PEDAGOGICAL ARCHITECTURE IN THE TEACHING PROCESS

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Daiane Grassi
UFRGS – daianegrassi@gmail.com

Marie Jane Carvalho
UFRGS – mariejanecarvalho@gmail.com

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ABSTRACT

This article presents a study performed at the Pedagogy Distance Learning (PEAD) course of UFRGS, currently underway. Approaching a new educational concept, named pedagogical architectures, this work presents the *"pedagogical architectures for distance education: scenery, prospects and a brief dialogue"*. As a follow up for "the `case` against divergent perspectives", two ideas support the concept and their consequent interactions in the dialogue as an example of such architectures. Followed by **"final considerations, despite provisional and in motion"**, the **"essay"** describes the challenge itself while the **"reports"** account for the procedure and analysis. The objective of this analysis is to bring to light the first steps of a possible pathway, rather than judge its right or wrong aspects.

Keywords: Pedagogical architectures. Pedagogical practice.

1 PEDAGOGICAL ARCHITECTURE IN THE DISTANCE TEACHING PROCESS: SCENERY, PROSPECTS AND A BRIEF DIALOGUE

The concept of pedagogical architectures – Pedagogical Architecture (AP) for distance education has been explored in the educational context since its creation, in 2005, by the researchers affiliated to the distance learning mode of the Faculty of Education of UFRGS (CARVALHO, NEVADO, MENEZES, 2005). However, due to the fact that it is something new and in progress, it is

open to different interpretations. As a result, we have tried to enhance several points of views of the academic world, so as to contribute to the reflections made in this area. The first discussions on the need for "a new educational paradigm" emerged from the concerns of the authors Carvalho, Nevado e Menezes (2005, 2007, 2009 a), with respect to:

> (...) Programs and educational strategies designed as teaching tools without support in interdisciplinary curriculum theories that have little impact on teacher training and, hence, on the modification of school practices. The most common effect of teaching tools without the theoretical contribution is their use as "recipe", or more like a novelty, which might soon be discharged. (...).

Since then, studies and teaching raids have been carried out by the three authors in their search of strategies that support the need for a new paradigm, extensively advocated and digested by Paulo Freire in his Pedagogy of Autonomy [FREIRE 1999]. Articulated under Freire's perspective, these thoughts come across another author, Jean Piaget. After a series of articles, studies and workshops in the area (2005-2009) the same authors published a revised and detailed version in the book Network Learning in Distance Education, chapter 2: Architectures for distance teaching. Therefore, in addition to emphasize the assumption of a Pedagogical Architecture, it also highlights that:

> (…) learning structures designed from the confluence of different components - a pedagogical approach, educational software, Internet, artificial intelligence, notions of time (...) getting to a work built on the subject's experience and demand for action, interaction and meta-reflection on the data, objects and socio-ecological environment. From this perspective the curriculum comprehends the kind of pedagogy which is open to flexible, elastic and adaptable didactics, under different approaches (CARVALHO, MENEZES and NEVADO, 2007 p. 39)

Such line of though is based on the essential components of a pedagogical architecture: consistent pedagogical concept, methodological systematization and telematics support. Each of these elements is important and they do not excel each other. Thus, the agents of this process should aim at a balanced view of the items previously mentioned. Clearly, the focus of the concept created by these authors is the teaching context that is expressed in actions and content developed, aiming at their integration and implementation in

daily practice in a course at any level of education. Remarkably, pedagogical architecture is the crossing point between content and teaching practice that unfolds in the daily curriculum. The expression of this concept is related to the epistemology and to the pedagogical act, in the context of the emerging technologies. In their view concerning the same subject Behar, Bernardi and Silva (2009) diverge from the original approach. The authors record that: (…) a pedagogical architecture is defined by a system of theoretical premises which represent, explain, and guide how we approach the curriculum and that is experienced in pedagogical practices and teacher-student interactions on the object of study / knowledge. (...) In this point of view, the authors decide on the following priorities: organizational system, instructional methodology and technology. The interpretation given refers to the curriculum as a whole and not specifically to the epistemology of the pedagogical act, emphasized by Carvalho et al. (2007). From this point, it is necessary to establish a dialogue between the two perspectives. Such dialogue does not intend to launch a comparison between them, but to add important elements in order to build up further reflection and design a pedagogical architecture to Distance Education.

2 A DIALOGUE ABOUT THE DIVERGENT PERSPECTIVES

1) Elements of a pedagogical architecture for distance education according to Carvalho, Menezes and Nevado (2005, 2007 e 2009ª):	3) Elements of a pedagogical architecture for distance education according to Behar, Bernardi e Silva (2009):
Strong Pedagogical Concept: It relies on the assumption from the Pedagogies of Uncertainty, which synthesizes mainly, but not exclusively, the ideas of Paulo Freire e Jean Piaget. The Pedagogy of the Uncertainty is based on five principles: • Educate for the solution of real problems; • Educate to transform information into knowledge; • Educate for authorship, expression and dialogue; • Educate for research and • Educate for autonomy and cooperation.	**Organizational**: Among the organizational elements of the pedagogical architecture (PA) are all those intrinsically involved in the elaboration of a pedagogical proposal and its culmination. Noteworthy are the goals and purposes of distance learning, and the understanding of time and space (in this case guided by a virtual perspective), the profiles of those involved in the process - student, tutor and teacher, as well as the definition of their competences and skills. The organizational aspects need to be in line with the Political Pedagogic Project of the Distance Education (EAD) and the Institutional Development Plan, at the macro level and with the Course Educational Project, at the micro level, and the other assumptions that integrate the administration of Distance Education. The articulation of plans and proposals enables the feasibility of the outlined objectives. **Instructional:** The instructional aspects are related to what is being approached in class. As for the instructional elements, all forms and formats of scheme of teaching contents (print, scan, imaginary...) are taken

Methodological systematization: it is the confluence of the elements that enable students to access cognitively challenging activities and develop methods for interactive and constructive work. Examples of pedagogical architectures under this perspective: • Architecture of learning projects (example adopted in the case – 2nd column in this table); • Architecture of case study or troubleshooting; • Architecture of incident learning; • Architecture of simulated action. **Telematics support:** the technological resources used in these instances are an auxiliary craft in the process. The main resources used are Web 2.0 and several types of software.	into consideration. These can be available through computer resources (such as learning objects, educational software or web pages, hypertext) and other learning tools, be them isolated or aggregated. It is necessary to select the planned content, be it conceptual, factual, attitudinal or procedural, according to the interpretation given by Zabala (1999). This set of elements must be carefully defined, so that it is possible to build knowledge and develop skills from them. Thus, the importance of the process of content selection, especially regarding the construction of learning objects, so as to work them out with motivation and interest in the pedagogical application as a whole. **Methodological:** Among the methodological aspects that compose a pedagogical architecture are the activities, the forms of interaction/communication to be used, the assessment procedures adopted and the organization of this set of elements in order. Therefore, it is not only the selection of techniques, procedures and computer resources to be used in class, but also the articulation and structuring of the pedagogical proposal previously prepared by combining the elements to achieve the intended goals. Moreover, it is clear that this organization and the relationships formed here are likely to determine the characteristics of the pedagogical intervention. The ordering of the set of elements is determined by Zabala (1999) as a teaching sequence or a sequence of activities. Hence, it is noticeable that the elaboration, selection and organization of the methodological elements are closely related to the didactic assumptions defined for the application of the course pedagogical Project and, consequently, of its subjects. As previously mentioned, according to the legislation that endorses the practice of Distance Education, the evaluation must include a final in-person activity. **Technological:** They comprehend the definition of the technological platform and its functionalities, as well as the resources allocated to promote communication (synchronous and/or asynchronous), such as videoconferencing (Behar, 2007; 2009). Such virtual learning environments (VLEs) have been proposed to support the process of teaching and learning in distance education. It is remarkable, however, that each environment has been designed under the implicit or explicit premise of one or more learning concepts. It is important to note that the selected platform supports the pedagogical approach adopted, in consonance with the characteristics of the course and its disciplines.

Table 1: interface/dialogue between concepts and case.

The dialogue between these perspectives and the case point to the fact that care and cooperation are essential when one intends to think and practice a liberating education, as opposed to the prospect of banking education (style

fast food), mentioned in the works of Paulo Freire . While the prospect of the first column held a primary gaze on the pedagogical issues of such architecture, the prospect of the third column focused on the more bureaucratic aspects of pedagogy, here called managerial vision. The former emphasizes a handmade pedagogy, woven by the individuals involved, based on their needs; the second perspective emphasizes that in most of the courses developed under the Distance Education concept a pedagogical architecture should be formally adopted, formed by a planning proposal, which must involve a pre-definition of contents and other methodological and technological aspects of a course. The organizational, instructional, methodological and technological scopes are within a defined and significant framework of the subsequent practices, which determines greater institutional investment at the expense of a personal and autonomous investment of the educational agents, particularly for students.

3 THE TEST...

The following distance activity was proposed by the Integrative Seminar VII[i] to start the work on pedagogic architectures with the in-service teachers from the Polo city of Alvorada[ii].

> It is important to work in small groups, designing activities to be developed by students. The planning of such activities must necessarily take into account the material read and discussed in the SI VII and present at least three elements that constitute a differentiated work.

Thus, students organized themselves into trios and pairs; one worked individually. They started their construction work. The first calendar of challenges for in-service teachers included the creation of the architecture, testing and analysis and discussion of the action developed, from the production records and reports of students and teachers. However, because the proposal was made at the end of the semester (December), there were difficulties to implement practice in schools. In the midst of all the difficulties, some groups advanced significantly in their work, mainly in very creative

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i **Integrative Seminar:** The aim of the course is to break with the organization and establish interdisciplines to articulate the specific knowledge, theory and practice in each semester. This coordination is ensured by integrated workshops that take place every semester.
ii **Poles:** They define the physical area of coverage of the Course which considered the location of schools that would welcome the poles with the necessary infrastructure, usually maintained by the Municipal Education. The poles are designed to ensure to the students the use of information technology and communication.

negotiations with school principals, colleagues and students to suit the needs of a higher use of laboratories during the practice period. Yet, despite not having a chance to use the computer labs, others used creative technological alternatives such as photos, videos and more. The work done by the in-service teachers was guided by teachers and tutors so that three items were included: the use of digital technologies, theoretical basis, and methodology of work (with clearly stated objectives and goals, concepts to be worked and skills to be developed). Some groups chose to work with investigative challenges, others with readings and other collaborative textual productions. The systematic to be followed and the evidence in the writing of the architecture, as well as the details of the three items requested (technology, basic theory and methodology), were adopted by the groups. The case chosen for analysis does not reflect a successful model to be followed to develop an educational architecture. However it is a proposal that highlights the search for innovation by the in-service teacher, her anxieties, her self-criticism, fears and challenges that she had to overcame.

4 THE REPORT...

"The Report" confirms the challenges which concerned the in-service teacher, as well as the processes she had to go through in order to solve the problems or, at least, make an attempt to find a solution. The analysis of such process was based on the portfolio of the in-service teacher learning[iii], available on the web, through the blogging[iv] tool. Furthermore, this case was also presented by the in-service teacher at the in-person evaluation[v] workshop of the course. As the in-service teacher started posting[vi], describing her growing awareness regarding the learning process, the student highlights the challenge that she has been required to face.

This perspective is consistent with the proposed pedagogical architecture of the course: problem solving, autonomy and authorship. Under this perspective the student reflects that:

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iii **Learning Portfolio:** A report on the learning evidences of each student.
iv **Blog:** a site which allows quick actualizations through posting, in inverse chronological order, focused on a specific theme, and open to a varied number of participants, according to the blog's policy.
v **Assessment Workshop:** in-person presentation in which the in-service teachers shows their learning progress regarding the semester.
vi **Posting address:** http://malucostapead.blogspot.com/2010/01/lan-house-uma-aliada.html

> (...) On December 16 we would have to present something to show our development in the semester that was about to end. What to submit? It had been a frequent question in the previous semesters, but the answer was soon found. This time I could not find the answers. I thought about this question for a week. What should I do? I was very worried because I could not put into practice the 'pedagogical architectures' at the school where I work, because it lacked a computerized environment. And the concerns went on, because the internship would be based on such "architectures". Consequently, there should be a computerized environment, although most schools equipped with computerized rooms have no access to the Internet.

Facing the problem/situation of "not having access to a computerized environment, the in-service teacher considered some alternative solutions; however, as evidenced in her post, they did not seem to be appropriate. It was then that she decided to challenge her students: *"(...) let's do Internet research about the global warming? (...)",* the in-service teacher said this was a recurring topic in class and everybody liked it. In accordance with this report and the viewpoint of the pedagogical architecture defended by Carvalho, Nevado e Menezes (2005, 2007, 2009 a), the ideal situation would be that questioning and doubts had been raised by the students, from their interests. They should be led to think about current social and environmental problems until they can effectively process their questions, research and reflections... to the extension where knowledge is built. However, while challenging the students:

> Two students said they already had Internet access at home and set up their groups to meet there. Another student said she would spend the weekend at her father's, and so she could research and bring her findings the next class. Three students decided to go to a *lan house*[vii]. They asked if the lan house assistant was allowed to help them, once he had already helped them with the Orkut once. **Then I said:** - Why don't we all go to a lan house? – **How come?**! – They asked. Let's have our class at the lan house, I explained.

According to the in-service teacher, the students felt motivated by using this new feature. It was appealing and engaging. When doing research using the Internet, however, it is important to establish the focus on the research and the knowledge construction that it enables, rather than the tool itself. Methodology and planning are necessary too, in accordance with the pedagogical architecture. And it is crucial that the plan include involvement and

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vii **Lan House:** a commercial establishment where people pay to use a computer connected to the Internet and to a local network, as a main mean of information.

compromise from the students, so that they become the authors and coauthors of their own knowledge.

(…) Everybody was happy (…) remarks the in-service teacher. Working with something new can be really exciting to the students. The challenge and the responsibility that involved the task made the students plan the details of their future class at the lan house: how and when they would go there, how much they would have to pay, who would escort them... Such issues could have been worked out in the project. (...) the students left the school that day with great responsibility: schedule the activity and get a fair price (...). After choosing the lan house where they would carry on their research, they just had to wait for the day.

> At 2:00 pm I took 18 students to the lan house and asked a school assistant to come with us. The lan house assistant had managed to get more chairs, so everyone would be comfortable. Actually, I did not know how exactly to proceed; I was a little embarrassed because this was also my first experience at a lan house. The first thing I did was to explain about the webpage that they would access, which was like mine, and I showed my pbworks. They were amazed because they found their projects posted on the page. I allowed them to check the site to please their curiosity. I told them that to open the page we should have a group email and that was the first step. The first ones to make their emails were also helping others. Soon everyone wanted to check their emails and I let them do that. To facilitate access among the students the assistant removed the partitions between the desks. So I could move faster. Afterwards I showed them how to open the pbworks.

Establishing partnerships certainly is a key strategy for working with a group of students. Both the partnership with the lan house and with the students themselves ensured the success of the work. From this perspective, while reflecting on "The Report", assessing the positive or negative aspects of the project was irrelevant, rather than highlighting the awareness of the in-service teacher about her own process, especially because this analysis had already been done in her planning for 2010:

> But I managed to monitor what I had intended. My presentation would not be about the web page we had visited or the research we did, but on the experience we had. I resume the post title: Lan House, an ally? I think so. I know we spent only three hours on this project and it does not seem to be enough, but it really gives us an idea. Had we started earlier this year, there would have been time for us to first investigate and satisfy

> curiosity, then deal with the handling of the machine, with weekly or biweekly classes. I believe we can do a great work, with the participation of everybody.

Unquestionably the time they spent interacting in the computerized environment was very educational for the novelty of using technological tools in education. The reflection on the process, performed by the in-service teacher, should be seen as relevant growth, for after this experience she may become aware of the need of planning in stages: presenting the lab, setting the goals and negotiating them with students before actually starting a task. However:

> The world is constantly getting renewed and creating new ways for everyone to enjoy the innovations. Only schools stay behind without any innovation. Retraining teachers does not make any difference if they are unable to implement their ideas. If I had a notebook and a Data show I could teach wonderful classes. Geography would be fascinating. People here say that `dreaming does not pay taxes`; however, not being empowered to use the knowledge is very frustrating. The lan house assistant said he could connect the computers and thus facilitate access for students. I realized that negotiating with the lan house owners we could get more cooperation because we would be helping them to expand their business.

If it had not been for the basis provided by the PEAD, and the challenge of creating a pedagogical architecture with the students, perhaps this experience with the lan house would have not occurred. Given this:

> If we want to change this reality we have to act using the resources that are at our disposal, "Lan House, a great ally".

> *Post extracted from an in-service teacher.*

5 AND THE CONSIDERATIONS... DESPITE THEIR PROVISIONAL AND CHANGING ASPECTS

When taking into consideration the findings, despite being provisional and changeable, it is necessary to strengthen the educational proposal: to demonstrate how an experience with a course grounded on open and flexible pedagogical architectures creates opportunity for a new meaning in the practice of an in-service teacher PEAD.

The objective of the analysis was neither judge the right nor wrong aspects; nor does it present a model proposal of pedagogical architecture. The objective was to highlight the first steps of **a possible journey, as well as a possible new element to be observed in pedagogical architectures: the**

social involvement of the community. Under this perspective, how has the experience of a course based on open and flexible pedagogical architectures favored the re-significance in the practice of an in-service teacher of the PEAD? It happened by facing the problem and having the opportunity to experience a pedagogical architecture in the classroom, and through the course, PEAD, as a research, building knowledge and authorship, in contact with digital technologies as Internet, email and personal web pages. However, it happened mainly through becoming conscious of the experience of learning how to learn.

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