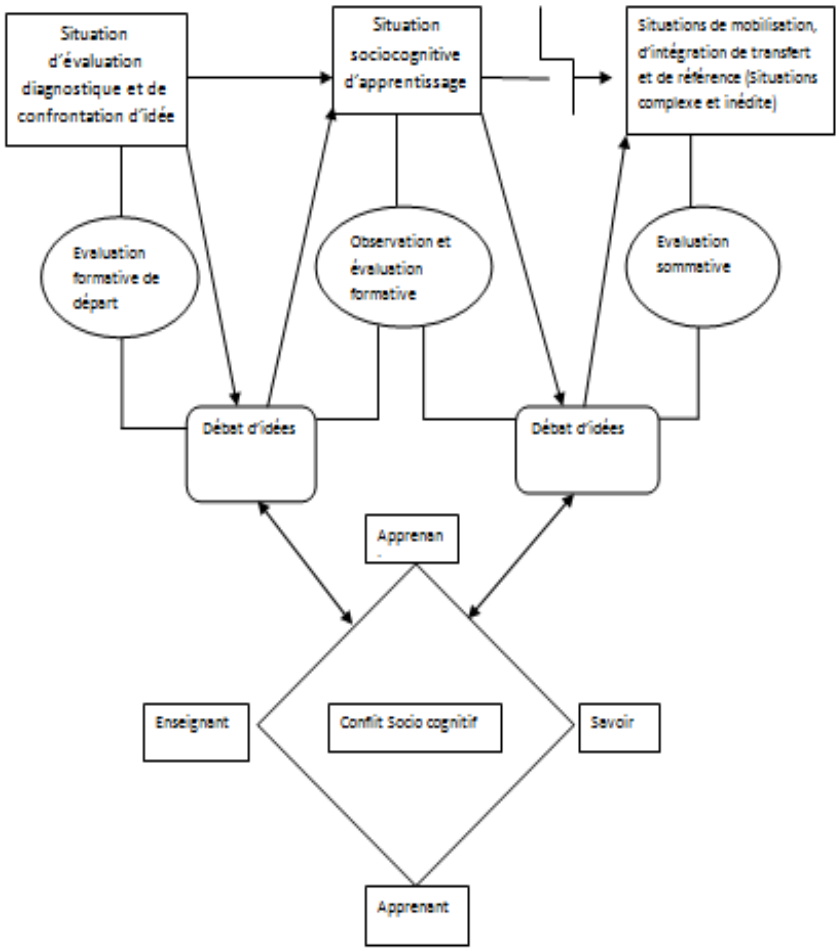
During these verbalization sessions, students developed action rules that guided them toward expected performance goals. The learning rate in the experimental group was significantly higher than in the control group, as demonstrated by the evolution of performance parameters.

Moreover, the learning achieved during these debate sessions was well stabilized, allowing students to reinvest their prior knowledge in subsequent sessions. These findings confirm the initial research hypotheses.

Following Lacoste (1993), we distinguish between studies treating interaction as a resource and those treating it as a theme. From our observations, we proposed a model of the socio-cognitive conflict process among young adult learners, based on our research results.

In the constructivist perspective of learning, and following Gréhaigne and Godbout (1995), we hypothesize that students learn better after identifying the mechanisms that lead to success.

Meta-Model for the Modeling of the Socio-Cognitive Conflict Process in Young Adult Learners



CONCLUSION

This study has two main objectives:

1. To promote a paradigm shift in conceptions of learning related to the triple jump;
2. To propose a teaching model that emphasizes reflective practice among students.

The learner is no longer a passive recipient of knowledge, but an active participant contributing fully to the teaching-learning process.

Our approach begins with a learning situation in which students confront and discuss their viewpoints—with or without teacher presence—to construct effective action rules for overcoming obstacles.

The triple jump was used as a support activity enabling students to engage in collective knowledge construction with peers, becoming co-authors of meaning in the elaboration of motor actions.

This construction occurs through appropriation, validation, and discussion of meanings generated during the action sequence.

Following Brousseau (1990) and Sarrazin (1995), the notions of didactic contract (reciprocal obligations between teacher and student) and devolution (transfer of responsibility for learning to the student) highlight the complementarity of social roles.

Our findings underline the importance of verbalization in the teaching-learning process. It generates inter-individual conflicts overlapped by intra-individual conflicts, giving discussions a dialogical value that enhances reflective motor behavior.

Given the importance of debate of ideas in co-constructing knowledge and competencies, it is recommended to integrate such debates into PE/Sport teaching sessions. Teachers should dedicate time for students to interact freely.

Student-to-student discussions conducted outside teacher control foster spontaneity and autonomy. Therefore, teachers should learn to step back at times, allowing students to freely confirm or refute ideas.

Extending learning cycles to twenty sessions would make the direct effects of debate of ideas on student learning more significant.

REFERENCES

Altet, M. (1994). Comment interagissent enseignant et élèves en classe? *Revue française de pédagogie*.

Caragati, F., & Mugny, G. (1985). La théorie du conflit socio-cognitif. In G. Mugny (Ed.), *Psychologie sociale du développement cognitif*. Peter Lang.

Cottinet, C., & Harmand, M. (2003). Verbaliser pour apprendre, une activité centrale en EPS. *Les cahiers EPS de l'académie de Nantes*, (29).

Delignières, D. (1991). Apprentissage moteur et verbalisation. *Échanges & controverses*.

Deriaz, D., Poussin, B., & Gréhaigne, J.-F. (1998). Le débat d'idée. *Revue E.P.S.*, *273*, 80–82.

Doise, W. (1991). Interactions sociales et développement des instruments cognitifs chez les enfants. In H. Malewska-Peyre & P. Tap (Eds.), *La socialisation* (pp. 21–48). PUF.

Doise, W., & Mugny, G. (1981). *Le développement social de l'intelligence*. InterÉditions.

Gréhaigne, J.-F. (1992). *L'organisation du jeu en football*. Actio.

Gréhaigne, J.-F. (2003). Vers une didactique constructiviste en sport collectif. In C. Amade-Escot (Ed.), *Didactique de l'éducation physique: État des recherches*. Revue EPS.

Gréhaigne, J.-F. (Ed.). (2007). *Configuration du jeu, débat d'idées et apprentissage des sports collectifs*. Presses de l'université de Franche-Comté.

Gréhaigne, J.-F., Billard, M., & Laroche, J.-Y. (1999). *L'enseignement des sports collectifs à l'école*.

Gréhaigne, J.-F., & Godbout, P. (1998). Observation, critical thinking and transformation: Three key elements for a constructivist perspective of the learning process in team sport. In R. Feingold, C. Roger Rees, G. T. Barette, L. Fiorentino, S. Virgilio, & E. Kowalski (Eds.), *Education for life: Proceedings of the AIESEP World Sport Science Congress*. Adelphi University Press.

Mugny, G., Doise, W., & Perret-Clermont, A.-N. (1975). Social interactions and the development of cognitive operations. *European Journal of Social Psychology*.

Nachon, M. (2004). *Interaction en éducation physique et sportive: Le cas du basket-ball. Approche des compétences sémiolangagières et construction de savoirs* (Doctoral dissertation). Université de Franche-Comté.

Perrenoud, P. (2001). *Développer la pratique réflexive dans le métier d'enseignant: Professionnalisation et raison pédagogique*. ESF.

Piaget, J. (1964). *Six études de psychologie*. Gonthier.

Piaget, J., et al. (1993). *Psychogenèse et histoire des sciences*. PUF.

Stengers, I. (1987). *D'une science à l'autre: Des concepts nomades*.

Trognon, A. (1991). L'interaction en général: Sujet, groupe, cognition, représentation. *Connexion*, *57*, 9–25.