DiLCoS, a Distance Learning Collaborative System, and Eduline, a virtual learning environment: a possible production

DiLCoS, Sistema Colaborativo de Ensino a Distância, e Eduline, um ambiente virtual de aprendizagem: uma produção possível

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Abstract: This study aims at presenting DiLCoS, its composition and inspiring source for Eduline. Based on a virtual communal learning system conception, Eduline has been developed by a multidisciplinary team, considering users needs and expectations. Its implementation is progressive and its space for knowledge construction is based on educational strategies and specific field competence building. DiLCoS multidisciplinary communal teamwork conception inspired Eduline creators at FACCAT College according to global trends. As a result, POPEs – a bimodal Portuguese for Foreigners course – has been offered to the foreign community in Taquara, RS, and region. Different teaching, evaluation strategies are required, with other possibilities and competences in learning, favouring written productions throughout interactions registered in Eduline communication tools. Implications to Education, some advances and limitations, are here discussed.

Keywords: Information Technology and Education. Distance Learning System/Environment/Course. Multidisciplinary Teamwork. Evaluation Strategies. Learning Competences. Dialogic Relations.

Resumo: Este estudo visa apresentar o DiLCoS, sua composição e fonte inspiradora para a criação do Eduline. Segundo uma concepção de sistema virtual de aprendizagem comunitária, o Eduline tem sido desenvolvido por equipe multidisciplinar, considerando necessidades e expectativas de seus usuários. Sua implementação é progressiva e seu espaço à construção de conhecimento considera as estratégias educacionais e a construção de competências específicas. A concepção multidisciplinar e comunitária do DiLCoS inspirou os criadores do Eduline na FACCAT, de acordo com tendências globais. O POPEs – curso de Português para Estrangeiros semi-presencial, oferecido à comunidade estrangeira de Taquara –RS e região, foi desenvolvido no Eduline. Estratégias de ensino e avaliação diferentes são requeridas, com outras possibilidades e competências, assim como incrementos nas produções escritas registradas nas interações no Eduline, em ferramentas de comunicação do ambiente. Alguns avanços e limitações à Educação são aqui apresentados.

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Palavras-chave: Informática na Educação. Sistema/Ambiente/Curso de Educação a Distância. Equipe Multidisciplinar. Estratégias de ensino e avaliação. Competências na Aprendizagem. Relações Dialógicas.

1. Introducing the Distance Learning Collaborative System – DiLCoS and Eduline - a learning environment for developing online courses

The user community of the Internet will be in the mainstream of everyday life. Its demographics will look more and more like the demographics of the world itself … The true value of a network is less about information and more about community. The information superhighway […] is creating a totally new global social fabric. (Negroponte, 1995:183)

We propose a distance learning environment to be developed according to a system's view based on the organizational principle that all parts will add to the whole and that a distance learning system as a whole can be composed following such conception:

The systemic or organizational principle: links the knowledge of the parts to the knowledge of the whole, according to the bridge indicated by Pascal – I have as impossible the knowledge of the whole without knowing its parts and to know its parts without knowing its whole. (Morin, 1999:32)

We will call it as Distance Learning Collaborative System or DiLCoS hereafter. In its composition it shall have a multidisciplinary team with specific group strategies to take care of all the courses to be offered; it shall be an open learning environment where our students will interact, collaborate and/or cooperate with each other and with the teams involved, and where their degree of immersion will imply in their learning outcomes.

A shared and contextualized evaluation can be proposed as we believe that virtual students are co-responsible in their own learning processes. As follows, Eduline, a learning environment derived out of that conception will be presented along with POPEs, one of its ongoing courses. Finally, we will look into some implications of DiLCoS-Eduline-POPEs, on learning competence outcomes, advances and potentials to education in general as well as a few limitations. A possible virtual distance learning environment – Eduline – inspired by a complex system conception as DiLCoS, has been developed and implemented by a multidisciplinary team at NEO/FACCAT[1], according to the principles underlying DiLCoS. Eduline has been developed utilizing open source software such as PHP for its programming and MYSQL for its database. In addition, POPEs - Portuguese for Foreign Students – an ongoing course, designed in modules – is being offered in Eduline. It is here displayed as an educational project built with educational objects to be transformed, recreated, and eventually utilized in other education or language projects.

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[1] Núcleo de Educação *On-Line*, Faculdades de Taquara, RS, Brasil. *Website*: http://neo.faccat.br.

Figure 1: Eduline, the on-line education environment created at NEO/FACCAT

2. The multidisciplinary team and group strategies in DiLCoS-Eduline-POPEs

The multidisciplinary team involved in the design, production and delivery of courses in general and in POPEs in particular (including assessment and evaluation) comprises the following persons and their specific roles:

- The specialist, teacher or tutor: is responsible for elaborating the contents, the goals and objectives of the courses to be offered;
- The writer: gives to the program and related contents an adequate and easy to follow format for the specific groups of students attending to the courses, in agreement with principles, goals and objectives proposed for the courses and the DiLCoS-Eduline;
- The multimedia developer: is responsible for the generation of the various multimedia software to be used throughout the courses programs and activities;
- The instructional designer: is responsible for the technical and pedagogical format adapting the contents to the various learning groups, optimizing the materials utilization to the activities proposed, according to the collaborative approach.
- Web designer: deals with the developing of all Internet based programs needed for the course delivery over the Web and the interface with the visual elements displayed in the DiLCoS-Eduline-POPEs courses; also with the production of adequate graphic material to illustrate concepts. Figure 2, shows an example of a visual artefact displayed in Eduline (an activity of Lesson 3) created for POPEs.

Figure 2: POPEs, an activity of Lesson 3

- Linguist Reviewer: takes care of the orthographic and grammatical review of texts as well as with their quality and language adequacy according to contexts. In Eduline-POPEs both teacher and linguist reviewer is the same person.
- Administrative support: will take care of the printed material, their filing and distribution among other tasks.
- Technical support: maintains the effectiveness of the system operating 24h a day and 7 days a week; also provides the back up of all the on line materials.

The following strategies are thus necessary in order to maintain the DiLCoS-Eduline multidisciplinary team working collaboratively and in a communal, dialogic system:

- be involved in the same principles, objectives and goals;
- work in an integrated mode when planning the courses programs;
- assist teachers, students, and other non-technical/pedagogic people involved in the courses with their technical-pedagogic needs, permanently;
- follow the whole process keeping in mind the DiLCoS-Eduline collaborative/communal/dialogic proposal;
- assess and evaluate students as well as courses development team in agreement with objectives, emergent needs, adjusting them to the new coming stages; and
- have flexible and adaptable attitudes during course programming when necessary or possible, to keep the DiLCoS-Eduline system running according to its open conception and complex principles.

3. An open learning environment - a dialogic learning community

Moran (1998) mentions that the Web utilization for learning development provides the increase of linguistic, geographical and interpersonal connections:

with the linguistic connections, because s/he interacts with countless texts, images, narratives, colloquial and elaborated forms, with serious and popular texts; with the geographical connections, because s/he moves continuously in different spaces, cultures, acquiring an ecological vision of the city problems; and with the interpersonal connections,

because he/she communicates and gets to know closer and distant people, of his/her age and of others, on line or off line. (p.85)[2]

Through that interaction, students develop their cooperative/collaborative learning and working together, sharing information, interacting inside/outside the group dialogically. As Moran puts it, "Successful interaction increases learning" (p. 85).

In order to have a significant interaction among the participants and have them immersed in DiLCoS – Eduline courses fully it is necessary that the team that plans, designs and teaches its courses be well prepared and in tune with the underlying principles that sustain the system, the academy mission, and broader educational goals.

A few pre-requisites are then suggested for this multidisciplinary team to work in the same direction, specially: have the concepts of developing personal autonomy in relation with the group in mind while interacting with students, what has to be proposed in the course guidelines; consider learning a social and individual process that requires intensive and continuous effort between teachers and students, among students themselves, and students with their teacher as well as other team members involved in order to be successful; keep students connected and involved with the course, with the teacher and support team by delivering them continuous support and feedback to maintain their motivations and affections high.

3.1. Methodology

For each distance course there should be specified general and specific objectives, purposes and goals for teaching and learning, for knowledge production with confidence and competence.

From the DiLCoS-Eduline-POPEs standpoint it is relevant to specify the target public, defining the learner profile for which the course is addressed; also the nature of the course, whether graduation, extension, post-graduation; number of vacancies; application, selection, enrolment process; pre-requisites such as list of subjects, themes, topics; also evaluation procedures and a list of modules the participant should have and know beforehand.

For each module it should be specified the objectives of the module, a list of activities, with clear indication of the compulsory and the elective ones; necessary software; main articles and support articles (elective); interesting links; other resources such as PowerPoint presentations, audio/video-clips, animations, Flash, among others.

Each topic can be associated with self-evaluation formative evaluation activities. These activities constitute a type of evaluation with questions and immediate feedback for the answers, a teaching while correcting technique. Self-evaluation consists of a system of quality control which can be verified in a certain stage of the teaching-learning process, the effectiveness or not of the process; if the process has not been effective, it determines which changes need to be done to assure its effectiveness before it is too late, characterizing a systematic and continuous process (Tarouco, 1999).

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[2] Moran's quotations are originally in Portuguese and have been translated into English by Janete Sander Costa.

Tools that are to be available at the DiLCoS-Eduline system can be: chat room; e-mail; searching tools in the database of the learning environment; log book; forum; collaborative writing/authorship tools, such as EquiText, Forchat, EccoLogus, Etc,[3]; real transmission (video and audio) of specific lessons; ICQ or similar tools; schedule; among others. They allow students to produce their written assignments, promoting new conditions to authorship and meaning. Bakhtin (2004) enhances the importance of such text production and communication when he states that:

> All the diverse areas of human activity involve the use of language. Quite understandably, the nature and forms of this use are just as diverse as are the areas of human activity. […] Language is realized in the form of individual concrete utterances (oral and written) by participants in the various areas of human activity (p.61).

Oral lessons throughout DiLCoS-Eduline-POPEs spaces have been transmitted in real time mode and made available in the learning environment to all students have free access to them. They may download them in their own computer for extra studies or practicing.

There is also available a tutoring learners' support service, seven days a week, including week-ends and holidays. The number of learners per tutor range from 25/30 to 50). The attendance can be addressed by asynchronous (e-mail, forum, discussion lists, fax) or synchronous ways (chat, videoconference, telephone). Assessment and evaluation should be continuous, interactive, shared and open. Students interactions are made available in our DiLCoS-Eduline, for instance, through e-mail, ICQ, teachers', tutors' and students' homepages. More specifically at Eduline-POPEs course: individual mail and group list, downloading students personal work with open access to entire group, pedagogic and specific course tutoring, technical support; telephone communication when Internet is interrupted. According to Figure 3, as below, this written event in the forum displays partly an episode where student T is presenting his opinion to the teacher about an earlier experience he and other students have had while visiting FACCAT College facilities.

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[3] *EquiText, Forchat, EccoLogus, Etc.*, are registered software created and developed in the educational laboratories as follows: Laboratório de Teleducação, coordinated by Prof. Tarouco; LELIC, coordinated by Prof. Axt; NUTED, coordinated by Prof. Behar, respectively, at the Pós-Graduação em Informática na Educação, PPGIE, Universidade Federal do Rio Grande do Sul, Brazil.

Figure 3: Student T presenting his opinion on a visit at the College.

4. An evaluation proposal

With the great evolution of the teaching methodologies, new forms of learning, and learning through via the net at distance, here we are again questioning ourselves about evaluation. Thus our concern focuses not only this matter but also how innovative our distance learning system can be when it comes to evaluation. After examining a few virtual environments, we elaborated an evaluation proposal for our DiLCoS-Eduline-POPEs:

- effective participation in the discussions showed by the number of posted messages (Forums), relevance to the discussion (teachers' reports) and the number of messages-answers generated by students' contributions;
- construction and updating of a web-folio (in HTML) and a log book, where students' reflections and course assignments can be registered, assessed and evaluated for their relevance and discussions generated;
- conceptual maps in the learning evaluation stage and in the search of new information in hypermedia software. Those are useful tools, concise and effective, being used as links for the construction of wider meanings, enabling new produced knowledge; and
- shared evaluations in a cooperative and collaborative way being more effective.

If work is performed with students in an interactive, dialogic, shared mode, evaluation should not be different. We are just being coherent with the proposal and principles of our DiLCoS. Also trying to follow and apply those principles in Eduline learning environment a creation by NEO/FACCAT, especially with POPEs, the Portuguese for Foreigners course.

Such a methodology implies as a result more cooperative and constructive interventions from all members involved. Positive attitudes dialogically expressed are expected: students' enquiries and suggestions are welcome and are to be considered for future implementations in software improvement. Thus, evaluation will necessarily be a joint effort and learning not only measured by quantified levels but also qualitatively according to the new competences outcomes applied either to real life or to the simulated situations offered in the virtual learning environment.

5. Implications of DiLCoS-Eduline-POPEs to education: advances and limitations to the learning process

From the general context of distance learning seen as a system, old and somehow current patterns will have to give way to other decentralized ones which will be open to interactive dialogic relations and collaborative/cooperative practices. It seems to be advisable to teachers, specialists, or mediators, as well as students and all other team members involved in this whole learning system to be more co-responsible and flexible. In this view, our DiLCoS-Eduline-POPES may present advances and limitations when it comes to its actual utilization.

We consider the following points among others as advances for the proposed learning system:

- all the constituent parts of the system have equal importance in such a collaborative environment: the team members, the tools, their potentials and productive capacity, the pedagogical strategies supporting them and above all the students' needs and emotions;
- all parts shall be open to know how to deal with and to be ready to learn by doing how to interact in this virtual collaborative learning organization;
- the system and all the parts involved will need to exchange information in a multiple mode: from the one to one exchange to the all to one and to the all to all. Each participant in any level shall work in a co-responsible and flexible way;
- a communal sense of learning prevails over isolated attitudes. Newer implementations in Eduline-POPEs, for instance, can be derived from students' comments, other needs specially arisen from cultural differences.

For the limitations of DiLCoS-Eduline-POPES, we believe that it may well demand additional work and uncertainties to all parts involved, either to the students, specialists, pedagogical and/or technical support. In this view, we pinpoint a few questions to be seriously thought about when adopting such a distance learning system:

- not all the people involved (students, specialists, technical and pedagogical support teams as well as teachers/tutors) are prepared for distance learning courses in a cooperative/collaborative, co-constructive way. Some students are not used to or willing to sharing at distance or are very much afraid of participating in an openly mode;

- software utilized shall be chosen according to flexible and adaptable programming following the courses proposals; also the group needs, assignments and assessment;
- not always students know how to use groupware properly and get the support they actually need or expect to have;
- not always peers conform to the rules established by the group or by the teacher causing as a result some kind of isolation, shyness, even rejection or desertion;
- individualities will have to give way to group decisions - on a collaborative basis - and this can be difficult to sustain.

In support to our DiLCoS-Eduline-POPEs we mention Leite (1999), who highlights positive points of such a virtual distance collaborative learning system despite the ever present difficulties. As a "utopia" for a successful DL, the author pinpoints that:

- the teacher when s/he knows a DL system, s/he assumes her/his project: s/he falls in love with the good results and quality;
- there is an openness in the teacher's vision of the world with a great renewal in the pedagogic quality of the whole team involved;
- team-work practices, as they happen, they also increase scientific production and the spreading of interdisciplinary tasks;
- it increases the number of people being assisted without decreasing learning quality;
- the student centered learning stimulates searching and produces better results;
- either public or private it is reachable to workers that cannot be in regular classes;
- the continuous education is enlarged and gets faster;
- it propitiates faster and wider cooperation among groups and institutions located in other geographic areas;
- there is an increase in interdisciplinary work and less group patronizing;
- evaluation is valued for and wanted by the materials producers;
- teaching interiorizing can become faster due to the rupture of time and space concepts interlinking teachers, tutors, students, and staff support on the Web.

From our reflections, we believe that a DL environment, such as DiLCoS, should offer possibilities of developing the students' hypertext authorship (creation, construction, and publication of pages in HTML, PHP, Flash, and others).

Besides, the classic resources of interaction as in discussion lists, forums and chat rooms, among other interactive, dialogic tools, it is also relevant to evaluate the possibilities of the so called "blogs". They have the structure of a diary that can receive comments which configures a quite interesting space for collective authorship, meaning producing and conditions for new authorship productions making it possible to have peers, teachers, support and pedagogic teams in mutual and collective relationships.

Finally, what is important in this dynamic environment and is the process of learning on the utilization of as many resources and techniques technically possible and available. It is also worthwhile to find out about students' diverse possibilities, mostly by their contributions they may give to the course after having discussed among each other - through the various media made available to them -, suggesting better practices for what has been initially proposed.

We propose an open program with the main guidelines delineated where new learning paths can be and might be built communally, in each stage of any course, where teachers and students shall be ready to move forward in the richest dialogic way.

Our DiLCoS-Eduline-POPEs is an attempt towards offering learning conditions with quality and competence in a virtual communal environment. People who join in a system/environment/course as here presented may look for similar objectives and have their expectations fulfilled if open to work in a collaborative, flexible mode. They may find particular ways for solving their learning questions and needs with the support of a multidisciplinary team. We believe that students and whole team involved will be able to experience various learning proposals and hopefully achieve their personal goals.

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