Stability and transformation in configurations of activity: the case of school teaching in France and Mexico

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The present article examines the social and cultural dimension of activity, which we propose to call configuration, in reference to Elias' works. These configurations are characterized by: (1) stability (they do not change a lot); (2) security (for the teacher who can rely on school habits); (3) invisibility (teachers are not aware of them); (4) incorporation (they are culturally inherited); (5) community share (they are common to most teachers around the world). We illustrate these characteristics in two different contexts, each one taken in primary school: in France, in a classroom where the teacher uses a work by contract (seatwork); and in Mexico in a context of reform of the curriculum. These configurations are, simultaneously, conditions of formal learning and objects, which must be informally learned; in spite of their permanency, we try to investigate the conditions of possibility of configuration transformation: lifelong learning is one of these conditions.

Change and stability in teaching practices have become a fundamental research issue given the current context of social mutation and deep educational reforms in many countries. The universe of brief time and the rapidity of events, the hegemony of numeric communication and information tools lead to a complete transformation of the conditions and modalities of individual and collective action. These transformations diversify norms and value systems contributing to changes in work and social roles. They make us more sensitive to concerns regarding techniques and culture (Simondon 1989, Stiegler 1998), education and training. Certainly, all these mutations have consequences for teachers' practices and pupils. Therefore, according to some authors (Cuban 1984, Tyack and Tobin 1994), school and its practices are sealed by traditionalism and stasis. In particular, certain pedagogical formats (Doyle 1986) might carry a very traditional idea about pupils' work organization according to disciplines and teaching grade. These formats belong to the class culture (Gallego *et al.* 2001) and help teachers to maintain order and to bring pupils into activity. These formats are easily identified and imposed for their general use and are part of the

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ordinary teachers' and pupils' culture. They respond to all political, social, economic and cultural exigencies on teaching and to a scholar format (Vincent 1994). Primarily these formats have been described as seatwork, recitation script or whole-class presentation(s) (Doyle 1986, Gallego *et al.* 2001). These formats of pedagogical and didactical activity are used each year, in all school grades and for different academic subjects. Teachers, in spite of no training, usually mobilize them. They keep a high degree of generality and few actualizations. They construct teachers and pupils' activities on academic subjects, artefacts, interaction modes and space–temporal organization.

The present article attempts to explore the possibilities of transforming teaching practices at school under the impact of a training 'oriented activity' based on the course-of-action approach (Leblanc *et al.* 2008) that supports the study of pedagogical formats and configurations of collective activity. It tries to answer the following questions: first, how pedagogical formats weigh on individual activity, conferring stability, permanence and what can be considered as traditionalist; and second, how these formats are susceptible to evolve in certain conditions to enable lifelong learning. It proposes a description and an analysis of the dynamic transformation of the individual and the collective activity through two examples taken from the cultural contexts of France and Mexico.

Theoretical frame and line of argument

Leaning on Elias's (1987/1991) work, we distinguish social formats (seatwork, recitation script) from configurations of collective activity (Veyrunes *et al.* 2009) which are the actualizations of these pedagogical formats. The configurations constitute a unit of analysis containing, simultaneously, the sociological determinants and the individual dimensions of activity. They identify the social dynamic regulated by rules but unpredictable on its real sequence. The configurations make possible the articulation modes of individuals' activity and, at the same time, are produced by them. They have been studied in several disciplines as, for example, the resolution of mathematics problems (Veyrunes *et al.* 2009), a swimming course in a single file organization (Gal-Petitfaux 2004), the discussion in a geography lesson (Veyrunes and Saury 2009) or the 'pass between the rows' when seatwork takes place (Veyrunes accepted).

It seems to us that the notion of configuration of collective activity constitutes an appropriate tool to understand generality and permanence on teaching activity in concrete dimensions——social and cultural. Taking advantage of the stability and the durability of pedagogical formats, these configurations make possible their transformation. New difficulties in teaching activity, for example, the increasing gap between the norms and scholar values of teachers and those of pupils, the relativism accorded to those norms, mutations of teaching work itself and constant reforms and prescriptions, raise new exigencies to work activity in class. In this context, configurations are never reproduced identically: they are continually reconfigured through individuals' activity. These re-configurations thus offer important learning, transforming and adapting possibilities to actors (Durand 2008).

The configurations of collective activity are described and analyzed in the way the actors interpret, actualize and transform, in their situated activity, the contributions and exigencies that come out from the situations. Rising in the

'semiological framework' of Peirce (1958), the theory of the course of action (Theureau 2002) permits the analysis of the activity as a flow, decomposable in action units, meaningful from the point of view of the actor. Each of these units derives from the dynamic articulation of several elements: the 'structure of expectancy' (preoccupations and expectations), the 'representamen' (perceived meaningful aspects of the situation) and the 'interpretant' (extension of the relationships between types and principles of interpretation belonging to the culture of each agent).

The structure of expectancy is the totality of the potential actualities opened to the actor engaged in the situation, relatively undetermined, but delimited each moment by what is significant to the actor. It is composed by preoccupations and expectations of the actor as well as his referential. The latter constitutes his 'past cognition', it means his whole culture. The representamen is the 'determined events for the actor', and corresponds to what is imposed to him. The interpretant translates the intervention in the cognition here and now of elements of generality issued from the referential, including all the experience and cultural density of the actor. Particularly, in collective situations, the referential is partially shared among actors. The action of an actor may constitute the representamen for the activity of another actor and, therefore, modify his activity. The significant structures or the components of each hexadic sign are considered shared when the content is judged as common, similar and convergent. The structures and the components are considered as non-shared when their content is judged as different or divergent.

As a result, collective activity takes place according to the orientation of an actor's individual action and to their reciprocal articulation in interaction. This articulation supposes a joint activity and some points of articulation between individual courses-of-action. It is a sharing function of a 'phenomenal universe' of actors interacting, the common elements of their referential (i.e. of their culture) and shared anticipations. The present study tries to reach, simultaneously, the individual level of activity, the articulation of collective activities and the configuration that enables this articulation. This approach leads us to consider that the actualized referential in the activity configurations is shared among actors (Gibson 1979, Norman 1993, Hutchins 1995). This actualization and participation are the result of offers, constraints and possibilities of configuration and allow the access to the dynamics of culture's construction and transformation.

This contribution leans on empirical teaching data in French and Mexican scholarly contexts. Data hold various configurations of collective activity studied in both environments. The empiric material helps to nourish, illustrate and validate the argument mainly organized by the collective activity configurations subject and the way they help to bring a breath of fresh air to training throughout the teaching profession.

At school, in several scholarly disciplines and educative systems, too much time——sometimes more than 50%——(Doyle 1986, Helmke and Schrader 1988) is spent on seatwork that pupils must do at their desks and with their own material. The seatwork facilitates a 'next control mechanism' in class (Doyle 1986, Emmer and Stough 2001). In fact, this is essentially what seatwork would aim at: extreme individualization of teaching should avoid the risks of disorder limiting collective interactions time. It is sometimes considered as a means of pedagogical differentiation and as a kind of ideal of differentiation. However, the

seatwork generates several configurations: while pupils work individually, the teacher keeps a close watch over pupils and alternately attends only to some of them. In many cases, the teacher gets around the classroom to supervise pupils' work giving them some help. This mode of organization, in spite of its permanence, presents also traces of variability: the teacher adapts it to his purposes according to the constraints he is submitted to. The seatwork is traditionally used in a 'pedagogy of the exercise', facilitating pupils' activity and the supervision of their work. According to this pedagogy, pupils accomplish written exercises, often after a lesson time that has permitted the teacher to present the applied notions in the exercises. In general, these exercises are identical for all pupils, sometimes variable in number and length according to their work rhythm.

The case in France

The exposed situation corresponds to a particular actualization of this pedagogical format, responding to the prescription to 'consider the heterogeneity of pupils'. For policymakers, this heterogeneity supposes the implementation of specific organization modes as the 'individual work', the tutorial, etc. These organizational technologies, often together with some tools (work plans, agreements) are considered to permit teachers to treat pupils' difficulties, assigning them specific tasks according to those difficulties. These technologies are founded on the idea that pupils 'are all different': pedagogy must be oriented to adapt teaching to their needs as far as possible.

Context

A particular kind of 'seatwork' has been studied in a 26-pupil class of fifth grade in a primary school (pupils of 10–11 years old). The study involved a teacher with 12 years of experience. The school had 12 classes composed of a socially and culturally heterogeneous public. The sessions observed took place as part of a daily 'work by contract', implemented in mathematics and French. The teacher proposed a block of exercises and pupils had to choose them according to the difficulties they thought they would experience and that they would be able to overcome. Next they had to conduct a self-evaluation and once ready, they executed the final evaluation. If the teacher considered they needed help or they demanded it, they were brought together to a help work-group. Students having completed their contract might complete some complementary exercises. Each contract was spread over several days preceded by a collective work period where notions were presented.

Seatwork adaptation

The individual activity of teachers and pupils. Three months after the beginning of the courses, the fundamental preoccupation of the teacher was that pupils did not completely control their work organization by contract: the teacher expected 13 out of 26 pupils to experience difficulties and 3 to present additional
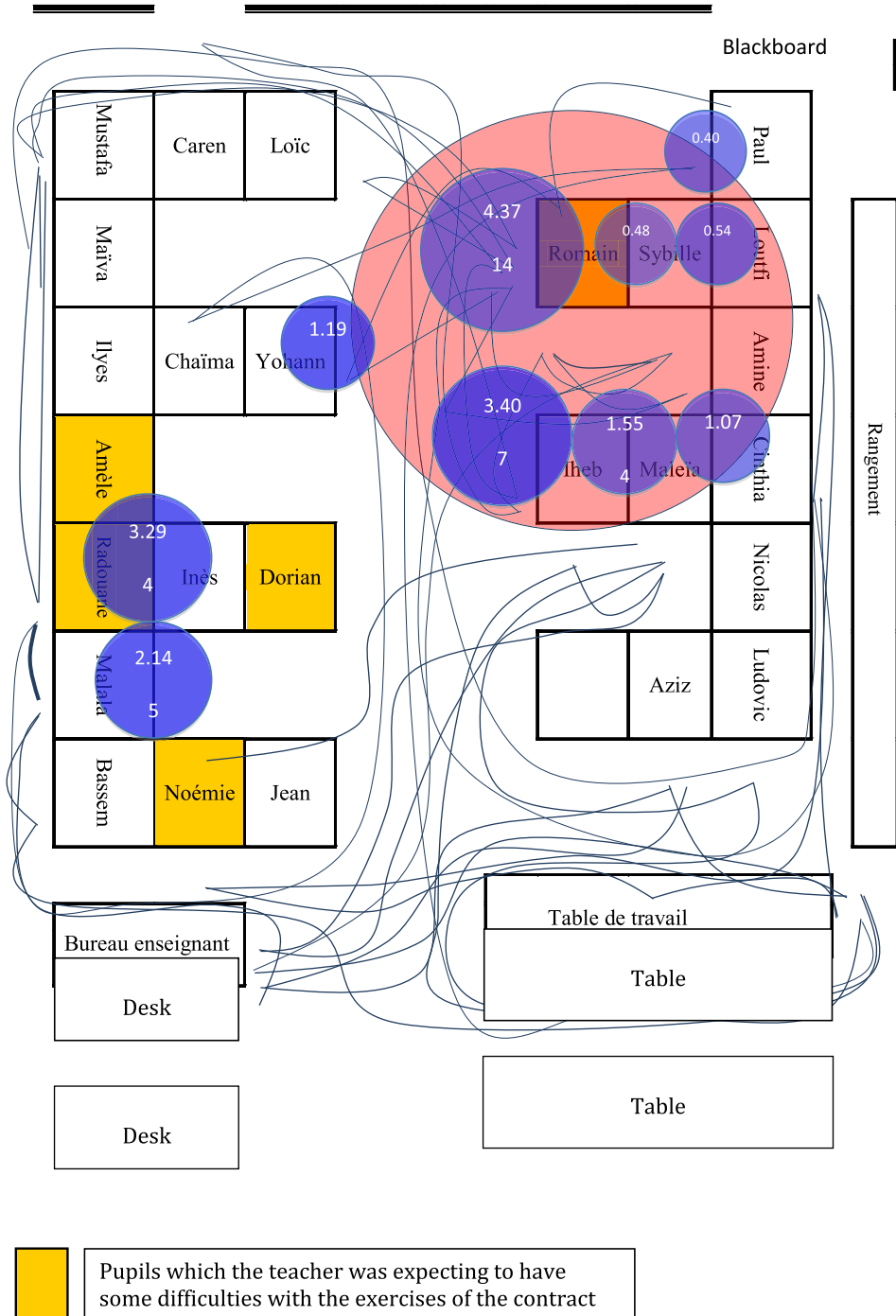
Blackboard

Mustafa	Caren	Loïc
Maïva		
Ilyes	Chaïma	Yohann
Amèle		
Radouane	Inès	Dorian
Malala		
Bassem	Noémie	Jean

Paul — 0.40

Romain — 4.37 / 14 — Sybille — 0.48 / 0.54 — Loutfi

Yohann — 1.19

Amine

Iheb — 3.40 / 7 — 1.55 / 4 — Maleïa — 1.07 — Cinthia

Nicolas

Aziz — Ludovic

Rangement

3.29 / 4

2.14 / 5

Bureau enseignant

Desk

Desk

Table de travail

Table

Table

Pupils which the teacher was expecting to have
some difficulties with the exercises of the contract

Figure 1.   Teacher's pattern of movement in the classroom

difficulties in completing the exercises. Moreover, the teacher's main preoccupation was to lead pupils to organize their work, which was distributed according to each pupil's progress.

The components of his referential and his interpretant were organized into five elements: (1) in this work organization, pupils must identify the point achieved in the contract; (2) it is difficult for them to identify that point; (3) to start working is difficult for pupils; (4) pupils with organizational problems have to be identified and assisted; (5) pupils have to get to work promptly. According to this referential, the teacher expected the pupils to identify the point they had reached in the contract. But he thought that the contract was too heavy for pupils with work organization difficulties if they completed all the exercises. He also thought that this mode of organization produced loss of time and energy. Most of all, the teacher searched to put and keep pupils on work and helped some of them to fulfil the exercises.

The components of the referential and the interpretant of pupils that could be described were organized in four aspects: (1) it is difficult to be situated in the contract; (2) they do not know what they have to do; (3) they ask for the teacher's assistance when he moves around or when he looks up; (4) it is permitted to have fun and talk with the classmates if the teacher does not notice it. Consequently, their involvement in work was variable: some pupils took too much time to get to work as others finished the proposed exercises quite quickly. When the teacher was busy, most pupils profited to have discrete interactions with those close to them: discussions, exchange of 'little messages', mutual aid, etc. To receive the teacher's assistance, pupils might raise their hand at their place, yet he forbade them to interrupt when attending another pupil. To obtain support, pupils tried to attract the teacher's attention. When he had finished assisting someone, he walked nearby or looked up and could see them.

The configuration of the collective activity. The configuration is characterized by the spatiotemporal dynamics of the articulation of the individual activities; these concern the teacher's movements and the teacher–pupil interactions. The teacher moved from one pupil's place to another and interacted with them according to a specific rhythm established by his preoccupations and expectations concerning pupils and their activity. The teacher only approached 16 out of 26 pupils; however, he interacted with others, particularly with those that he considered were not working. He moved constantly throughout the classroom and his stops lasted about 52 seconds. His expectations about difficulties that pupils might have didn't make him go automatically towards them. In fact, among pupils that had organizational difficulties in carrying out their work, the teacher did not approach four of them. According to this pattern of movement, a centre of gravity appeared in the class (see figure 1).

Many interactions implied responses to pupils' attitudes: they took advantage when the teacher turned his back. Once their attitudes multiplied, they generated an agitation that demanded the teacher's intervention. The 5 pupils at the classroom's centre of gravity contributed to 28/48 (58%) interactions with the teacher.

The regular presence of the teacher in this sector 'self-nourished' the dynamics of the collective activity: on the one hand, it permitted the pupils to ask for more assistance, on the other hand, the teacher focused his attention on pupils next to him and those who were far away were unable to gain his assistance.

During the session, 38% of interactions took place after one pupil's solicitation, 27% were produced when the teacher noticed that a pupil didn't work and 35% were strictly a product of the teacher's initiative.

The transformations of the individual and collective activity and of configuration. The implantation of this new organization gives a privileged access to the transformations of the teaching activity. After experiencing this organization mode, the teacher tried to reduce pupils' solicitations and to save time in assisting them. In fact, this kind of work supposes functioning rules other than the 'classic' seat-work rules to maintain the pupils' involvement: as their work is less simultaneous, the teacher must prevent disturbances in class resulting from differences in pupil's work rhythms. One of the problems was the choice of exercises that pupils with difficulties struggled to complete. After a session, the teacher declared: 'I am aware that this tool is hard for children with difficulties'. Subsequently, the teacher tried to find solutions: 'yesterday, I worked with those pupils who spent too much time to complete their exercises. Before setting out with this lesson, I informed the class of what they were going to do and why'. Thus, the teacher elaborated new rules: (1) pupils have difficulties selecting the exercises in the contract; (2) pupils must avoid doing all the exercises as it's an important workload for them; (3) they have to be asked to select the exercises they have to complete; and (4) their selection has to be controlled and validated. The process continues and, two weeks later, the teacher suggests:

> now… I'm going to leave them alone but I will come to see them [and] what I would expect from them, is to see [what they do] and to tell them: explain to me why you have done this exercise and not this one, to help them to think about what they are doing.

The process of transformation continues and expands; the teacher considers that in two weeks, pupils have progressed in their selection of exercises in the contract, that they can be exempted from the phase of control and justify their choice. The teacher assigns more exhaustive aims to this learning concerning development and reflexivity.

The dynamics of collective activity appear to be modified and loaded with a new fluidity. The pedagogical format remains identical but the configuration of collective activity evolves.

The case in Mexico

To explore further the different cultural specificities in pedagogical formats of seatwork we carried out a study in Mexico, a country divided into 32 states, but where the educative system is standardized to the Federal District. During our study, the Secretary of Public Education had initiated a curriculum reform in primary schools, after having modified the secondary-school curriculum in 2004 and the pre-primary in 2006; 2009 marked an important phase of homologation in the Mexican educative system, and as a result an eventual factor of change or evolution of the pedagogical formats and the configurations of collective activity in the class. Without exempting the international situation, the concept of com-

petences was imposed by Mexican authorities as a lever of a curricular change. Such a reconsideration of traditional fundaments of school cannot be normally executed, without a radical overhaul of practices and pedagogical formats commonly utilized. In the context of this reform experimented in 2008 and generalized to all the country in 2009–2010 for the first and the last grades of primary school, we were interested in permanencies and in the renewal of the pedagogical formats and the configurations of collective activity.

Statements resulting from observations

The observations were carried out in a mid-size primary school in the Federal District. In this establishment, only two teachers, of quite different formation and experience, dictated courses in the first grade. Without any surprise, we registered important constants issued from the spatial organization in class, and too much questioned, as well as from the lack of substantial modifications of manuals.

Regarding the actualization of the seatwork, we can discuss cultural differences with the French situation. During the activities assigned to pupils, the two teachers returned mostly to the seatwork, the method in consonance to typical norms. The teacher writes a series of exercises on the blackboard and asks everybody to complete them in the corresponding notebook (blue for Spanish, red for mathematics…). Even one line on the blackboard ('the cat is fat') the pupils have to copy individually three times in their notebooks. It can be also a maths exercise written on the blackboard which must first be collectively resolved before passing to the next line. Some variants exist: the teacher can distribute a photocopy containing an exercise to be done individually (the Mexican flag to be coloured, arithmetic exercises, etc.) or to ask pupils to open their exercise manuals, fill in the blanks, or to cut some figures to post in the manual commenting on the assignment. After having explained the task individually, the teacher passes between the rows, and controls the comprehension and the execution of the instructions. Therefore, a pupil can easily ask for details or for assistance.

After verification of each work stage, the teacher then sits at her desk where pupils can solicit her help. A senior teacher evaluates one by one the exercises directly in the notebooks that pupils bring to her. She congratulates the first pupils to come or gives them some candy once their duties are finished. Each time a pupil accomplishes the tasks and their work has been evaluated, they walk around the classroom, discussing or going to see some classmates even if they have not finished the exercise yet. The novice teacher, on the contrary, prefers to gather all the notebooks once the exercises are finished and puts a note on each one during the break or when the pupils are concentrating on the next exercise. The evaluation mode differs (immediate or deferred), but the pedagogical format is similar and in agreement with the archetype of seatwork: the teacher suggests an exercise; the pupils work individually and then submit the result for evaluation.

Modification of manuals and permanence of the traditional pedagogical formats

We can imagine that the current reform turns over the regular work organization of pupils or introduces new configurations or even new pedagogical formats

as collective work in workshops around a project or a problem resolution. Traditional and new formats based on a pedagogical innovation could co-exist during this first year. Throughout our observations, any activity or clear rupture with the seatwork and the recitation script were induced by the reform. In fact, these pedagogical formats represent a blind spot of the reform: explicitly, the manuals provided to pupils introduce an invitation to change the order in the classroom. The proposed activities in these manuals can hold well with a form of dialogical lesson or an organization centred on the individual work. In the three training units offered to primary-school teachers for helping them to translate in class the principles of the reform, three points are emphasized: (1) the connection between learning situations and real life; (2) the planning of didactic activities; (3) the modification of learning modalities. These training sessions do not get into the classroom dynamics or the traditional pedagogical formats that are re-conducted in the teaching activity as they are not explained or questioned.

Conditions for the development of the configurations

We hope that the present study will allow us to consider the conditions of development of these configurations. Let us take another example. At the moment of an interview, the researcher goes back over a strategy observed in the teacher's activity: when she begins a new programme block in Spanish concerning the activity 'let's make a zoo', she asks pupils to identify one another by emitting animal sounds written on a piece of paper.

The teacher's verbalizations let her register her course-of-experience (the typical elements of the referential, the interpreting, the representamen and her pre-occupations) to elaborate this pedagogic sequence. At the Escuela Superior de Maestros, she learned to introduce all activities based on pupils' knowledge, trying her best to make a connection with their reality. Whole preoccupations and expectations towards the manual derive from this knowledge (the new activity must have sense for pupils): if the intention is to organize a zoo, the manual must introduce this new activity based on the pupils' experience. In part, the book proposes to question pupils about a previous visit to the zoo. This beginning that she will retake thereafter seems to be insufficient: many of the pupils, from a modest social background, have never visited a zoo. She thinks then of an activity that could serve as preamble. She remembers an integration activity consisting of asking children to imitate the cry of an animal and to re-group by the identification of the same cry. Here a structure of expectancy appears, inherited from the knowledge acquired from training taking the teacher to find in the manual an activity that disappoints her expectations. As a consequence, she has to explore ahead on her knowledge to propose an alternative to the sequence suggested in the manual. The transformation thus consists of adding an activity absent in the manual and moving the activity to the schoolyard. The activity takes place with an uncertain success. Many hypotheses can be discerned: (1) the configuration does not permit the teacher to realize her preoccupations; (2) theinstructions have not been clear; (3) pupils struggle to imitate the animal that has been assigned to each one and contour the instruction showing the others the piece of paper where the animal's name is, looking to be mutually identified. During the planning stage, the game appears not to satisfy the

preoccupation to search a sense and an authentic situation. It seems to betray the limits of the referential of this young teacher who held from this activity 'lack of anything better'.

The configurations of the collective activity and the in-service training of teachers

Stability of the pedagogical formats and configuration of the collective activity

Pedagogical formats are educative technologies so well incorporated by the actors that they become transparent and invisible, as the keyboard for a writer or glasses for someone who is a far-sighted. These formats lead to configurations that emerge depending on the cultural inheritance (Gallego *et al.* 2001) and that are partly imposed by the characteristics of each situation. They are, therefore, the product of the inheritance of a teacher who has been a learner and which he reproduces as a teacher (Lortie 1975). In this framework, configurations are realized through the potential offered by the situations in class, their spatiotemporal organization (blackboard, desks in apple-pie order, temporal divisions), their technological dimension (tools, manuals, etc.), the tasks attributed to pupils, the interactions among actors and the rules and norms that control them.

We believe these characteristics help to explain the stability of the individual and collective activity in the pedagogical formats. We subscribe to the authors who consider that this stability responds to the constraints of the teaching profession (Barrère 2002, Bautier and Rayou 2009): the seatwork facilitates most of the novice teachers to keep order in the classroom; when the class is in order, the recitation script allows pupils to be engaged and participative. If it is true that each of these pedagogical formats can be actualized in diverse configurations of the collective activity, these also preserve general signs of permanence that sharply structure the activity. Teachers expect pupils will work and pupils expect the teacher will prescribe a task, ready to negotiate it. The configurations present, however, the stability characteristics of pedagogical formats: the structures are reproduced giving then to the collective activity a certain foreseeable nature as, for example, in the rhythm and duration of moves along the rows or in interactions produced during the recitation script (Veyrunes and Saury 2009). In this context, the individuals dispose of habits to react; for example, the way of responding to pupils' solicitations or sending them feedback. This stability gives to the actors a certain comfort and lets them reach the aims they fix, as in the case of the pupils' work supervision when passing between the rows. Changes are thereby digested and incorporated to existing practices, or even invalidated. In spite of the change of rules when working by contract, the interaction norms are hardly transformed and, for example, pupils elaborate routines issued from the learner condition to obtain the teacher's assistance. However, the hasty observation and poor consciousness of the nature of these configurations also creates, despite their pertinence, a blind-spot of research and teaching activity. From our point of view, these elements help to explain the observable viability and resistance of the pedagogical formats in all educative systems, at all scholarly levels and subjects, as well as the supposed 'conservatism'

of teachers. They also permit us to reconsider the conception of teachers' train-
ing (but more widely adults) thinking carefully about these cultural (profes-
sional culture) and collective (dynamic of collective activity) dimensions.

Transformation factors of these configurations

The question that arises, therefore, is what are the conditions that could lead to
the transformation of these configurations? They are weak objects of conscious-
ness and seem to be out of reach of any modification. Somehow, everything con-
tributes to their permanence. At the least, we would let ourselves think
thoroughly about the conditions of transformation of these configurations.

The Mexican teacher confronts the preparation of a didactic sequence con-
sisting of introducing pupils to a new thematic project. Dissatisfied with the
beginning of the sequence proposed in the manual, she inserts a previous activ-
ity without the expected success because of the instability of the formats: lack of
spatial reference for pupils, absence of helpful experience to anticipate the
course of the situation. Nevertheless, we perceive how she is forced to displace
the didactic activity and to propose another work organization to pupils. A new
configuration emerges. The collective dynamic is not an analysis topic, but the
configuration of the activity and the background format are modified. A change
is thus observable from the detailed planning in the manual.

These elements seem to open up some issues regarding the configurations of
collective activity transformation: the tension between the teacher's structure of
expectancy (her expectations and preoccupations to accord sense to the pupil's
activity) and her referential ('undoubtedly, many children have never gone to a
zoo'), that leads her to move away from the manual and to establish the condi-
tions for a change of pedagogical format and the emergence of a new configura-
tion. This tension between the object of her activity and her representamen is
internal to her course of action: the configuration is not conscious here but
indirectly modified. The norms of the collective organization in class are not
'thought' as such, but induced by the work asked of pupils and by the artefacts
proposed (the piece of paper given to each of them). We make the hypothesis
that the non-antagonist tensions (Sève 1984) inside the course of action can be
the motor of development of professional activity and guide teachers to seek
other pedagogical formats.

The case of the French context let us re-paint the story of development. At
the beginning, the pupils' activity organization from a device called the 'con-
tract' collided and created difficulties: certain pupils are not able to adapt to
the device, spending a long time trying to understand how to organize their
activity, choosing exercises and taking advantage of the situation to change the
regular norms of written individual work, moving more than necessary or talking
to the others. The research's device comes with this setting up and allows gath-
ering analytic information about the courses of action of pupils and teachers.
On the other hand, it produces also transformative effects: the teacher, con-
fronted by her activity, moves from a pre-reflexive to a reflexive activity fixed at
the end of the interview; it pursues, by itself, the dialogue initiated with the
researcher ('I realize…').

Accidentally, the researcher has sown doubt in the professional, who has made explicit the tensions and the obstacles in her activity. The new rules that the teacher sets up bring changes to the configuration: pupils, becoming more independent, cannot plead any more their location difficulties in the contract of having to wait for the teacher's help and must work harder. We assist in a development of the action of this teacher supported by a thought inflicted through the methodological framework. The modification of the instruction results in a modification of the form of pupils' engagement, and thus carries a different course of experience that will modify the possible points of articulation between the courses of experience and thereby re-define the interactive dynamics and the process of stability and instability of the configuration of the collective activity.

Designing training devices

This transformation of the pedagogical format and the evolution of the configuration in class take place in a relatively spontaneous manner. However, we perceive that the intervention of a researcher lets us emphasize the contradictions that can be the object of a deep analysis, bringing a modification of instructions, following the example of the change of the offside norm, cited by Elias and Dunning (1966), which produces *de facto* a modification of the configuration of the game in football. We could, however, go further in this direction promoting support of the analytical practice of teachers, and their lifelong learning, and make evolve the configurations of collective activity in class or even transform the pedagogical formats. In fact, the configurations are actualizations of pedagogical formats, but they escape to the pre-reflexive consciousness of educative actors, especially teachers themselves. This lack of consciousness leads the actors to reproduce configurations. For sustaining the development and the evolution of teaching practices, it must, therefore, be considered an object of consciousness. This means the actor would experience these configurations, in other words, that they become the object of an awareness-raising in a different action. For the course-of-action programme, this supposes, then, to help the actor to go beyond his intrinsic point of view and to adopt the 'point of view of the configuration' to destabilize his action. This point of view is accessible through the reconstruction of the dynamic of collective activity from the observation data, corresponding, for example, to the representation of the teacher's moves in the classroom, their number, duration and sequence. These data enable us to see how collective activity is configured as it goes along the lesson and allows emphasizing 'patterns', repetitions that the actor can question. This representation of the researcher would constitute an instrument for the conscious taking of the actor and for his training. It prolongs his pre-reflexive consciousness showing his action within the collective activity. Making the configurations objective, implicit norms are evidenced, or rather the application of these norms: pupils work individually on an exercise that the teacher gives to them and the pupils give to him the implicit task to assist them. Visualizing the effectuation of these norms, the configurations could become an object of the training that sustains the continuing education of teachers.

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