The mediation in distance learning: possibilities of mapping the signs

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Abstract: In distance learning, flexibility of teaching requires an active positioning of students and teachers, which by means of mediation mechanisms established by social interaction, allows the development of students autonomy aimed at their learning. This process has been a study focus for the last ten years, but these studies have little impact on how it is possible to detect evidence of the mediation processes in linguistic contexts. This paper aims to verify how mediation mechanisms can be revealed in the linguistic context of distance learning environments.

Keywords: Mediation, linguistic context, social interaction, Distance Education

1. Introduction

The flexibility of teaching and of learning promoted by Distance Education requires an active position by the student and the teacher with social interaction and which establishes mediation mechanisms which develop student’s autonomy for his learning.

Learning, mediation and communication are intimately related and become central aspects in the process of quality distance learning. Research studied²

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shows, from the educational standpoint, the role of the mediator is important not only to pass on knowledge, but also for the autonomy of the student. But this role is far from being seen as a stable and homogeneous character, but represents changes and adjustments in accordance with the educational context as well as the needs of the student. In this form, the mediator professor needs to take into consideration during the planning and the subsequent assignments, the organizational aspects and its content such as the teaching methodology and strategies that permit growth in the mediation process adopted for the students and their needs.

This process is filled with intense moments of interaction and specific mediation mechanisms that have been somewhat based on the specific studies of Distance Education which generally remain under the control of the teacher. Good teachers carry out quality mediation and guarantee the success of the educational process in general. However, these processes are accustomed to being implied and even intuitive.

Therefore the object of this article is to verify how adjustments in the mediation can be evidenced in the linguistic context present in the Distance Education environment. It is also an integral part of the research (supported by CNPq) that is investigating how the form of the mediation of the teacher can be shared by technological mediation forms to alleviate the teacher’s workload and to help the student in the process appropriate for him (Passerino et. al, 2007).

2. Mediation and Educational Context

To comprehend how the process of mediation happens, we look at the principal concepts of social-historical theory to characterize and define mediation in virtual learning.

For Vygosky (1998) man’s actions have created physical changes in the world and also psychological changes which affect man, himself. This same author states that it is through elements (instruments and signs) and the process of mediation that occurs the development of the higher psychological processes (HPP) or Cognition. Vygotsky (1998) considered that HPP begins development during the life of the individual the moment that he begins to participate in social interactive situations, in which instruments and signs are used to organize and structure his environment and his thoughts.

Human activity can only be understood if we consider the instruments and signs that measure human activity itself. These forms of mediation aren’t conceived like factors that facilitate the activity, but configure and define the activity, or, as it can be seen that without these factors, the activity would be qualitatively different (Wertsch, 1993). In development, HPP, the signs are internalized in such a manner that HPP “incorporates in its structure, like a central part of the whole process, the use of the signs that has half the function of
orientation and control over our psychological processes” (Vygotsky, 2001, p.161). This internalization is a process of control over the external signs and is not copying or imitation (Wertsch, 1988), and is a result of cultural transmission “that permits each organism to save much time and energy, not to mention risks, in the exploration of knowledge and skills that exist in the co-specific” (Tomasello, 2003, p. 4-5).

This cultural transmission is important because we learn “through” the others. So that, not only we learn from artifacts and social practices, but also from problems and situations for which they were developed. In this form, the artifacts and practices point higher than themselves (the physical world) and point to the psychological world with its intentions and beliefs, its mental representations of our pairs conforming with the generally dominated process of mediation.

Mediation, from this point of view, is a dynamic process in which tools and signs intervene in an action that has the capacity to model the action but not to determine it. Well, “{...} a more sophisticated analysis of these tools cannot, by itself, tell us how they are accepted and used by the individual to carry out the action” (Wertsch, 1998, p.29). Therefore, mediation is the process that involves the potential of the tools to model the action and the use of these tools by the individuals. But, “to be included in the process of the behavior, the psychological tool must alter the flow and the structure of the mental functions” (Vygotsky, 1981 p.137, apud Wertsch, 1998, p.29).

Mediation culminates the internalization that is defined as “...a growth and human learning process with the incorporation of culture such as the culturally acceptable ways to act, think, and relate with others, with ourselves, and which appears contrary to a natural perspective or an innate one” (Smolka, 2000 p.27-28). In this manner, the meaning of internalization is “outside/inside” which should be taken as individualistic and in this aspect, the author proposes to appropriately use the term as a synonym that gives the Idea of transformation, of significance, and not merely a literal transferring. “Appropriation is not only a question of possession, of property, or really of control individually reached, but is essentially a question of belonging and participating in social practices. In these social practices, the subject himself is a sign interpreting and being an interpreter of relations with others and does not exist before or independently of others of the sign, but evolves if these relationships are significant” (Smolka, 2000, p.37).

For Tomasello (2003), mainly, the participation of triadic interactions called joint attention, that promote development and domination over the subject’s actions.

The scenes of joint attention are scenes in which itself requires a coordination of interactions between subjects and objects resulting in a reference triangle

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3 For Wertsch (1998) the human action can be internal as well as external, individual or in a group, but all action has a psychological and socially cultural dimension.
composed of the subject A, the subject B and an object or event to which they pay attention. The scenes of joint attention are complex social interactions, not just perceptual scenes, while focusing on some aspects of the perceptual world. And events are not merely linguistic or communicative, because it contains more things than it is explicit in language symbols. In a scene of joint attention the subject needs to identify himself as the intentional agent and "... provide the context in which it gives intersubjective the process of interaction." (P.137).

One of the actual problems of social-historic researchers is to accompany and understand this process of mediation. Some researchers identify the existence of mechanisms which can identify the internalized sign and then follow the subject’s cognitive development (Diaz et al., 1993) (Gallimore; Tharp, 1993) (Wertsch, 1999). One of the possibilities to analyze the process of internalization was a proposal by Passerino (2005) which suggested dividing the process of internalization into 3 sub-processes: control, self-control and self-regulation. Being that internalization can be properly said to occur between the stages of self-control and self-regulation.

In the Control category, the more experienced subject is responsible for his actions and giving himself limits in the initial process of appropriation through direct or indirect control. Direct Control: Seen by Orders (the imperative type “do it this way” or “click here”), Directives (more polite orders where the subject feels a part of the communication process “let’s click here”), Direct Questions (questions where the order is implied “Can you click here?”). Indirect Control: through perceptive questions (questions whose answers are found in the perceptive area – what is the color of this picture?); through conceptual questions (questions that cannot be answered only by their immediate perception but require mental thought processes or objective actions – “what do you do next?”; “what is the difference between these objects?”; through gratification (rewards) (“Very good”; “That’s it!”); through direct abdications (now, do it yourself); through passive confirmation (the more experienced subject responds to the given questions and confirms the actions or not of the less experienced); through physical distancing (the more experienced subject is left alone, the less experienced is observed and is helped only if need be. This dimension is already related to the self control process.) From the point of view of the student, the control (direct) reflects in the imitation, the verbal responses to the more experienced subject (direct and indirect control), the questions asked to the more experienced subject (indirect control), and the verbal communications related to the task at hand (indirect and self control).

The category of Self Control consists of the realization, by the subject, of an expected action according to an internal tutor. So, the representation of the more experienced subject who was real and external before the proceedings, now is internal. In this case, there are also exists two dimensions: Direct (direct imitation, modeling, and speech driven by a more experienced subject) and Indirect (verbal directions given to the subject by himself). In last place, the Self Regulation is a plan of action conceived by the subject that becomes his own internal tutor,
transforming the mediation sign into appropriate concepts and internalizes it. The central difference between self control and self regulation is not in the internalization of the orders or the directives of the tutor but in the capacity that emerges in planning and defining the subject’s own objectives, functionally organizing his own behavior and adapting to whatever context is needed.

Following is the mapping of the categories and the identified dimensions in the analysis of the speech of the mediator as well as the students and their relationship.

![Map of the categories of the Mediator Action and its dimensions](image)

3. Mediation and evidences: methodological implications

The mediation demonstrates the great importance in the development of the educational process. The data collected from the empirical research shows that from the pedagogical viewpoint, the students that find themselves in the Control category are the ones that need the most attention during the mediations established. The role of the mediator and its adjustments in assistance offered to the student within identified categories of control, self control, and self regulation are important for the student’s autonomy and ownership of knowledge. It is important to point out that each student could pass through all of these categories or only a few of them. However, we do not always learn in phases and sometimes it is not a linear process.
In the educational process, often, “adjustments” in mediation are made in progress of work. The monitoring and regulation is only possible after “reading” the inter-subjective context that is established in social interaction which contains in addition to language elements, extra-linguistic factors that contribute knowledge about the definition of shared situation.

However, in Distance Education it is widely known that a highly structured platform interface which forces an explanation of the situation tends to leave the extra linguistic aspects practically undetectable and fundamentally dependent upon the significant attributes in the linguistic context defined by the participants in the environment of Distance Education.

For Andrade (1998), this definition of shared situation is resulted in what is called the environment. The environment is an element which circumscribes a linguistic activity. The environments are not only present but are also special guides towards discussions which are like a type of background effectively contributing to the realization of the discussion, its significance and its actual meaning. Following Coseriu (apud Andrade, 1998) there are four types of environments: situation, region, context, and universe of discourse.

For this situation, we understand only that circumstances and temporary space relations affect the communication between the speaker and his counterpart. In our study of the situation, there are specific interactions within the environment utilizing some communication tools such as the e-mail, forum, etc. The region is a space in which a sign functions in a specifically determined system. In our study of region, there are no limitations based on the environment of Distance Education. The context is related with the total reality which involves the verbal activity and is divided into three parts: idiomatic, verbal, and extra verbal. The first is the language utilized in speech and communication. The verbal context is the specific discourse and the extra verbal is the combination of the extra linguistic circumstances which are perceived or learned by the students and is everything that is physically or culturally involved in the act of conversation. The context of extra verbal can be divided into:

- Physical Context: Objects that are present
- Empirical Context: Composition of the state of the objectives known by the person emitting the information and announcing it
- Natural Context: All the possibilities of the empirical contexts of the participants
- Practical Context: Subjective or Objective conjuncture of the particular discourse
- Historical Context: Historical circumstances known by the participants
- Cultural Context: The culture in which the participants live

In the majority of the current platforms in Distance Education, the context of the interaction represented and which permits the creation of a definition of an shared situation is merely the verbal contexts, leaving the extra verbal contexts
outside of perception. This presents two problems. First, all interaction is centralized principally on the written discourse, or the linguistic elements, leaving the extra linguistic context restricted to some verbal markers such as punctuation marks, empty spaces, paragraphs, etc. (Andrade, 1998; Oliveira, 2006). Secondly, this presents a temporary phase shift against the flexibility of temporary space and modality and what the distance permits. This temporary phase shift is largely responsible for feelings of failure, frustration, anguish, and anxiety which online students feel (Palloff; Pratt, 2002; 2004).

One of the reactions which “extended time” provokes is the considerable increase of time online which creates an excess of information which is also called “info glut” which provokes a huge work overload on the part of the students as well as the teachers. Our research especially focuses on the investigation of how to diminish the teachers workload, which according to Palloff e Pratt (2002), reaches between 18 and 20 hours weekly for each subject being taught, which would be the equivalent of one subject in the classroom equaling four hours.

The basic hypothesis of this present research is that the categories of control, self control and self regulation presented earlier can be applied productively in the analysis and adjustments in the mediation processes which are being used in the environment of Distance Education.

Beyond trying to help in the comprehension of the mediation process in the environment of Distance Education, we hope that these categories can serve as a basis for the construction of tools for the environment of Distance Education which helps the teachers as well as the students reach productive mediation processes, from the pedagogical viewpoint.

For this to occur, methodologically, it was necessary to categorize the students’ speech and the mediators’ speech in the tools proposed for the course analyses. After selecting the tools of the distance learning environment in question (forum, portfolio, diary, and e-mail), we initiated the process of identifying the discussed categories and distinguishing them in the table below based on the said discussion:

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<table>
<thead>
<tr>
<th>Distance Learning Environment</th>
<th>E-mail</th>
<th>Portfolio</th>
<th>Diary</th>
<th>Forum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediator</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speech Analysis</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Categorization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creation of Table</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2 Mapping the Methodology of the Work
Each table, like the outline represented below, contains a tool, a category and their respective speech outline. The same methodology was applied in the creation of the tables for the mediators as well as for the students.

Table 1: Outline of the Categorization of the Speeches with the Tools Analyzed

<table>
<thead>
<tr>
<th>UNIT OF ANALYSIS</th>
<th>DIMENSION</th>
<th>CATEGORY</th>
<th>INDICATORS (OUTLINE)</th>
<th>TOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEDIATOR</td>
<td>Control</td>
<td>Direct</td>
<td>Orders</td>
<td>FORUM</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>Indirect</td>
<td>Gratification Order</td>
<td>DAILY</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>Direct</td>
<td>Order</td>
<td>E-MAIL</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>Indirect</td>
<td>Perceptive Question</td>
<td>PORTFOLIO</td>
</tr>
<tr>
<td>STUDENT</td>
<td>Self control</td>
<td>Direct</td>
<td>Speech directed to mediator</td>
<td>E-MAIL</td>
</tr>
<tr>
<td>Self regulation</td>
<td></td>
<td></td>
<td></td>
<td>FORUM</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>Indirect</td>
<td>Perspective oriented questions</td>
<td>PORTFOLIO</td>
</tr>
<tr>
<td></td>
<td>Self control</td>
<td>Direct</td>
<td>Model</td>
<td>DAILY</td>
</tr>
</tbody>
</table>

To show the indicators in each category we constructed quantitative and qualitative tables which permit the analysis of the complete process until the present. With this we have obtained an overview of this area.
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4. Analyzing the Indicators and the Research Perspectives

The tools utilized in virtual environment are diverse and are put into action differently based on distance learning environments. However, we can discuss here the functions and possibilities of mediation which have been evidenced as most efficient: e-mail and portfolio.

Both tools have been used very much by both teachers as well as students to establish contact and feedback, asking for direction and clarifying doubts. The analysis shows that the portfolio tool does not establish a symmetrical form of mediation. However, e-mail establishes a symmetrical form of mediation. Each tool was analyzed in function with the categories mentioned in the research of the mediation evidence by the process of categorizing the speech of the students and the teachers.

In a preliminary analysis of the quantitative and qualitative tables, it was possible to perceive, from the student’s viewpoint, that the e-mail tool was a much more significant mediation in the direct control and indirect control categories indicated. Asking for help and verbal responses from the mediator were evident in various moments. Indicators of direct auto control by the student indicated by the speech from the mediator shows that this process of mediation is discussed until now. While the indicators of direct auto control are evidenced in the students, it is different with the mediator. In the speech from the mediator appear indicators of direct control and indirect control and in all subcategories are evidenced. In regards to the e-mail tool it permits different types of mediation, this favors the students’ drive for auto regulation.

With the portfolio tool, when comparing the tables, we can see there is a huge discrepancy in the quantity of speeches, in some different categories, created by the mediator in relation to the students’ speeches. The portfolio is a tool which is characterized with more material available in the distance learning environment with the possibilities of commentaries by all the participants, which is also seen by all the users of the environment. Surprisingly enough, this tool does not establish mediation indicators in a symmetrical form. We see that on the part of the student, only a few indicators of direct and indirect auto control were marked. However, on the part of the mediator, there were many evidences (see Table 2) in the categories of direct and indirect control, principally in respect to gratification, orders and direct questions. This indicates the preoccupation of the mediator to mediate in various forms of learning by the students in the environment in question.

Table 2 – Analysis of incidences from the categories for tool: Portfolio/Mediator

| ANALYSIS TOOL: PORTFOLIO - MEDIATOR CATEGORIES |
|-------------|--------------|--------------|-------------|--------------|
| PRINCIPAL CATEGORY | DIRECT CONTROL |
|                | Model | Directives | Direct Questions | Orders | Direct Correction |
As the Portfolio is a visible tool for all users of the environment, the possibility of mediation between student/student and student/mediator by itself only contributes to the internalization of the objects studied. However, without the evidence of the linguistic context in the following of the learning process, there is not always mediated. So the importance of the mediation and its adjustments is for the student himself to strive for auto regulation.

Therefore, we can say that the e-mail tool demonstrates symmetry between the actual mediations used by the mediator and the student. With the portfolio tool, the mediations on the part of the student indicates that he is waiting for responses, such as gratification or corrections by the mediator, without other more relevant indicators. This appears to indicate that in the process that automatically identifies these indicators has a more important place than the others to develop heuristics which contributes to the development of the inferences in the system of mediation (this is the next phase of the research) and the mediation that passes by all the environments. The search for evidence is only possible if centered on these players, relating to the utilized tools.

The qualitative evidences indicate a presence of the conversational signs in the mediation and that at the moment, are being mapped to constitute the body of knowledge which feeds the inference system called bayesiano which will have as its auxiliary objective, the detection of the categories of mediation as well as the growth of the effective mediation strategies which contribute to the technological mediation in distance learning environments.

References


