Comparative Study of Students' Engagement and Cooperation in Two Contrasting Institutions

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ABSTRACT

This article aims to analyze and to compare the modalities of student engagement in school teaching gymnastics in two contrasting institutions in Tunisia. We study student engagement in the theoretical framework of the ecology of physical education (Tousignant, 1982).
The data comes from video recording and ethnographical observations of two units of gymnastics carried out by two teachers. The study is conducted using a macroscopic analysis of cooperative behaviors of students during three sessions of each unit of teaching.
Through the comparison of contrasting forms of engagement of students (strong vs. weak, girls vs. boys) in a public institution and in a private institution, the results reveal some generic ways in which students behave.

Key words: *Comparative study, Physical education, Classroom ecology, Engagement, Contrasting institutions.*

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1. INTRODUCTION

Our research is part of a didactic framework for analyzing practices in ordinary classes. It attempts to understand then to compare the modalities of engagement of students in the teaching-learning process in physical education. To understand the functioning of the classroom, the study mobilizes the theoretical framework of classroom ecology as a frame of reference. It aims to describe the cooperation of students.
We present the problematic and research questions in the first part of the article. In the second part we present the theoretical framework of the research. The methods used are detailed in the third part. The fourth and final part of the article presents the results in two stages. First, we develop the comparison between the two institutions by pointing out recurrent differences in established reports. Then, we present some elements for discussion. The conclusion is a reflection on the possible connection between the classroom ecology, the didactic joint action, and the productive disciplinary engagement.

2. PROBLEMATIC

Previous research relating to student engagement in physical education has developed either within the framework of research on motor learning, or within the framework of the science of

intervention highlights the importance of student engagement in the teaching / learning process. This past research points, therefore, to the need to better understand the different modalities of student engagement in physical education classes.

However, in the classroom, teachers frequently observe students who do not progress in physical education. In this connection, Tunisian physical education teachers express the difficulties they have in getting transformations in students' behavior. They describe their low current participation and point to the differences in the duration of engagement between students according to their skill levels, their motivation, their interests, etc. These findings, which have been reported in the literature (Carlier, 2004; Doyle, 1986a) show that the students' activity time can be influenced by the students themselves. These studies highlight that students do not all engage in the same way in the proposed tasks. Researchers in didactics, for their part, showed that according to their school position (high, medium, or low) the students are requested by their teacher in a differential way (Schubauer-Leoni, 1996; Elandoulsi, 2011). In physical education, the "strong" students are considered to be more active than 'weak' students.

So, with regard to the recurring difficulties described by the Tunisian sport and physical education teachers, our research problem is to describe student engagement in gymnastics lessons. Through a comparison of student engagement in a private institution and in a public institution, we shall try to answer the following questions:

- In two contrasting schools (public vs. private), how do students participate in class? What are the differences?
- Considering the different school positions which are attributed to them (strong vs. weak), do students participate in the same way in the tasks proposed by the teacher?

3. THEORETICAL REGISTRATION

The classroom ecology paradigm is found mainly in North American studies. In the 1980s, this current of research allowed a better understanding of the activity of the class in all its complexity. This paradigm finds its origins in the postulate of Doyle (1986a) who stipulated that the classroom environment determines the actions of the teacher.

The author leans on the work of Kounin (1970) which showed that the efficacy of teachers in the management of the class depends, in fact, on their ability to control its complexity. So, Doyle shows that requests related to the classroom environment are multidimensional, since they contain many events and processes that are not interconnected (Doyle, 1979, 1986b).

The author insists that because of these requests, the teachers are always looking for strategies to reduce the complexity of the classroom environment. This interest in the dynamics of the class is defined as ecological in reference to the ecological psychology of Barker (1968).

The ecological paradigm is to study the relationship between the requests of the environment, that is to say, classroom situations, and the way the individuals answer them. According to this model, the researcher tries to enter more thoroughly into the world of the classroom in order to understand the sense and the meanings that actors (teachers and students) give to it, to perform a detailed description of its functioning.

Based on naturalistic and anthropological approaches (Doyle, 1979-1986a; Hastie and Siedentop, 1999) the aim of the ecological approach is to provide a coherent description of the functioning of the class. The proponents of this paradigm stipulate that the data collected by ethnographic observation allows the formation of new hypotheses, and the discovery of variables, patterns or relationships that may be important for the life of the class.

The ecological model was applied for the first time, to the physical education by Tousignant and

Siedentop (1983). The ecology of physical education is a current of research which has been the subject of many studies in our discipline (Siedentop, 1994; Musard, Loquet and Carlier, 2010). The first research concerning the question of student participation in physical education was developed by Tousignant (1982).

It was a question of reporting the students' engagement by considering the context of pedagogical action according to several dimensions: the institution, the classroom climate, and finally the types of proposed tasks. To understand the dynamics of the ecological balance of the physical education class, the author was interested in the manner in which the students participated in terms of cooperation.

Tousignant (1985) considers that the cooperation of students in the learning tasks assigned to them is a precondition for learning these same tasks. In a qualitative study, where she describes some aspects of the establishment of the cooperation between teacher and students, Tousignant identifies four categories of student behavior that follow when students do the tasks required of them. These categories, revealing the degree of cooperation, are:

- The behaviors of application: the author presumes that when students do the task, as dictated by the teacher, they are qualified as "applied". Students are attentive, they participate in the management of the activity and they engage in the learning task. These behaviors are associated with complete cooperation.
- The behaviors of tasks transformations: the author highlighted that when students are confronted with a task that does not match their skill level, they usually make changes to this task. They can change the rules of a game and / or improvise new ways to do exercise or even change the nature of the task. These behaviors are associated with circumstantial cooperation.
- The evasive behaviors: the author specifies that these behaviors correspond to those of students who hide their non-cooperation in just dodging the tasks so that the teacher thinks they have realized the requested task. These behaviors, which do not really disrupt the progress of the class, can relieve learning difficulties of some students. They are indicators of disguised non-cooperation.
- The deviant behaviors: the author describes deviant behavior as when a student refuses completely to cooperate. This category includes classical deviance such as talking or fighting with a friend during the session, and also modifying a task in an unacceptable way in a given context. These behaviors, which are incompatible with the objectives fixed by the teacher, obviously disrupt the progress of the class and inhibit learning. They are connected to a deliberate non-cooperation.

The theoretical framework of the model of the classroom ecology of physical education is extremely relevant for establishing the degree of cooperation of students in the different systems of tasks that the teacher offers.

4. METHODS

We are interested in what can be called "regular teaching" (Schubauer-Leoni, 2008) in two contrasting institutions, public and private. Our research reports on cases studies which aimed to observe the ways in which students engage in the teaching / learning process. As we used an ethnographic approach, our search is undertaken in a descriptive and comparative approach.

4.1. Selection of institutions and institutional characteristics

Our choice concerned two institutions in two different districts:

- The high school "Ibn Abi Dhief", a public institution in a peripheral urban area, is located in the district of Manouba. This institution welcomes students from different social classes, some belonging to the middle class, others being children from the agricultural middle class. The high school is characterized by a diversity of students.
- The high school "International School of Carthage" (ISC): private institution in a privileged environment within the district of Tunis. This district is the administrative center of the capital of Tunisia, and the political and economic capital of the country. It therefore constitutes the densest urban center (100%) with students recruited from affluent or very affluent circles, from the families of executives (President of the Republic, ministers, senators, etc.). This high school is accredited by the French Ministry of National Education and delivers French-based education programs.

4.2. Characteristics of the observed sessions

For each institution, we selected three sessions with three different objectives. Sessions have variability in students' number, in duration and in number of tasks. The variability of these factors is shown in the table below:

Table1. Context of the observed sessions

		Students present	Session duration	Sessions' objectives	Number of tasks	Task duration
Public institution	Session 1	17 : 10 girls 7 boys	50'	" Perform a correct cartwheel… the improvement and the connection of the cartwheel with the first part of the sequence of movements"	5	29' : 25"
	Session 2	13 : 9 girls 4 boys	72'	" Improvement of the technical elements already taught from the beginning of the year "	6	63'
	Session 3	12 : 8 girls 4 boys	52'	" Improvement and review of the round off and the handstand backward roll "	7	42'
Private institution	Session 1	9	60' :15"	"The goal ... is the consolidation of gains / I am going to work the element /… it is 8-3 C / and this is the roll backward piked / so I'll try to make progress."	7	47' : 25"
	Session 2	11	45' :53"	"This is a review of the forward and backward roll"	7	29': 75"
	Session 3	14	59' :30"	"It's a finalization ... we will carry out a small review of all rolls and jumps and then we will do an individual update for each student for the final step.	10	50' : 25"

4.3. Selection of teachers, and teachers' characteristics

We observed two teachers in institutions located in two different suburbs of Tunis: Najoua was the teacher in the public institution and Sonia was in the private institution. The choice of Najoua was because her timetable coincided perfectly with that of the researcher. Sonia was chosen because she was the only teacher in her institution who did not show resistance to our presence and agreed to be observed.

Both teachers had more than twenty years of service (26 and 22), they had the same educational background, and had a master's degree in sport science. Neither were experts in gymnastics and had no experience in the activity other than that of their initial training.

4.4. Selection of students, and students' characteristics

The selection of students was made on the basis of two criteria: first, it depended on the choice of the teacher for students considered strong or weak and their presence throughout the unit. It was a question of agreeing with both teachers of the students whom it would be appropriate to observe, in order to have a "sample" considered representative of various school levels.

To maintain the ecological character of our observations, we also wanted to see girls and boys in the public institution, since the teaching of physical education and sport in Tunisia is carried out in mixed classes.

For the private institution and although education in France in physical education is in mixed classes, we selected four girls, because according to the French baccalaureate programs, students choose three physical activities to be evaluated. In this high school, only girls chose the physical activity of gymnastics.

Finally, the observations were conducted in different branches of final year of high school: a branch of mathematics in the public institution and a branch of scientific, economic and social in the private institution. In each class, we selected four students, girls or boys of different levels of ability and who presented the characteristics which are summarized in the following table:

Table 2. Characteristics of students selected for the research

	Name	Code	Gender	Skill level	Parents' socio-economic level	
					Mother	Father
Public institution	Myriam	F13	Girl	Strong	Teacher	Official in a bank
	Rami	G3	Boy	Strong	Without a profession	Head of department at a Ministry
	Marouan	g10	Boy	Weak	Schoolteacher	Official in the post
	Rim	f9	Girl	Weak	Without a profession	Teacher
Private institution	Myriam	F14	Girl	Strong	Engineer	Accounting Officer
	Farah	F21	Girl	Strong	Teacher	University professor
	Amani	f2	Girl	Weak	Without a profession	Bank manager
	Sarra	f7	Girl	Weak	Official in a travel agency	Architect

4.5. Data Collection

We collected data relative to the student activity as well as to that of the two teachers in ordinary classes. For each institution, we filmed three consecutive sessions related to learning of a unit of gymnastics, in connection with the preparation of baccalaureate exams in physical education and sports as Tunisian programs for the public school or French programs for the private school. We used a camera with an integrated microphone. The camera was set up with a wide field of view, which allowed us to record all students in the part of the gymnasium where the sessions took place.

We also took notes of the behavior of students and teachers. For the three filmed sessions of each two gymnastic units, we noted the planning of the teachers to learn about the objects taught, and we also took notes to note the modes of organization, and the types and degree of difficulty of the situations the students faced. We particularly noted our impressions of the class and / or the teachers, the elements of the taught content, of unexpected incidents and the general functioning of the class.

4.6. Analysis and Data Processing

The data analysis reflects the degree of cooperation of "strong" and “weak” students according to the behavior defined by Tousignant (1985): application behavior; task transformation behavior; evasive behavior; deviant behavior. For each institution and for each student observed, we first analyzed the students’ behavior in all tasks. This analysis allows us to gain a global understanding of the degree of student engagement and an estimate of the frequency of different behaviors during the session.
For each institution, the data processing was done according to a “behavioral chronic” interested in the engagement of selected students. The chronic presents, on a double entry table, the temporal dimensions of student engagement. Horizontally, the table presents the various successive tasks of the session by indicating for each of them the global time dedicated to this task by the teacher. On the vertical axis is noted the behavior concerned with student engagement using a sequential method of observation every fifteen seconds. The abbreviations of students’ behaviors are listed vertically as follows: AB for application behavior; TTB for task transformation behavior; EB for evasive behavior; and DB for deviant behavior.

5. RESULTS

We take the analyses which we made in each institution and put them in relation to each other to conduct a comparative analysis of student engagement.
Our ambition is to highlight the recurring and regular features of the degrees of cooperation (the differences and the similarities) between the various school levels (strong vs. weak) and between institutions (public vs. private).
Insofar that the approach of the research develops a descriptive and interpretative point of view from this case study, we matches the quantitative data (averages of the durations of the various behavior) that we try to interpret qualitatively in the light of what happened during the sessions.
The tables below summarize the average behavior of the strong and weak students in the three observed sessions at both institutions.

Table 3. Summary of quantitative data in public institution

		AB %	TTB %	EB %	DB %
Strong students	F13	56.56	7.19	20.76	15.49
	G3	40.73	21.75	23	14.53
	Averages	**48.64**	**14.47**	**21.88**	**15.01**
Weak students	g10	42.32	16.32	15.97	25.38
	f9	42.47	10.75	30.14	16.62
	Averages	**42.39**	**13.53**	**23.05**	**21**
Averages		**45.52**	**14**	**22.47**	**18**

Table 4. Summary of quantitative data in private institution

		AB %	TTB %	EB %	DB %
Strong students	F14	59.5	5.47	25.20	9.82
	F21	68.59	6.06	17.64	7.70
	Averages	**64.04**	**5.76**	**21.42**	**8.76**
Weak students	f2	66.07	3.34	18.50	12.08
	f7	28.32	4.32	28.65	38.71
	Averages	**47.19**	**3.83**	**23.57**	**25.39**
Averages		**55.62**	**4.80**	**22.50**	**17.08**

If we compare the engagement of the observed students at both institutions, we notice:
- In both institutions the students, whatever their school level, present times of application superior to the times of evasive, task transformation, or deviance behaviors. In a general way the students of these two final years of high school develop behavior reflecting the predominance of complete cooperation.
- However, the durations of application are more important in the private institution (around 55% of the time vs. 45% of the time in the public institution). We may hypothesize, following the work on the students' cooperation in physical education and sports, that the composition of the group class (girls in small numbers in the private institution) may explain this difference. Moreover, the research showed that teaching by workshops (public school) could create conditions for less need for supervision, another factor that might reduce the application time (Siedentop, 1994).
- With regard to the non-cooperation behavior, we noted, in the public institution, the special case of a weak student f9, who demonstrated three important instances of evasive behavior at the session. The same happened in the private institution, with student f7, weak students also, who presents an important duration of evasive behaviors and deviant behaviors reducing, by half, the duration of behaviors of application for this particular student compared with the other students.
- In both institutions, we noticed that the application behavior of students of high academic level exceeded that of students of low academic level.
- On the other hand, all students, whatever their academic level, transformed tasks. However, we noted that the average duration of behaviors of transformations' tasks was more important (14%) in the public institution while it was only around 5% in the private institution. This observation reinforces our interpretation of a lesser autonomy given to students in private institutions.
- Finally, let us underline that in both institutions, behaviors of transformations' tasks were slightly more frequent for students of high academic level than for students of low academic level.

6. DISCUSSION

It emerges from these results that student engagement in learning tasks depends on the form of organization of the class, on its composition, and on the ability of teachers to regulate the motor production of their students.

6.1. Forms of organization of the class and student engagement.

In the public institution, the teacher proposed gymnastics sessions with different students groups working in parallel on different tasks. There were few situations where the whole class worked together. This kind of organization is a form of differentiated teaching (Perrenoud, 1997).

At the private institution, on the contrary, the observation showed that all sessions took place without differentiation of tasks. Having the same content, students received magisterial and frontal teaching (Altet, Bressoux, Bru, Leconte and Lambert, 1996). The organization of the classroom in equal groups is to differentiate learning tasks to improve student achievement. The teacher sets up various and diverse work areas, adapted to the needs of each student. However, this mode of organization raises the problem of the teacher's availability for each group of students. A particularity of this mode of organization is that teachers are not available during the whole session for all groups. The video recordings in the public institution show that overall, Najoua (teacher) is more available as the groups are of low skill level, marking a desire to make a success of these students. As a result, the strongest groups of students, girls or boys, often work in autonomy. The organization of the class as a single group allows a maximum of information to be delivered to a maximum of students in a synchronous way. In this form of organization, all students are considered as equal. The teaching is based on the implementation by the teacher of standard activities. In this type of organization, the teacher assumes the responsibility for learning content which is the same for all. Each teacher leads his class with regard to a reference group (Crahay, 1989) and teaching is adapted to each class segment, the other segments being marginalized. The course is generally carried out for a group of "average" or "median" students. The faster students, usually those with a high position (that finish before others) and the slowest, students with a low position (who are slow to learn) are penalized.

Both classroom forms of organization, defined above, have a different relationship with the diversification of activities proposed to students likely to determine the student engagement. The organization of the class in level groups, as opposed to a whole class organization helps to diversify the time allocated to the task and to respect the rhythm of each student while avoiding penalizing those who are slower.

This mode of organization also allows teachers to vary the progress of the activities: student moves in the gymnasium in the form of workshops, with multiple teaching aid and on varied apparatus. This method of class organization also allows students to vary the grouping mode. The teacher groups students according to their needs; she creates what Perrenoud (1997) calls a "positive discrimination" that promotes the creation of student groups favorable to exchanges, to cooperation and to the emergence of social cognitive conflicts between them.

6.2. Coeducation and student engagement.

We remind readers that our observations related to coeducational student in the public institution and to female student in the private institution. Our interpretive hypothesis is that this coeducation could, first explain variations in engagement of girls and boys at the public institution and also variations between girls at both institutions for different school positions (strong vs weak).

In mixed teaching, Mosconi (1989) stipulates that the dynamics of the class often seem organized around the dominance of the boys' group. The boys or at least a part of the group of boys monopolize the space of the class, either the educational space or the sound space. Girls on the other hand, besides an attitude of withdrawal and silence, are characterized by a "spirit of seriousness" in order to better respond to the teacher's requirements and those of the school in a general way. However, it should be noted that these differences in student behavior, in direct

association with their degree of cooperation, can be modulated by their social belonging. Indeed, if some behaviors are related to gender (such as noise for the boys), others depend on the social class.

Mosconi (1994) noted that when it comes to answering a question, it is the students of the popular classes (boys and girls) who abstain. We consider that these various elements explain in part the observed differences in behaviors of application, in particular the differential seen in the private institution (around 55% of behaviors of application) compared with the public institution (45%).

The differences in application behavior between boys and girls in the public institution can also be explained by the gender stereotypes which mark the school disciplines. Mosconi (1994) refers to the existence of a bi-sexual categorization of disciplines in the "implicit social cognition." According to this author, from the college, boys and girls are ranked differently in the various school disciplines.

Moreover, in physical education, Verscheure (2005) stipulates that the male and female connotations of sports and physical activities may arouse differential engagements for girls and boys. The female connotation of the gymnastics discipline, due to its aesthetic and artistic dimension, can partially explain the difference in application behavior for girls compared to boys (globally 49% vs. 41%).

Besides, in the mixed classes, the teachers, unconsciously, interact much more with boys than with girls. This general tendency is observed at all levels of teaching, whatever the gender of the teacher. These differences in intervention increase when it comes to scientific and technical disciplines (Mosconi, 1994). It should be noted that in the public institution, the taught gymnastics elements have a larger acrobatic degree for boys and girls than in the private institution.

One of the possible explanations is that the gymnastics teaching in coeducation school, in order to attract more boys, increases the difficulty of the proposed tasks or stresses some dimensions of it.

6.3. Teachers' practical epistemology and student engagement.

Student engagement depends on the nature of the situations prescribed for the class. In the private institution, we have demonstrated a lack of differentiated learning situations even though the institution has sufficient specific equipment for creating real workshops. We interpret these findings by assuming that the teacher has no didactic resources allowing her to develop differentiated learning situations in terms of organizing the environment or of defining criteria of success. These difficulties of conception and management of the learning situations lead to a control class that does not take into account the school positions of students. Consequently, this has an impact on the degree of cooperation of students in performing the proposed tasks.

In the public institution, the didactic regulations of Najoua were not always targeted and rarely concerned the knowledge issue. Her regulations are covered by a limited verbal and tactile repertory. However, we point out many visual regulations that are relevant and which highlight relevant traits in the achievement of the tasks. This teacher, although not an expert in gymnastics, is able to promote the engagement of students. The precision of regulations refers to, as the concepts of the classroom ecology, the idea that active supervision must be targeted and enable students to engage effectively in learning tasks.

In both institutions, we find what was highlighted by several studies on the importance of teachers' expertise in the didactic management or on the decisive role of the practical epistemology of teachers in physical education and sports in the evolutionary dynamics of

didactic processes (Amade-Escot, 2013; Elandoulsi, 2011). We hypothesize that under different forms; the practical epistemology of these two teachers explains partially the forms of engagement and cooperation of students highlighted in the three observed sessions.

CONCLUSION

The contribution of this paper is to describe and to compare the various modalities of participation of students in two contrasting schools (public vs private). We have highlighted singular students' form of inscription in didactical contracts. The students play on different modalities of engagement to develop social relationships, to develop fun activities, or even to reduce the demands of the tasks proposed by the teacher. The results show that student engagement depends on the overall learning environment (forms of organization and composition of the class) as well as the practical epistemology of teachers.

However, to go beyond these results, we must question the effects of these engagement modalities on the teaching-learning process.

By focusing on how students participate in the didactical process, Bennour (2014) in her doctoral thesis showed how the classroom ecology can be compatible with the analysis of the didactic joint action. Her research highlighted that the transformation tasks behavior produced by students can lead to a productive disciplinary engagement, although too often, it has been considered that these behaviors weaken the classroom ecology.

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