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▶ To cite this version:

HAL Id: hal-00803989

https://hal.archives-ouvertes.fr/hal-00803989

Submitted on 24 Mar 2013

BEGINNING TEACHERS' SITUATED EMOTIONS: A STUDY OF FIRST CLASSROOM EXPERIENCES

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Abstract

This paper both presents a framework for analyzing situated emotions and describes the evolution of two teachers' emotions during their first classroom experiences. Based on Peirce's three categories of experience (1931-1935), we categorized teachers' emotions into affective states, sentiments and emotions-types. The principal results show (a) the emotional flow during ordinary teaching situations, (b) the emergence of contradictory emotions related to phenomena of emotional hysteresis between the affective states and sentiments, (c) the typical character of their emotions related to dependence on the lesson plan and the need to maintain student activity, and (d) the importance of typicalization of emotions in learning to teach.

Beginning teachers' situated emotions: A study of first classroom experiences

The role of emotions in the dynamics of human action is widely acknowledged. Inseparable from cognitions, emotions are veritable motors of action (Damasio, 1999; Scherer, Schorr & Johnstone, 2001). Yet despite this, research on emotion in natural situations is rare, in part because of the difficulty of adopting a congruent theory and method to document emotions in real time. Studies on "well-being" from the analysis of emotional processes and on the daily flow of emotions perceived by actors (*e.g.,* Hasegawa & Yoshimura, 1999) are among the rare works that have attempted to describe emotions in professional situations. However, the tools for evaluating well-being in the workplace most often separate the meanings of actors' activity from its time dynamics.

The same finding holds true for research in teaching. According to Boekaerts (1996), not until 1980 did researchers begin to use theoretical frameworks and methods to evaluate emotions in the classroom. Since then, an abundant literature attests to the consequences of emotions, such as teacher anxiety, burn-out and stress linked to uncertainty in class events (*e.g.,* Schwab, 1996). These researchers identified two stimuli for stress in teaching situations: an increase in task constraints and reduced cognitive resources linked to fatigue.

The importance of emotion in face-to-face interaction between teacher and students has particularly been observed with beginning teachers (*e.g.,* Feiman-Nemser & Remillard, 1996). These researchers have shown that the first five to seven years of teaching are a critical period during which professional activity is accompanied by strong and often negative emotions. They have confirmed teaching as emotional work that gives rise to feelings of satisfaction, but also to tension, dilemmas and even suffering, all of which have negative effects and result in loss of efficacy. To date, teachers' emotions have been described from questionnaires, interviews and personal journals. A major shortcoming of these methods, however, is that emotions become detached from the actual teaching activity and the context in which they appeared.

This study thus has three objectives: (a) to present an analysis of situated emotions using a theory based on Peirce's semiotics (1931-1935), (b) to describe the evolution of emotions of two beginning teachers during their first classroom experiences, and (c) to show the key role of typicalization of emotions in learning to teach.

This study is also part of the first step in a much larger project whose goal is to develop a programme for teacher education based on the typicalization of beginning teachers' activities, the analysis of the shortcomings revealed by this process, and the search for effective solutions.

1. A Semiotic Theory of the Course of Action

Our study of emotions uses the approach of situated cognition, which highlights the situativity of psychological processes. In agreement with the "situative perspective" (Greeno, 1998; Hutchins, 1995; Lave, 1988), emotions are considered as inseparable from the situations in which they take shape. They emerge from the actor's physical, mental and social activity and are essential to any description of human experience.

Based on Peirce's semiotics (1931-1935), the theory of the course of action (Theureau, 1992) focuses on the level of experience that is meaningful for the actor, that can be shown, told and commented on by the actor <u>a posteriori</u>. This theory is founded on the postulate that the level of experience that is meaningful to the actor has a relatively autonomous organization compared with other possible levels of analysis and can therefore result in valid and useful observations, descriptions and explanations (Theureau, 1992). Some empirical studies in the fields of teaching and teacher education have already demonstrated its power (Bertone, Méard, Flavier, Euzet & Durand, 2002; Bertone, Méard, Ria, Euzet, & Durand, in press; Flavier, Bertone, Haw & Durand, 2002; Durand, 1998; Leblanc, Saury, Sève, Durand & Theureau, 2001; Ria, Saury, Sève & Durand, 2001). These works have analyzed teachers' action in the classroom by defining it as a dynamic, meaningful, organized totality, situated corporally and culturally.

The course of action theory is based on the hypothesis that humans think and act using signs (Peirce, 1931-1935). The flow of these signs in action indicates that actors are constantly

integrating the components of their past and present experiences and expectations in relation to their future experiences.

Emotions are thus studied <u>in situ</u> from what the actors can report and observers can perceive. Their description is based on actors' revelations of a meaningful environment in permanent evolution and on the description of objective constraints on their activity (Theureau, 1992).

1.1. Three Categories of Experience According to Peirce

Peirce (1931-1935) distinguished three categories of experience: firstness, secondness and thirdness. These categories are both inextricably bound together and distinct: actors experience globally but can then express the different contents of a given experience in a respective order of firstness, secondness and thirdness. These three categories of experience refer to three modes of existing in the world: Potential, Actual, and Virtual (Theureau, 1992).

Firstness is the category of experience as it simply is without reference to anything else. It is characterized as an immediate revelation of self in the world (*e.g.*, the simple sensation of being wet). This syncretic sensation is without particular interest or relevance to the actor's meaningful environment or "world" (Varela, 1980). By its indetermination, firstness is a Potential mode of existence in that it provides an opening for the actor -- from past experiences -- toward "possibles" (Peirce, 1931-1935) not yet actualized in the present experience.

Secondness is the category of experience during the concretization of a fact. It reflects a particular interaction with the actor's world (*e.g.*, the sensation of being wet might be related to the fact that it is raining). Secondness is an Actual mode of existence in that it is the actualization of one or several possibles (*e.g.*, the action of protecting oneself from falling rain or thinking that rain is good for nature).

Thirdness is the category of experience that gives rise to reasoning, to generalization. It is the mode of knowledge construction (*e.g.*, the recognition of the experience-type of being in a bad mood when it rains, thus confirming the regularity of the actor's experience in similar situations).

Thirdness allows the discovering of typicality in our relationships with the world from past and present experiences. It is a Virtual mode of existence in that it produces and/or modifies knowledge according to a mode free of contingencies.

1.2. Three Descriptive Levels of Emotion

From Peirce's three categories of experience, three descriptive levels of emotion are proposed.

First are syncretic affective states related to the firstness of experience. They constitute the continuous emotional flow linked to the actor's adaptation to his or her physical and social environment. They are immediate and diffuse revelations of personal engagement with the world (*e.g.*, the diffuse sensation of feeling "good" or "bad", comfortable or uncomfortable, pleasant or unpleasant). These affective states are embodied and can develop without relevance to the present moment, analysis or reason.

Second are sentiments[1] related to the secondness of experience. These are the prominent and time-limited moments of emotion that can be told and commented on (*e.g.*, the transitory sentiment of irritation that it is raining).

Third are emotion-types related to the thirdness of experience. They correspond to the typicalization of actors' emotions. They contribute to the construction of proven regularities in situations that are similar to the actor's eyes (*e.g.*, the knowledge -- more or less implicit -- of typically being in a bad mood on rainy days).

Thus defined, emotions emerge from interaction with the world. They are related to the preoccupations that determine the specific manner by which an actor interprets his or her experience. An actor can become aware of his or her emotions by revealing the meaningful contents -- more or less elaborated, more or less symbolized -- post-experience. Affective states, which are syncretic states in permanent and implicit development, participate in opening up possibles for the actor (Potential). From interaction with the world emerge sentiments of the order of actions and impulses (Actual). And emotion-types contribute to the typicalization of experience (Virtual).

Emotions are fundamentally relational phenomena, but express different degrees of communicability. In contrast to sentiments, which are relevant to the present moment and more easily expressible given favourable conditions (non-judgmental setting, mutual actor-researcher confidence, facility in expressing or verbalizing emotions), indeterminant affective states cannot be directly told or commented on.

We assume that an actor experiences emotions in a unitary and synthetic fashion, as a global experience in the world, but our method is an effort to distinguish between different emotional contents and describe them. It consists of examining emotional flow (Dewey, 1938) down to the finest degree of precision in terms of what has meaning for beginning teachers, particularly their affective states, sentiments and emotion-types.

2. Method

2.1. Participants

The participants were eight volunteer beginning-teachersduring their pre-service year. They had distinguished themselves with high honours in national exams and were now teaching classes under the supervision of a mentor. At the time of the study, these teachers had accumulated approximately three months of teaching experience. Only the results concerning two of them are reported here (Gaelle and Christophe, respectively 23 and 25 years, both of whom had passed their Physical Education Teaching certification exams). The data of the others are presented synthetically. All were teaching in high schools located in towns in central France. The majority of students were white and from a middle-class background (with fewer than 10% from immigrant families), and they posed few disciplinary problems.

2.2. Data Collection

Thirteen physical education lessons with students ranging from 12 to 18 years were observed. Seven different sports were taught in these lessons.

Two types of data were collected: (a) observational data that were recorded during teacher-students interactions with a VHS camera mounted on a tripod and an HF microphone, and

(b) self-confrontation interview data collected post-lesson: self-estimation of affective states using a 7-point analogue scale while watching the video recording, and the recording of their verbalizations during the self-confrontation interview.

2.2.1. Documenting Emotions

Affective states were documented from the Estimation of Affective States (EAS) scale that had previously been validated by correlation between the estimation of affective state and recorded heart rate as a biological indicator of emotion (Ria, 2001). This scale helped the actors to estimate and express synthetically the positive or negative character of their experiences. The fluctuation of this estimation reflects the fundamental dimension of adaptability in human activity directed toward positive, pleasant and comfortable states and anticipating or avoiding those that are negative, unpleasant or uncomfortable.

The EAS scale has 7 points ranging from +3 (very pleasant or very comfortable) to –3 (very unpleasant or very uncomfortable). The estimated tone of an affective state on this scale corresponds to an immediate and syncretic feeling. This level of emotion can only be shown. The teachers estimated the positive or negative character of their classroom experience immediately following the lesson while watching the video. They were allowed at any time to modify their estimated scores on the EAS scale without justification or explanation.

Immediately following this step, sentiments were documented from self-confrontation interviews. This consisted of asking the teachers, who were watching the video of their classroom activity, to describe and comment on their experience, step-by-step. They were encouraged to describe what they were doing and thinking, what they were taking into account to guide their actions, what they were feeling and perceiving. This level of emotion, which can be told and commented on, emerges from what was meaningful for the actor in the situation. Sentiments were labelled from the self-confrontation data without systematically using the teachers' wording *(e.g.,* the expression "Right then, I was not feeling too great!" during a self-confrontation interview was labelled as troubled).

Emotion-types were also documented from the self-confrontation interviews, from the recurrence of certain emotions experienced by the teachers. This level concerns the typicalization of emotions. Emotion-types were labelled from explanations given by the teachers regarding their experiences in situations estimated by them as similar (*e.g.*, "It's always so hard to get them going!"). These indicated the regularity of emotions experienced by the teacher in identical situations.

All verbalizations by teachers and students in class were transcribed <u>verbatim</u>, and behaviours were systematically described. These descriptions are based on categories that give the reader a functional understanding of the teaching situation by using terms that are neither generalities (*e.g.*, speak to the students) nor paraphrases.

2.2.2. Credibility

Several measures were taken to enhance the credibility of the data. First, the transcripts were given back to the participants to ensure the authenticity of their commentary and to allow them to make changes to the text. Minor editorial comments were made regarding confrontational responses. Second, the data were coded independently by two trained investigators who reached consensus in documenting the teachers' emotions. Initial disagreements were resolved by discussion between the researchers until consensus was reached. Finally, the results were carefully read by the participants to make sure everyone agreed.

3. Results

The results are presented in two parts. The first part describes two excerpts from the courses of action. These excerpts show two typical traits of beginning teachers' emotions: the fluctuation of Gaelle's sentiments with classroom circumstances and Christophe's contradictory emotions. The second part describes the recurring emotional phenomena of the beginning teachers by a systematic comparison of affective states, sentiments and emotion-types in the midst of different courses of action.

3.1. Excerpts of Courses of action

3.1.1. Excerpt 1: The contrasting character of Gaelle's sentiments during an ordinary teaching situation

Gaelle was observed while she was teaching volleyball to a class of 26 high school students. The students, aged from 17 to 20 years, were engaged in the task, displaying neither resistance nor opposition. The data presented come from Lesson 4 of a cycle of 8. Excerpt 1 is from the beginning of the lesson. Gaelle was waiting to announce the beginning of stretching.

Gaelle calls the students and tells them to begin the stretching exercises. She observes them seated on the ground stretching.

Excerpt from self-confrontation interview. Gaelle: "I don't say anything specific because they've already been doing the stretching exercises like that… The same in track and field… I'm just watching to see what they do… It's pretty calm, it's a pleasant moment even if some of them aren't really stretching seriously. It's been a pleasant moment from the beginning of the year…"

Gaelle was waiting for the students to stretch on their own using exercises learned in previous cycles. She indicated a score of +3 on the EAS scale and expressed sentiments of serenity and confidence in the self-confrontation interview. The present experience reinforced her conviction that she regularly had sentiments of serenity and confidence during the stretching period from the beginning of the year with this class. The typicalization of her experience was linked both to the calmness of the students seated on the ground stretching and the memory of other pleasant experiences with them during stretching. It was also linked to the nature of her expectations for this type of situation: students carrying out a familiar task with no particular pedagogical requirements.

One minute later, Gaelle decides to present the next part of her lesson plan but asks the students to continue to stretch. During her presentation, she refers to "a little tasks[2]" of manipulating balls. A student corrects: "a little task!" The class breaks out laughing. Gaelle smiles, pauses, and then continues: "a little task!"

Excerpt from self-confrontation interview. Researcher: "How do you take their correction? And their laughter?" Gaelle: "…As harmless (she laughs), this class is always so easy…"

Gaelle gave a score of 0 on the EAS scale, indicating a less comfortable state than previously (+3). Yet she claimed during the interview to take the students' correction of her grammar as harmless. She expressed her feelings post-experience by indicating a drop in comfort in her classroom experience yet continued to express a positive sentiment. We suggest that the previously comfortable experiences in class have carried over to her present experience. In other words, Gaelle expressed global sentiments -- not only from the present moment -- of serenity and confidence in an agreeable and comfortable relationship with her students without seeming to be particularly affected by their having corrected her. Her sentiments, as emotion-types repeatedly experienced with this class, infiltrated her present experience and minimized the emergence of more transitory sentiments of unpleasantness.

Gaelle hesitates and asks the students to finish stretching with arm and shoulder movements before taking the balls for the next part of the lesson. Some of them -- those closest to her -- continue to stretch, imitating her, but most of them stand up to get the balls. She continues to move among the students, but few of them look at her. She walks about six feet, raises her head and faces a student (Alexis), who has a ball in his hand and stops in front of her. She looks at him smiling and says: "OK, let's go!"

Excerpt from self-confrontation interview. Gaelle: "It's too soon because I wanted them to finish the warm-up… But they wanted to play with the balls so I said to myself: 'Oh, it's no big deal…' But, well, there I didn't feel too good about myself! (sighs)… In this kind of situation, I wonder about my ability to control the class…"

During this relative loss of control of her students, Gaelle gave a score of -2 on the EAS scale, signalling discomfort. She expressed the sentiment of being troubled in a situation that has suddenly become complicated for her: the opportunity to save time by taking advantage of the relative calm of the students has turned into a confusing situation. This experience reinforced her

conviction that it is hard to keep control of the students when they are trying to avoid a pedagogical task and, at the same time, it makes her doubt her capacity to control the class.

This two-minute excerpt of a beginning teacher's action with high school students shows clearly the rapid shift towards an uncomfortable classroom experience (from +3 to -2) and the contrasting character of her sentiments during an ordinary teaching situation. Gaelle felt serenity and confidence at the beginning of the excerpt, linked to the recognition of stable and recurrent elements in her teaching situation. This situation was familiar and gave rise to unthreatening expectations: the students were generally seated and calm for this activity. In the course of action, she saw the opportunity to save time by presenting the next part of the lesson, which was a major preoccupation for her in her role as teacher. But this placed a double demand on the students, *i.e.*, to continue stretching and to listen to instructions, which in fact led to a deterioration in the situation. Gaelle thus felt unpleasant sentiments and doubt during this loss of classroom control. The situation became threatening to her, because of both the difficulty of recovering classroom control and the difficulty of returning to her lesson plan.

3.1.2. Excerpt 2: Christophe's contradictory emotions

Excerpt 2 concerns Christophe during a badminton lesson with 15 second-year high school students. These students, aged from 15 to 19 years, had been witness to minor classroom incidents since the beginning of the school year. At the beginning of Lesson 3 of a cycle of 7, Christophe was experiencing problems in setting up some of the material he considered essential for his plan. After four unproductive minutes installing the badminton net, he tried to regain control of his students. During the self-confrontation interview he admitted to being highly disturbed by the time lost in trying to install the third net, which caused him to change his lesson plan (-2 on the EAS scale):

Five minutes later: the students are working.

Excerpt from self-confrontation interview. Christophe: "I feel relieved because the students are finally playing, things are going along… Everything OK… They are working… But it

continues to bother me… I'm still irritated… I try to think about the lesson… But I'm still

bothered… And I can't get out of it…"

Ten minutes later: the students were still working.

Excerpt from self-confrontation interview. Christophe: "The students are calm and playing

well… Everything is running smoothly… But, still, I'm tense… Upset… I can feel it… I can

really feel it… I'm just then getting over what had happened…"

Christophe brought up feelings of being upset and bothered during the interview, as well as

feelings of relief and then satisfaction. His feelings were contradictory: disturbance and frustration

because of the problems setting up the nets and relief and then satisfaction at seeing the students at

work. Christophe continued to express the unpleasant aspect of his experience by scoring a -1 on

the EAS scale, as if the experience of his inefficiency at the beginning of the lesson had continued

into the present experience. The sentiments expressed during the self-confrontation interview

reflected synthetically both what had meaning for him as satisfying in class and the emotional

residue of the negative experience that he had gone through a few minutes before. What was

meaningful for Christophe was thus anchored in indices perceived in the present situation

(secondness of experience): the students in action, and indices that were incorporated and

pre-thought (firstness of experience): the unpleasant experience at the beginning of the lesson. This

occurred to such an extent that the somatized affective states of the past experience infiltrated his

present experience and signified for him in a diffuse fashion.

3.2. Emotions-types of Beginning Teachers

The excerpts above reveal the intimate and singular fashion by which Gaelle and Christophe

experience emotions in class. Similarities are nevertheless noted. The description of the ensemble

of emotions of all the study participants evidences typical traits of a community: beginning teachers

during their first classroom experiences. We systematically catalogued and compared the affective

states, sentiments and emotion-types of the 13 courses of action under study. We present here some

of the descriptive elements of these recurrent emotional phenomena, by highlighting the beginning teachers' dependence on their lesson plans.

The emotions of beginning teachers are related to the preoccupations that mobilize them: Gaelle and Christophe were both very preoccupied with following their lesson plan. They were convinced that the success of their lesson depended on exact and exhaustive fidelity to the plan. Gaelle took advantage of a favourable situation to anticipate the next step in her plan and Christophe spent several minutes at the beginning of his lesson trying to install the equipment. The students, Gaelle's mistaken intervention, and Christophe's defective material were all threats to fidelity to their plans. Gaelle thus experienced sentiments of discomfort and doubt; Christophe was strongly disturbed. They felt threatened in the sense that their plan was called into question and they could not come up with clear ideas of the future for their lesson.

Adhering to the lesson plan and maintaining student activity are two of the major preoccupations for beginning teachers during their first classroom experiences (Ria, 2001). These two preoccupations are at the source of their emotion-types. As soon as indices of the classroom situation are interpreted as potential threats to these preoccupations, they experience unpleasant emotions. Their plan delimits the arena (Suchman, 1987) where interaction with students is going to take place. It limits the uncertainty of classroom interaction. At the same time, it reduces teachers' anxiety in that it lets them anticipate the future by providing a scenario of what is likely to happen. The lesson plan obsesses beginning teachers to the point that they forget to observe their students. This reflects a change in the functionality of this cognitive artefact (Suchman, 1987): from an aid to action, the lesson plan becomes a programme that must be followed; and the students become a potential obstacle to this plan. Their classroom experience provokes anxiety when reality deviates from their plan and does not when it conforms. They thus experience less satisfaction in seeing their students at work than in being able to carry out their lesson plan. Concretely, Gaelle perceived an opportunity to save time during the students' stretching exercises rather than

observing them to regulate their activity. Christophe, affected by the obstacles to carrying out his lesson plan, was unable to focus on his students' activities.

Maintaining students in activity is based on beginning teachers' shared conviction that inactive students are a threat to their lesson plan. This threat takes two forms. The first is student resistance to the teacher's expectations: for example, sentiments of unease, even helplessness, when they are waiting for students to begin working and are uncertain how long it will take. Waiting is a threat to their plan. When the teaching situation matches their expectations (and the plan allows for this possibility), they experience comfortable sentiments. The second form of threat is from the impression of impending resistance linked to memories of past unpleasant experiences. For example, they feel defensive or on alert even when students are getting involved in activity if they have already been confronted with losing control of these same students. They learn by experience that their students are unstable and that they have many problems getting them into activity. Their fear is thus related to potential resistance, even when they perceive no indices in the present situation.

4. General Discussion

The discussion is approached from two angles: the role of emotions in beginning teachers' activity during their first classroom experiences and the pertinence of describing situated emotions using Peirce's categories.

4.1. Role of Emotions in Beginning Teachers' Activity during Their First Classroom Experiences

Studies have shown the importance of attending to the much neglected emotional dimension of teacher's selves in continuing professional development (Day & Leitch, 2001; Hargreaves, 1998, 2000). Our results confirm that emotions have a dynamizing impact on professional activity, particularly during beginning teachers' first classroom experiences. The study follows step-by-step the genesis and evolution of emotions in class, with three characteristics emerging. The first is that teaching is sometimes experienced by beginners as a crisis situation, with strong emotional tone (Ria & Durand, 2001). The dilemmas perceived by these beginners are

manifest sources of destabilization, dissatisfaction, and even helplessness (Ria *et al.*, 2001). They are experienced endogenously as "vicious circles" in which they are caught, feeling incapable of responding simultaneously to several essential -- to their eyes -- preoccupations. For example, they find it difficult to organize future exercises while simultaneously keeping the students involved in activity: Gaelle lost control of her students by wanting to save time to ensure the completion of her lesson plan.

The second characteristic concerns the determinant part of emotions in beginning teachers' decision-making: They make decisions and act in class on the basis of their emotions. They feel discomfort when their lesson plan is not respected, and they also modify their plans when negative feelings arise. Their emotions are the basis for the adaptive intelligibility of their classroom action.

The third characteristic is the role of almost systematic dissimulation of emotion in front of students. Face-to-face contact is a favourable moment for the emergence of emotions, whether pleasant or unpleasant, and beginners tend to cut short this emergence by interrupting interaction with students. They try not to let internal disturbance invade and betray them. Like Gaelle smiling and letting the students take the balls, they try to keep up a good front, to present a consistent image of themselves and to give the illusion of having a good handle on the situation. An essential need at the beginning of the teaching career is to learn to recognize one's own emotions so they can be appropriately and relevantly dissimulated to give the impression of controlling events even when one has partially lost control.

4.2. Emotions from Peirce's Categories of Experience

4.2.1. Phenomena of emotional hysteresis

Gaelle made a French grammar error in the beginning of her lesson that was immediately picked up by her students; however, she expressed feelings of confidence and serenity. Christophe noted his students were working; however, he expressed sentiments of feeling bothered and upset. Gaelle had had many pleasant moments with her students since the beginning of the school year. She was confident in a situation that seemed to her predictable and familiar. Christophe had lost the

assurance of keeping to his lesson plan at the beginning of class. He felt threatened in a scenario that had become unpredictable. Their past experiences and the emotions that emerged at these times were contributing to their current emotional experience.

Emotions develop according to two dynamics: one relative to the firstness of experience (the firstness of the current experience is constituted of the thirdness of past experiences), one relative to the secondness of experience. These two dynamics are deployed according to different time scales. The first emotional dynamic, related to affective states and emotion-types, endures and is slowly prolonged with inertia and adherence. This dynamic, which emerged from the typicalization of past experiences, infiltrates the present experience. The second dynamic, which is related to the actor's sentiments, is more tightly associated with the events currently being experienced. Sentiments are often more labile. The first dynamic, rich in past experiences, forms a more stable emotional base; the second is more ephemeral. Our results show that the past experiences of these beginning teachers -- whether positive or negative, but linked to adhering to their lesson plan and maintaining student activity -- were the emotional basis for their classroom action. Other class events were less meaningful to their eyes.

The two emotional dynamics are out of phase in certain cases, indicated by the emergence of positive or negative sentiments (secondness) based on affective states (firstness and thirdness) marked by an inverse emotional tone. This is linked to phenomena of emotional hysteresis, meaning a prolongation of earlier emotional experiences at the heart of the actor's present experience.

These experiences of hysteresis tend to limit (a) the display of negative sentiments emerging on the base of a positive affective state and (b) the display of positive sentiments emerging on the base of a negative affective state. Gaelle's experience maintained a pleasant emotional tone because transitory negative sentiments based on present classroom events were minimized by the force of past positive affective states. The prolongation of the pleasant state of her experience was linked to emotions experienced with this class since the beginning of the year. On

the other hand, Christophe's experience conserved an unpleasant emotional tone because the potentially positive affective state of seeing his students working was minimized by the negative affective states arising from past experiences.

Thus, recurrent emotions contribute to the affective state of the present experience and may be in or out of phase with sentiments. This means that emotions experienced earlier during the same course of action or other courses of action are potentially actualized in the present experience. These emotional residues are positive or negative imprints of past experience and contribute to delimiting the field of present possibilities. In some cases, they infiltrate the present experience to the point of becoming meaningful for the actor. The identification of the origin of emotions is thus difficult. For Christophe, simultaneously relieved and irritated, the origin cannot be exclusively found in the situation, but in the heart of the present experience conceived as a synthesis of multiple present and past emotions, singular and general (experienced once or regularly by the actor). Accordingly, an actor never experiences identical emotions in the strict sense, since his or her course of action never stops changing and, in turn, changing emotions.

4.2.2. Typicalization of emotions

Although emotions are related to a particular state in a situation that is never reproduced identically, they are nevertheless sources for generalizing experience. Gaelle interpreted her experience in a positive fashion because of her regularly pleasant experiences with this class. Christophe interpreted his in a negative fashion because of his experiences of other difficult lesson beginnings. Both teachers spotted elements in their current situations that were highly similar with their past classroom experiences. They identified globally the satisfactions or resistances they could encounter and were able at times to anticipate or avoid them, thus somewhat controlling the pleasant or unpleasant character of their experience. This typicalization of emotions is an essential modality of learning to teach. It is a response to the need to avoid unpleasant situations or at least to anticipate them and thereby minimize their effects. Beginning teachers learn to recognize their own emotions in class and to spot regularities in their dealings with students. With experience, they

learn to recognize the situations in which they tend to feel more or less comfortable. Although Gaelle minimized the consequences of the classroom events, she nevertheless learned that it is difficult to engage students in two different activities at once. Sentiments of powerlessness and doubt concerning her capacities to regain control of the students reduced her self-confidence and serenity. We may assume that Gaelle, faced anew with a situation that offers her the possibility to save time, will mobilize her past experience to avoid a repetition of her initial error. Unpleasant emotions can thereby constitute situations favourable for learning to teach effectively.

Our research contributes to the ongoing description of the situated emotions of beginning teachers and their typicalization, but we in no way claim to predict which situations generate what emotions for beginning teachers. Emotions are not systematic resultants of interaction-types. Such an idea would be contrary to emotional constructivism, which assumes the actor's autonomy and on which our research is based. The actor's emotions emerge constantly as a function of the way he or she interprets the present situation in relation to his or her past experiences.

5. Conclusion

The semiotic theory of the course of action provides different levels to describe emotions, which are essential to understanding human experience. Affective states, which arise from past experiences, can only be shown. Sentiments, on the other hand, emerge in the here and now and are either in or out of phase with past and/or present affective states. Last, emotion-types permit the actor to define emotional expectations for future experiences.

This research and, by extension, our project for a new teacher education programme, support the movement towards training methods that develop the expression and sharing of beginning teachers' professional experience (Durand, Ria & Flavier, 2002). We particularly encourage beginning teachers to: (a) express classroom emotions a posteriori, (b) recognize their own emotions while listening to the experiences of other teachers, (c) typicalize situations through awareness of their own emotional responses in order to catalogue the various classroom situations (*e.g.*, class beginnings, one-on-one interactions with students, and so on), and (d) understand their

emotions as emerging from knowledge and preoccupations that are typical components of their specific culture in action and in becoming.

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[1] Our use of "sentiment" differs from Peirce's in that he defined it as being of the order of firstness; that is, as a state or revelation of the world without present. We instead use "affective states", which is close to the "background emotions" of Damasio (1999), to refer to continuous emotional flow (firstness) and "sentiment" to describe the presentness of the emotional experience (secondness).

[2] Which corresponds to a gross agreement error between singular and plural in French.