

Dialogism, Argumentation and Human Development: an Approach to Teacher Professional Gestures by Means of the Self-confrontation Method / *Dialogismo, argumentação e desenvolvimento humano: uma abordagem de gestos profissionais docentes por meio do método da autoconfrontação*

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ABSTRACT

This text is focused on concrete teaching practices in teacher-student verbal interaction situations. Its objective is to present a discussion about the development process of teacher professional gestures and a detailed study of a singular gesture present in the practice of two higher education teachers, with whom we worked in cooperation. The method adopted is that of the simple and crossed self-confrontation. In order to analyze the verbal material produced in the self-confrontation sessions, we articulate the concepts of dialogism, argumentation and human development.

KEYWORDS: Dialogism; Argumentation; Human Development; Gestures; Self-confrontation

RESUMO

O foco deste trabalho é a prática de ensino concreta em situação de interação verbal professor-aluno. Seu objetivo é apresentar uma discussão sobre o processo de desenvolvimento de gestos profissionais docentes e um estudo detalhado de um gesto singular proveniente da prática de dois professores do ensino superior, com os quais trabalhamos em cooperação. O método adotado é o da autoconfrontação simples e cruzada. A fundamentação teórica para análise do material verbal proveniente das sessões de autoconfrontação articula os conceitos de dialogismo, de argumentação e de desenvolvimento humano.

PALAVRAS-CHAVE: Dialogismo; Argumentação; Desenvolvimento Humano; Gestos; Autoconfrontação

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Introduction

Our reflections on professional teaching gestures have their starting point in 2003, when we initiated a master's research on teacher-student verbal interaction in a railroad vocational training center (LIMA, 2005). One of the objectives of this study was to compare two teaching practice situations of a young teacher who was at the beginning of his career in a high school technical course: 1) in verbal interaction with young students who had no previous professional experience; 2) in verbal interaction with adult students who had prior professional experience.

Considering the fact that the practical teaching situations were quite similar (same course, same subject, same class, same activity) and taking into account – among others – the difference of day shifts (mornings and afternoons for young students and evenings for adults), it was possible to notice that, when the teacher was helping students individually by answering their questions, his professional verbal gestures (answers, instructions, requests, orders, etc.) varied in their relatively stable form, that is, in their speech genre, according to the student's profile: for example, in very similar interaction situations, on the one hand, the teacher *imposed* certain procedures on the young students by saying "you will *have to* do such and such" and, on the other hand, *suggested* these same procedures to the adult learners by saying "you *can* do such and such" (LIMA, 2009a).

At the end of this study, it seemed that the teacher sometimes *oscillated* in his professional gestures between *imposition* – not giving young (and some adult) students enough opportunities for reflection – and *suggestion* of ways of doing – allowing adult (and some young) students to often act according to knowledge they already had. This oscillation seemed to indicate a course of development of professional teaching gestures which – as we assumed then – would reach its relatively stable form the moment the teacher would become able to "impose by suggesting" and/or "suggest by imposing", that is, in the first case, to indicate procedures to be followed by young students without nullifying their opportunities for reflection and, in the second case, to suggest procedures to adult students while at the same time challenging them to go beyond knowledge they already had (LIMA, 2010a).

We then put forward the hypothesis that the development process of professional teaching gestures takes place according to continuous¹ dialectical cycles of theses, antitheses and syntheses (BUCKINGHAM et al., 2011a, p.182; BUCKINGHAM et al., 2011b, p.199-200) to which the teacher comes. For example: the thesis that the interaction with youngsters should take place by the imposition of procedures to be followed by them; occasional awareness that this attitude ends up reducing students to mere executors of the teacher's requirements without stimulating their thought processes; the new thesis, which replaces the previous one (therefore, an antithesis), that interaction with youngsters should rather take place through the suggestion of procedures that may or may not be followed by them; occasional awareness that this new attitude leads to considering youngsters too autonomous; return to the first thesis (now the antithesis of the antithesis), which – soon – after new awareness, is abandoned so that there can be a new return to the second thesis (the antithesis of the antithesis of the antithesis) and so on, in an uninterrupted movement of regulatory oscillations which are directed to and result in a synthesis or "short-circuit" of opposite poles (VYGOTSKY, 1925/1971, p.142; 214): "impose by suggesting" or "suggest by imposing."

Continuing with these reflections, and seeking to confirm or refute this hypothesis, inside the same railroad vocational training centre, in 2005 we started a doctoral research whose aim was – among others – to study professional teaching gestures in *field trips* that are called *technical visits* and that involve the going of a teacher with his students to industrial railroad workshops in order to check out, in practice, technological aspects which, before the visits, can only be studied in theory, in the vocational training center classrooms. When a technical visit takes place, a worker from the visited workshop, called "collaborator", participates in the class and is given the task of presenting the work to the visiting students and, along with the teacher, of guiding them in its implementation (LIMA, 2008, 2010b).

The study of a sequence of four unprecedented technical visits to the same workshop, guided by the same teacher and the same collaborator, revealed the development process of professional teaching gestures involved in the realization of technical visits. On a first visit, prioritizing at first teaching and student learning over the

¹ As we will point out below, human development is often interrupted, in which case there is dysfunctional (even pathological) repetition of defects, which in their turn become defects of repetition (LIMA, 2010b, p.237; CLOT, 2008, p.158-159).

collaborator initial disposition of being brief, the teacher makes sure that a detailed execution of the work is presented to the students. The result is that, for lack of time, the visit ends without the presentation and implementation of everything they needed. On a second visit, against his own initial disposition to make a meticulous and detailed presentation of the work and resorting to the collaborator's initial proposed brevity, the teacher allows him to conduct the event in an economical way, that is, by avoiding details that – in his view – would be unnecessary. The result is that the visit comes to an end much sooner than the scheduled time. On the third visit, there is constant oscillation between the two dispositions and, on the fourth, it looks like this oscillation seems to disappear, giving way to a well balanced educational event, satisfactorily employing the time available for its realization (LIMA, 2009b, 2010c).

Furthermore, we found that the same phenomenon of oscillation between opposites was also present in the development process of the professional gestures of the students themselves, at the times of guided execution of professional activities (LIMA, 2010b, p.213-237), of the workers from the visited workshop (LIMA, 2010b, p. 220), and of the collaborator himself (LIMA, 2010b, p.216-219; 237-244). When we sought to identify the manifestation of these oscillations in other materials, coming from the studies of French researchers, we also found that the aforementioned phenomenon manifested itself in the way a certain interviewer-expert led the dialogue in an interview situation with an operator of the cement industry (LIMA, 2010b, p. 244-247; FAÏTA, 1995) and in the varied way five train conductors, with different lengths of professional experience, performed the same gesture of stopping a train at *Gare du Nord*, in the city of Paris, France (LIMA, 2010b, p. 248-253; FERNANDEZ, 2004).

These findings led us to confirm our hypothesis and allowed us to state that every professional gesture, be it a teacher's or other professional's in activity, develops itself continuously², in work situations, through this process of oscillation and, at the same time, contains in itself – at the very moment of its realization – certain syntheses of opposites with which the worker has already had to deal in order to give shape and relative finishedness to his professional actions.

Once our master's and doctorate researches were completed at the railroad vocational training center (LIMA, 2005; 2008), in order to continue the studies and

² See footnote 1.

reflections we had developed until then, at the beginning of 2009, we elaborated, got approval for and began to develop – within the *Universidade Tecnológica Federal do Paraná – UTFPR, Campus Pato Branco* – a research project (LIMA, 2009-2011) which, over the years 2009 and 2010, counted on the active participation of five undergraduate scientific initiation students from the Portuguese and English Language and Literature Teaching Course. Each of them was responsible for part of the implementation of a comprehensive work plan entitled "Relations between teacher-student verbal interaction and the development of professional gestures in UTFPR's technological courses".

The general objective of this work plan was to check out how teacher-student verbal interaction, in professional practice laboratories, contributes or not to the development of professional gestures, both of the teachers and of their students in the courses of Electrical Engineering (BENVENUTTI, 2010), Civil Engineering (ALVES, 2010), Industrial Maintenance Technology (ABATTI, 2010), Development and Systems Analysis (VARGAS, 2010) and Agronomy (TIBES, 2010). Its specific objective was to somehow articulate some actions of the Portuguese and English Language and Literature Teaching Course with other actions of these and other university technological courses.

In this article, based on the trajectory of studies, researches and reflections we have just briefly reported, our objective is to present and discuss some of the results obtained through these latest initiatives, which at one point involved – in a more specific collaborative work – a teacher from the Industrial Maintenance Technology Course, a teacher from the Electrical Engineering Course, two scientific initiation students from the Portuguese and English Language and Literature Teaching Course (ABATTI, 2010; BENVENUTTI, 2010) and different groups of teachers from the UTFPR.

1 Different contexts of one and the same professional teaching gesture

Under our guidance, Abatti (2010) addressed the Coordination of the Industrial Maintenance Technology Course in order to present the research for which she was responsible and to request that teachers of practical subjects were consulted about the

possibility of having one or two of their classes audiovisually recorded in one of the Course's professional practice laboratories. Thus, the teacher of Welding Processes volunteered to participate in the work and the researcher proceeded to record two of his classes in a lab where students practiced different welding techniques. A similar procedure was followed by Benvenuti (2010), who – in the Electrical Engineering Course – conducted audiovisual recordings of two classes of the Electrical and Electronics Instrumentation teacher.

As for the filmed teachers' professional gestures, two similar moments drew our attention. In the Laboratory of Welding Processes, when a student needed to light a torch to perform an oxyacetylene welding operation, we remarked his extreme difficulty to properly use the lighter and then to make the correct dosage of gases for effective lighting of the torch. The teacher – upon observing and noticing the student's difficulty – removed the tools from the student's hands in order to show him how to proceed and then returned them so that he could try to perform the operations by following the presented model. The student, upon retaking the instruments and trying to perform the operations again, was then successful.

In the Laboratory of Electrical and Electronics Instrumentation, when a student needed to perform an electrical measurement on a printed circuit board by using a device called multimeter, we also remarked his extreme difficulty to handle the materials, to manipulate the probes and to satisfactorily put them in contact with the board. Similarly to the teacher of Welding Processes, the teacher of Electrical and Electronics Instrumentation removed the probes and the board from the hands of his student in order to show him how to proceed. Then he returned them to the student so that he could try to perform the measurement according to the presented model. It was possible to observe in the video that this student, just as the first, was successful after the mediating intervention of the teacher.

Once we were interested in studying a little more deeply this professional gesture of removal of instruments from the hands of students, we invited both teachers – who until then had not had closer personal or professional contacts with each other within the university – to collaboratively discuss this professional gesture. The method we adopted was the simple and crossed self-confrontation, which was initially developed in France by the Bakhtinian linguist Daniel Faïta (1997; 2007) and later

largely employed and developed by researchers from the Activity Clinic Team, which is led by Professor Yves Clot at the *Conservatoire National des Arts et Métiers* (CNAM) in Paris, France (CLOT, 2008/2010; 2005; CLOT, et al., 2001). As we will clarify it below, it consists of theoretical and methodological procedures based on a specific use of the image of subjects in activity in work situations.

2 An approach to professional teaching gestures by means of the method of simple and crossed self-confrontation

Having at our disposal the audiovisual material produced by Abatti (2010) and Benvenuti (2010) in partnership with the teachers from the Industrial Maintenance Technology and the Electrical Engineering Courses, we invited both teachers to participate in dialogues and reflections that took place in three stages. In the first, we conducted two sessions of simple self-confrontation: each of the two teachers, individually, in the presence of the researcher, had the opportunity to observe the video excerpt in which he appears performing the professional gesture of removal of instruments from the hands of the student, and to speak about this practice.

Each of the two sessions of simple self-confrontation is then made up of three successive moments: 1) the teacher observes the video excerpt of his own classes; 2) the teacher is invited to describe and explain the observed excerpt; and 3) the researcher-mediator – from now on only mediator – questions the teacher.

In the second stage, we conducted two sessions of crossed self-confrontation. In each of these sessions, we had the presence and participation of both teachers. For example, the teacher from the Electrical Engineering Course, in the presence of the teacher from the Industrial Maintenance Technology Course, watched the video in which his colleague performs the gesture of removal of instruments from the hands of the student. Soon after that, he was invited to describe and explain the action of his colleague. Thus, the teacher from the Industrial Maintenance Technology Course had access to a different point of view, which – as expected – did not coincide with his own. Given this difference of points of view, the mediator coordinated the continuity of the dialogue and this resulted in the construction of a third, wider and qualitatively superior point of view, such as in a dialectical synthesis.

Each of the two sessions of crossed self-confrontation consists then of four successive moments: 1) the teacher, in the presence of the mediator and of his colleague, observes the video excerpt in which the latter performs his professional gesture; 2) the teacher is invited to describe and explain his colleague's class excerpt; 3) both teachers dialogue and reflect as a result of a difference of points of view; and 4) the mediator coordinates the dialogue and reflection.

Finally, in the third stage, a video documentary (containing the class excerpts in which the gesture under scrutiny is performed, as well as excerpts of the simple and crossed self-confrontation sessions) was edited and gradually shared with a collective of about three hundred teachers at UTFPR's Pato Branco *Campus*, in a sequence of twelve pedagogical meetings. Because of space limitations and the scope of this text, we will not address here this third stage. However, interested readers may consult Lima, Althaus and Rodrigues (2011) to access considerations in this regard.

3 Dialogism, argumentation and human development

We know that speech or activity genres (BAKHTIN, 1986a; CLOT, 1999/2004/2006) are constituted – in their mobility and dynamics – by a side of *repetition* and, at the same time, by a side of *recreation*, thus defining themselves as relatively stable types or forms of human action (BAKHTIN, 1979/2003, p.326; LIMA, 2010b, p.70-84). Therefore, every subject – upon speaking and/or acting – repeats statements and actions performed previously either by himself or by others. Furthermore, every subject – upon repeating these words and/or actions – also recreates and adapts them to unique and always new contextual circumstances (BAKHTIN, 1986a; CLOT and FAÏTA, 2000; LIMA, 2010b).

We also know – especially with regard to work activities – that the recreation of actions that are repeated demands engagement, that is, investment of oneself by the subject (LIMA, ALTHAUS and RODRIGUES, 2011). For different reasons, which – in the case of teaching work in higher education – correspond to difficulties already widely reported in the literature (PIMENTA and ANASTASIOU, 2002/2010; CARNEIRO, 2010; TEODORO and VASCONCELOS, 2005; VEIGA, 2010; VEIGA and VIANA, 2010), this engagement or investment of oneself can decrease over time, in which case –

if the subject is not led to the pure and simple repetition of his actions – he gets very close to it: he disengages, disinvests himself and thus his actions atrophy and become dysfunctional and unsuited to the circumstances (FREIRE, 2011, p.66).

Since human beings are full of unexplored possibilities at every moment of their lives (VYGOTSKY, 1979), even if there is engagement, the subject may not realize or may not become aware of the need to adapt his actions to new circumstances, which may cause them to be repeated in a virtually identical way and to become likewise inappropriate and dysfunctional (CLOT, 2008, p.158-159; LIMA, 2010b, p.237).

One way to contribute to the subject's ongoing process of recreating his actions by means of awareness and/or subjective reengagements/reinvestments can be found in the methodological procedures of the simple and crossed self-confrontation. By means of this method, the subject is led to have a social contact with himself (VYGOTSKY, 1978; 1979; 1934/2012), that is, to assume a position "outside of himself" so that he can, from this external position, contemplate, perceive himself, and realize – from the point of view of what is actually done in his own concrete activity – some of his unexplored possibilities. With this, he has the opportunity to recognize himself in the activity(ies) of his colleague(s) and to allow them, in their turn, to recognize themselves in his own activity(ies) (CLOT, 2008; LIMA, ALTHAUS and RODRIGUES, 2011).

Central to these methodological procedures is the question of dialogue, which can be understood both in the narrow sense of "direct, face-to-face, vocalized verbal communication between persons" and in the broad sense of "verbal communication of any type whatsoever" (VOLOŠINOV, 1973, p.95). Dialogue takes place by means of the exchange of units called utterances. Each of them, upon being produced by the speaking subject, responds to previous utterances and, at the same time, anticipates subsequent utterances (BAKHTIN, 1986a, p.69), entering into dialogic relations with them (BAKHTIN, 1984, p.183). It is important to point out with regard to dialogic relations that two utterances from different speakers, produced in different times and spaces, can enter into dialogic relations if there is between them any convergence of meanings because they treat or approach the same object, that is, the same topic (BAKHTIN, 1986b, p. 117; 124).

With this in mind, when we speak here of "dialogism," we mean and emphasize the following moments of the mobilization of the simple and crossed self-confrontation

method: 1) one in which the teacher, upon having his class filmed and upon being observed through the lenses of the video camera, begins to observe himself through the eyes of another (what will people say about the way I conduct my classes?), thereby *altering* (or not) his way of acting; 2) one in which the teacher, in the simple self-confrontation session, upon watching the excerpt of his own class for the first time, has the opportunity to observe himself as a teacher in a space and time which are not those of the classroom: what does the mediator think about the excerpt of my class and what can I say about it in response? What did I myself think of my class when it was being filmed and what can I think and say about it now in response?; 3) one in which the video excerpt of the teacher's class, in the crossed self-confrontation session, is presented to his colleague, who is then invited to describe and comment on it. In this last moment, questions can be of two types, depending on each of the two participating teachers: a) what will I be able to say about the excerpt of my colleague's class and what will he respond?; b) what will my colleague say about the excerpt of my own class, what will I be able to say in response and what is the relationship between everything that has already been said?

Dialogism manifests itself in self-confrontation sessions by means of this dialogue: teachers and mediators (here included the undergraduate scientific initiation students at the time of video-recording the classes) have face-to-face dialogues and, between the utterances produced and exchanged in different spaces and times of this process, dialogic relations arise because of the fact that they address the same subject or topic.

Our experience with the use of the simple and crossed self-confrontation method to approach teaching practices has shown that every gesture made by a teacher in the classroom, in contact with his students, is the result of a decision that the teacher takes, among other possible alternatives (see videos in LIMA and ALTHAUS, 2011). In this sense, each gesture corresponds to a *position* assumed by the teacher in favor of this or that way of coping with his work reality, because he understands that this or that gesture would be more *effective* – for it achieves teaching and learning goals – and more *efficient* – for it saves resources and efforts, both on his part and on the part of his students.

We can say then that in the self-confrontation sessions, upon being asked to speak about his own gestures and/or about those of his colleague, the teacher conceives speech plans (BAKHTIN, 1986a, p.77) in order to launch himself into dialogic processes (BAKHTIN, 1984, p.183) in which he presents arguments to defend or justify his professional actions, that is, he tries to lead his dialogue partners – the mediator and/or his colleague – to share his opinions. Therefore, the utterances produced by teachers under these conditions are, like any others, endowed with intentions that manifest themselves in the linguistic material³ and that evidently do not coincide.

The mediator's role in the self-confrontation sessions is to identify argumentative conflicts aroused by this non-coincidence of intentions and, at the same time, to encourage and facilitate dialogue so that different viewpoints can advance and develop. Departing from a minimum of two conflicting positions, two utterances whose intentions do not match, the mediator seeks to lead the participating teachers to arrive at a third qualitatively superior view. This process corresponds to a dialectical synthesis of theses and antitheses (BUCKINGHAM et al., 2011a, p.182; BUCKINGHAM et al., 2011b, p.199-200) materialized in a new utterance, which – in its turn – may subsequently become an object of new controversies involving, for example, other teachers in the spaces and times of pedagogical meetings.

We believe that promoting this kind of dialogue within the collective of teachers is something necessary. However, it does not occur spontaneously, given the difficulties of daily work that lead teachers in higher education to certain "loneliness" and "isolation" (PIMENTA and ANASTASIOU, 2002/2010, p.107). Thus, by taking into due account teachers' actual levels of development in terms of their current and concrete conceptions and practices, our goal is also to create spaces and times in which they can have the opportunity to perform with help that which they have difficulty performing alone. This leads them to act in a zone of proximal development (VYGOTSKY, 1978, p.79-91) that, if well explored, results in the conversion of levels of potential development into levels of actual development: along with it not only conceptions but also professional gestures can advance and develop.

³ In this regard, strictly with respect to the analytical approach to the linguistic material, we have in mind the category of argumentative operators (KOCH, 1984/2008; 1993/2006). This is so not only because we are convinced that this analytical category allows us to fully achieve our objectives in this study, but also because we envisage no incompatibility problems from the epistemological standpoint, once we resignify and employ it here from the point of view of a Dialogic Discourse Analysis.

4 Analysis of dialogues from the simple and crossed self-confrontation sessions

We will present and prioritize here, for space reasons, the analysis of dialogues about the gesture performed by the teacher from the Industrial Maintenance Technology Course. We point out that in our transcription of the dialogues, we only employ lower case letters and mark pauses or breaks by means of suspension points, thus simplifying the transcription norms suggested in Preti (2003) because this procedure fully meets our needs in this study.

At the very beginning of the simple self-confrontation session, the teacher is shown the excerpt of his class filmed in the professional practice laboratory. He views himself removing the welding equipment from the hands of a student. Soon after the presentation, the mediator (M) asks the teacher (T1) to comment on it:

M: we notice this... the student finds it difficult right? when handling the equipment... and you...
umm... you remove the equipment from his hands
T1: yes
M: you remove the lighter you show him how to do it... then you remove the... torch itself... then
you go back... all the equipment goes back into his hands
T1: all the equipment goes back into his hands
M: I would like you to comment... I would like us to observe the video again... and I'd like you to focus on it... on your act of removing the equipment from the hands of the student
T1: fine! fine!
M: and I'd like you to explain... to comment on it a little bit for us
T1: fine... I think we don't even need to watch it again...

It appears to us that the mediator initially seeks to put into words that which is seen in the video: the student's difficulty handling the equipment; the gesture of equipment removal performed by the teacher; the teacher's act of showing the student the proper way of handling the equipment; the return of the equipment to the student performed by the teacher. We observe, therefore, for the purposes of analysis we are interested in, two fundamental aspects: 1) first, the teacher's acceptance of the way or point of view from which the mediator puts into words the audiovisual material, which – as we discuss below – will have consequences for the subsequent interaction and argumentative process; 2) second, the way the teacher's word is requested: the mediator

proposes that the teacher watch the video again in order to *comment* on his gesture. Again, there is the teacher's acceptance. However, he considers unnecessary to watch the video a second time. Here are his comments and explanation:

T1: why did I remove the equipment? There is more than one reason... the first reason is the following... it is a large group... I can't allow one student to struggle for ten or fifteen minutes... until he is successful on his own initiative

M: right

T1: by trial and error... therefore removing the equipment from him is a way of... let's say it using quotation marks... saving time... for the practice to occur... but without... umm... impairing the student's comprehension...

By initiating his response with a rhetorical question ("why did I remove the equipment?"), the teacher confirms his acceptance of the mediator's point of view (the equipment was "removed") and – at first – seems to have understood the mediator's request of his comments as a request for *justification*, as if – somehow – the mediator was questioning the validity of the gesture. Then the teacher cannot but argue with the aim of commenting/explaining/justifying his practice. In order to do this, he firstly indicates that "there is more than one reason" to proceed the way he did and presents what for him is the first reason: "it is a large group". He then presents a second reason, derived from the first, in a cause-and-effect relationship: "I can't allow one student to struggle for ten or fifteen minutes... until he is successful on his own initiative... by trial and error".

After that, by means of the argumentative operator "therefore", which – in this case – introduces a conclusion on arguments 1 and 2 that have just been presented, the teacher finally explains the gesture he performed: "*therefore* removing the equipment from him is a way of... *let's say it using quotation marks*... saving time... for the practice to occur... *but* without... umm... impairing the student's comprehension".

We can notice in that conclusion the occurrence of both the expression "let's say it using quotation marks" – signaling that the idea of "saving time" is relative and not strictly a question of "saving time" – and the argumentative operator "but", which – in this context – opposes a possible argument directed to a contrary conclusion, which – as we can assume based on what the teacher says – would be the idea that removing the

equipment from the hands of a student would mean to deny him the opportunity to understand more deeply the working procedure.

We found that the teacher presents two kinds of arguments at the same time: some are implicit and others are explicit. We will call the first ones *implicit arguments* (IA) and the second ones will be called *explicit arguments* (EA). Here is the complete set of arguments presented by the teacher, according to these two categories, as well as the conclusion to which they point: 1) the time available for class completion is limited (IA); 2) "it is a large group", that is, there are too many students in the class (EA); 3) each and every student in the class must practice the work procedures being taught (IA); allowing each student to be successful on his own takes too much time and this prevents all the students from participating (EA). Conclusion: it is best to remove the equipment from the hands of the students in order to "save time", thereby allowing "the practice to occur" for everyone.

The observation of this argumentative process reveals that the utterance produced by the teacher is indeed a response to the previous utterance of the mediator and, at the same time, an anticipation of subsequent utterances of the mediator and/or of other possible interlocutors. In this sense, the following is not at all random: 1) the use of the expression "let's say it using quotation marks" before the idea of "saving time"; and 2) the argument introduced by the argumentative operator "but", according to which – with the removal of the equipment – there is no "impairment of the student's comprehension", which is confirmed in the audiovisual sequence, more precisely in the teacher's speech in the simple self-confrontation session:

T1: so I give him a demonstration... very fast ... I remove all the equipment... and I demonstrate it... look... it's like this... I even joked with him by saying that he thought I would give him an already lighted torch... not at all!... I turn everything off and give it all back... you saw how it's done? Now do it yourself

M: right

T1: and he takes the equipment back... if he had any doubt about what had to happen... he saw an exhibition there at that moment... a directed practice... and he tries to reproduce what was implemented... he takes it back... I keep watching and then he managed to do what I taught him... I mean ... if it was the first time he lighted the torch... he was certainly thrilled right?

By following this line of argumentation, we notice the teacher's concern primarily with the *temporal aspect* of his interaction with his student(s) in the teaching-learning process because it stands out in his utterances. Let us now turn to the moment of crossed self-confrontation, in which the teacher's colleague (T2) observes, comments on and tries to explain the practice of removal of instruments from the hands of students:

T2: this is what I could notice... we let the student up to the moment when...

M: let the student up to the moment when?...

T2: when you feel... oh no.... here I really have to give a... I have to help him before he also strays from the point or something like that... that's what I felt...

M: could you elaborate a little bit more on this issue?... let the student up to the moment I feel that he...

T2: it is a problem like this... I see it in my lab classes... often if you let the student too long... that's why sometimes when you have... too many students in a lab class it is bad... because... the student also comes to a time when he gets demotivated... it is worth letting the student... try... it is important... but there comes a time when you'll have to intervene in that experiment... to try to help him somehow so that he doesn't get demotivated or... frustrated ... he doesn't get frustrated with that... with that lab...

First and foremost, it is important to point out that our attention is drawn by certain discomfort on the teacher's part when he has to speak about the practice of his colleague. This discomfort manifests itself especially through speech suspensions that seem to be intended to imply some piece of information that the mediator is ultimately unable to access: "this is what I could notice... we let the student up to the moment when...". The mediator responds to this utterance by requesting clarification of information: "let the student up to the moment when?..."

We notice that the point of view and the argumentative process of the teacher from the Electrical Engineering Course resemble and, at the same time, differ from the point of view and the argumentative process of the teacher from the Industrial Maintenance Technology Course. It seems – paradoxically – that, for this teacher, his colleague does not "remove" the equipment, he rather "lets" or "leaves" it in the hands of the student until the moment he "feels" that he should "help him" so that he does not "stray from the point or something like that".

The mediator then asks the teacher to further clarify his view: "could you elaborate a little bit more on this issue?... let the student up to the moment I feel that he...". The mediator's request ends up launching the teacher in an argumentative process in which he aims to sustain his position through a chain or an overlap of arguments and conclusions.

Firstly, the teacher refers to the issue as a "problem": "it is a problem like this...". Secondly, as an argument that aims, in general, to support the point of view that he is formulating, based on his own experience, the teacher signals: "I see it in my lab classes...". Thirdly, the teacher presents the first part of each of two ideas, which will have as a conclusion – curiously – the same second part in which appears the argumentative operator "because" to introduce a justification or an explanation: "often if you let the student too long..." (first part of the first idea); "that's why sometimes when you have... too many students in a lab class" (first part of the second idea); "it is bad... *because...* the student also comes to a time when he gets demotivated..." (second part that complements the first two). Fourthly, anticipating an utterance that, in this sense, would reproach him from the didactic and pedagogic standpoint (probably: "then you mean that one should not let students try?"), the teacher says: "it is worth letting the student... try... it is important...". Fifthly, now anticipating an utterance that would reproach him from the same point of view (probably: "for you it would then be worth it and it would be important to let the student try indefinitely?"), the teacher – by resorting to the argumentative operator "but" – finally responds: "*but* there comes a time when you'll have to intervene in that experiment... try to help him somehow." This last response, in turn, is complemented by the enunciation of the purpose of this "attempt to help," which is introduced by the conjunction "so that": "*so that* he doesn't get demotivated or... frustrated... he doesn't get frustrated with that... with that lab...".

Thus, it appears to us that this teacher, as well as his colleague, uses implicit (the IA's) and explicit arguments (the EA's). This happens as follows: 1) the group of students is large (EA, cause and premise of the next argument); 2) the teacher does not manage to give [individual] attention to all students at the same time (IA, consequence and conclusion of the previous argument and cause and premise of the next argument); 3) the teacher lets students "try" without his follow-up (EA, consequence and conclusion both of the previous and the next argument); 4) it is "worth it" (EA, cause

and premise of the previous argument); 5) students get demotivated or frustrated (counterargument of 3 and 4 and EA, cause and premise of the next argument); 6) the teacher needs to intervene before students get demotivated (EA, consequence and conclusion of the previous argument).

By following now this other teacher's line of argumentation, even if there is not total absence of the problem of time from his points of view, we clearly notice his concern primarily with the *motivational aspect* of interaction with student(s) in the teaching-learning process. This is confirmed also by the following dialogue:

M: right ... for you then... this issue of removing from the student... in order to do... to show... right? is linked... the student tries a little... and then you notice... you go there and you remove it from him to demonstrate it... and for you this is linked to the issue of motivation... is that right?
T2: of motivation... I see more the issue of motivation

Bearing in mind that the teacher from the Industrial Maintenance Technology Course is much more concerned in his discourse with the temporal aspect of his professional gesture than with its motivational aspect, which only emerges in the background of his utterances; and considering that the situation is reversed in the case of the teacher from the Electrical Engineering Course: he is much more concerned with the motivational aspect of his professional gestures than with its temporal side, which remains – in its turn – in the background; the mediator, in another meeting with the teachers, in order to continue the work of crossed self-confrontation, seeks to lead each of the teachers to highlight in his remarks the very aspect that each of them somehow "overlooked."

It followed from this initiative that the teachers *became aware* that they do not and may not consider in their action only one of the two aspects independently of the other. This leads the gesture to be configured and situated in the classroom time and space precisely the way it is configured and situated: a professional action that aims to handle, at the same time, both the *temporal* and the *motivational* aspect.

Here is how it happened in the case of the teacher from the Industrial Maintenance Technology Course:

T1: if I didn't remove it and the student maybe didn't manage to light the torch... there would be frustration ... to the extent that... to the extent that... either a classmate who is next in line... waiting for his turn... may tell the other to get out... or even before that happens... the student himself may turn everything off... put the equipment down on the workbench and in silence get out and go to the end of the line and... somewhat angry right? because he could not do it...

Let us now see how it took place in the case of the teacher from the Electrical Engineering Course:

T2: for me... they are interconnected... you need to manage your time for motivational reasons... right?... or you will let the student try until... but there is the question of time... time itself... then... but let's take it from the didactic point of view... I think the two are linked... you have to be balancing time with motivation you have to be watching out for this... and this is what is so often complicated...

We notice, as indicated by our analyses in cooperation with the teachers, that the temporal and the motivational aspects correspond indeed to two faces of one and the same professional teaching gesture.

Last remarks

We can say that the initiative of removing the instruments from the hands of students corresponds to a professional teaching gesture that, after being constantly worked and reworked by teachers over time, manifests itself as a relatively stable type or form of teaching action that seeks to reconcile – and does reconcile – two contradictory opposite poles or currents: one which concerns the management of the short time for classes with groups whose number of students is too high (how can a teacher save time without frustrating and demotivating students?) and one which concerns the management of the motivation of students who find themselves in difficulty in classes whose duration is too short in proportion to the group size (how can a teacher keep students motivated without being able to dedicate all the necessary time to each of them?).

We come to the conclusion that, in the teaching and learning situation of the laboratory of welding processes, the teacher cannot remove the instruments from the

hands of the student neither too early – because it would mean to privilege the temporal aspect and the student would consequently not have a realistic chance of successfully executing the operations; nor too late – because it would result in the privilege of the motivational aspect and he himself would lack time to devote to other students. Our studies and researches have shown that contradictions such as these are not resolved immediately by the teachers because their resolution depends on an arduous development process of professional gestures, which should take place according to uninterrupted regulatory cycles of theses, antitheses and syntheses, in a dialectical process orchestrated by the teacher.

As for the gesture of removal of instruments from the hands of students, these cycles appear to occur approximately as follows: 1) the teacher may initially be guided by the thesis that class time is short and that therefore he must immediately remove the instruments from the hands of students if they have difficulty handling them; 2) there may occur teaching awareness that this procedure ultimately demotivates students because thus they do not have sufficient opportunities to succeed on their own initiative; 3) the teacher then comes to a new thesis, which – by replacing the previous one – corresponds to an antithesis: “I must let students practice handling the equipment until they are successful”; 4) there may occur new teaching awareness that this new procedure eventually consumes too much class time and consequently all the students do not have the opportunity to practice handling the equipment; 5) the teacher may return to the first thesis (now the antithesis of the antithesis), which – subsequently – after new awareness, is abandoned so that there can be a new return to the second thesis (now the antithesis of the antithesis of the antithesis) and so on, in an uninterrupted movement of regulatory oscillations which are directed to and result in the synthesis or short-circuit of opposite poles (VYGOTSKY, 1971, p.142; 214): a professional gesture that allows the teacher to manage class time by motivating students and to motivate students by managing class time.

In this development process situated in the space and time of classrooms or of professional practice laboratories, similarly to what we have witnessed in situations of simple and crossed self-confrontation and on other occasions, teachers debate with themselves, struggling on the lookout for gestures that respond more appropriately to their work circumstances, in a process of activity regulation that is mediated by

language and that clearly manifests its dialogic, argumentative and developmental dimensions. We understand it is necessary to help out teachers who may, for different reasons, have stopped this process. The use of the simple and crossed self-confrontation method seems to be an alternative.

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Received November 29, 2012

Accepted May 24, 2013