

# A CRITICAL ANALYSIS OF AN INSTRUCTIONAL PROJECT OF A VIRTUAL DISTANCE COURSE

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## Abstract

*This article examines a Project of Instructional Design for the implementation of a distance course using the internet. Initially, the paper describes in a brief manner the proposal of the of the online course of Information Systems in Organizations, to be offered to undergraduate students of Business Administration at Faculdade de Ciências Econômicas, Administrativas e da Computação Dom Bosco, situated in Resende, RJ. The study considers all the general data of the course that is part of the instructional project, as context, schedule, budget, audience, content, communication and interaction forms, evaluation, and design features, among which we have the map of activities, the storyboards and the matrix of instructional design. At the analysis of the project the study goes from the planning, through the total execution and finalizing at its evaluation, showing the points that can be considered strong or weak for its success. Finally, at the final considerations, it makes a brief reflection about the possible result to be obtained with the application of this project and the possible course corrections required to its continuation.*

**Key-words:** *virtual ambient, distance education and instructional design.*

## 1. Introduction

Supported by the new information and communication technologies, the distance education (DE) has harnessed the potentialities and available resources at the virtual learning environment that present characteristics that allow the use of interactivity and collaboration between all involved in the learning process.

In the multidisciplinary team involved in the development of virtual courses, the Instructional Designer (ID) is the professional who has the responsibility of conducting pedagogical measurements that involve the contents of the course, the techniques and methodologies that should be applied, in addition to pedagogical theories and didactic materials, together with other attributions.

To mediate between theory and practice, having the technology as a support, the ID should document in a clear and comprehensive manner, with well defined purposes and the desired goals, a project of instructional design that addresses a study about the general and specific data of the course. The project should be divided in phases, accordingly to Filatro (2008, p. 25), they are: the conception (analysis, design and development) and execution (implementation and evaluation).

This article presents in a critical and sequential form an analysis of a Project of ID with the objective of development, implementation and evaluation of a virtual course referring to the topic Information Systems in Organizations (ISO), offered to the under graduation students in Business Administration of the Faculdade de Ciências Econômicas, Administrativas e da Computação, of Associação Educacional Dom Bosco (AEDB), in the city of Resende - Rio de Janeiro.

Based on the reading of the general data of the course organized and detailed by the ID of the instructional project, considering the phases of planning, implementation and evaluation, looking for strong points that can lead to the success of the project, and the weaknesses that should be a target to extra care, correction or a change of direction.

Finally, it does a brief conclusion about all the topics covered by the project, pointing out the ones considered positive and the steps to be taken to

minimize the possible risks, it also presents solutions for its continuation and new proposals of study.

## 2. Instructional Design

Before starting the analysis, it is necessary to define the concept of design or instruction design, identify the role of the ID and display the contents of an instructional design project, as it was thought to AEDB.

Instructional design is a set of activities to identify a learning problem and design, implement and evaluate a solution.

The action of intentional and systematic teaching that involves the planning, development and application of methods, techniques, activities, events and educational products in specific teaching situations, in order to promote, based on known principles of education and instruction, the human learning. (FILATRO, 2008, p. 3)

The Professional in charge of the realization of the studies mentioned above and to design the proper educational solutions is the Instruction Designer. He should have the multiple competences for the exercise of his functions.

The instruction design is a propitious area for inquiry, having to be supported by evaluation, research and scientific questioning. Today, under the influence of cognitive theories of learning and the new technologies of information and communication, it needs to develop a solid base of knowledge that serves for the nowadays educational practice. (ROMISZOWSKI, 2010, p. 5)

An instructional design project must contain, at least, the following: context, schedule, budget, goals, target-audience, virtual environment, content, form of presentation, learning theories, media, types of communication and interaction and evaluation. (BARRÉRE, 2008, p. 12)

The Project must specify, still, the following features: Map of Activities, Storyboards and Instructional Design Matrix. The first feature gives us a general idea of the planning of activities. The second complements the map with a graphical sketch, guiding the production team. The Matrix of ID indicates the dynamic activities, their goals, the student's productions and the evaluation criteria. (SANTOS, 2008, p. 28)

### **3. Analysis of the ID Project**

This article examines the project of the course of Information Systems in Organizations (ISO), to be applied in the form of virtual distance education. For this, it lists the positive factors that stand out for the success of the course, its differentials, and also identifies its potential risks and the solutions proposed.

With the intention of facilitating the plan described above, the analysis was done separately for each phase of the project: planning, implementation and evaluation. The planning of the course will be carried through during the period from July to December of 2010, in a discerning way. In the implementation phase, from February to July of 2011, the analysis seeks to detail the participation and motivation of the pupils in the virtual environment, the questions of interaction and communication, the construction of knowledge and the evaluation of learning.

Finally, the analysis of the evaluation phase that will unfold in the months of July and August of 2011, takes in account the points considered strengths and weaknesses that have arisen during the process of implementation of the course.

#### **3.1. Planning Phase**

The project foresees its application in optional form, observing that the formation and the knowledge necessary today, with the technological advances and fast transformations, is not depleted in classroom, so, new skills and abilities are required every day.

The pupils already possess the skills and prerequisite abilities necessary for the registration; thanks to the disciplines attended in the previous years. The AEDB has computer laboratories with Internet access available to the pupils, even at the weekends. They already are doing internship in companies and keeping contact with some information systems.

To define who are the recipients of a particular project and what are their interests, their concerns, their difficulties – a task that involves not only the teams of conception and production of the material, but also tutors with experience in the field – is especially relevant at the moment of reflection on which are the capacities or the knowledge that are expected to be developed e, therefore, how to conceive an

strategy of communication adequate to its demands, its needs and to its intentions. (LITWIN, 2001, p. 78).

As motivation for the target audience, the Business Administration course already uses a system of Supplementary Academic Activity with a score in hours. This project predicts to disburse 40 hours in the portfolio of the students enrolled.

The virtual learning environment Moodle will be used; it possesses the necessary tools for the development of the collaborative learning, the interactivity between the pupils and with the educators. The environment presents a possibility in the use of the Constructivist, the Cognitivist and the Social-interactionist learning theories.

The Instructional Design can guide the planning of the Virtual Environment of Learning in order to clarify the real intention of the methodology and actions experienced in the teaching and learning process, with clearness of objectives so that the development and its implementation are carried through more objectively as possible. (FRANCIOSI and SANTOS, 2010, p. 5)

The lessons had been created with activities using the most diverse tools and media, seeking the motivation of the pupil and the breadth of potentialities that the virtual environment provides. There are videos, texts, sounds, images, and games. Synchronic and asynchronic activities of communication, individual and group dynamics will also be party of the learning process.

Another very important point was the migration to the virtual environment for the Moodle platform that was initiated in the first semester of the current year. The staff is being trained so that all can be able to use the new platform in 2010 in all courses in progress.

The exit or substitution of any member of a Distance Education team, that not yet got a vast experience or consolidated previous knowledge on the development of a virtual course in a platform that is still being tested by the professionals involved in the process, may undermine the project.

As to the financial risk, the course will be covered, in part, by the Distance Education system of AEDB. It is noteworthy that the institution intends to invest to gain greater experience in virtual courses, therefore aims to offer, in a near future, extension courses for the local community and former-pupils.

### 3.2. Implementation Phase

The multidisciplinary team should seek the constant motivation of the student, verifying the progress of activities, participation in forums, chats and mail, in addition to faithful adherence to deadlines. At this stage of the project, the course will add value to aspects of affectivity in the monitoring the student, stimulating its progress and not abandoning it in the daily routine.

The interactional strategies establish intersubjective relations that generate meaningful effects such as approximation, complicity, trustworthiness etc. and can help the teacher to ensure the involvement of the student in the virtual environment. (CRESCITELLI and CAMPOS, 2010, p. 11)

The communication with the pupils will occur in various ways, both in synchronous form, as, mainly, in the asynchronous form, providing great interactivity in the virtual environment by the use of various Moodle tools, such as chat, mail, forums, among others, in the constant search for interaction between pupils and tutors.

The analysis of the map of activities of the course, shows that the times destined to each lesson and activity are enough for the application of the project, provided that the deadlines are met by all. Assessments should follow the schedule so that the students could follow their development and the necessary corrections in his path to learning.

The course covers the three types of evaluation to measure the student learning: diagnostic, formative and summative.

The instructional design benefits from the formative evaluation in the sense of that the decisions taken in the daily work and the critical reflection on them, help it in short and medium terms. In the short term it facilitates the decisions about improvement of the material during the duration of the course by the identification of problems/deficiencies, creating an opportunity for pertinent revisions in the process. It prevents a large investment of time in the final revisions. (ROMISZOWSKI, 2010, p. 2)

Other evaluations can be made through the tool Reports, in which are recorded the accesses made by the student in the environment, the tools used and the time spent in each one of them.

It is predicted that the course will receive a content update every year it is applied, for the importance of the subject and in view of the increasingly use of technology in the organizations in order to better manage the flow of

information to support the operations, decisions and to obtain a competitive advantage over the competition.

This analysis allows verifying that the most important question is that the possibility of substitution of any member of the team during the execution of the course can be considered a risk to the success of the project.

Each one of these specialists with definite attributions is knowledgeable of the other activities developed by the Multidisciplinary Team. In this scenario we can envision that, seriousness of purpose, responsibility, expertise and commitment of managers and teachers, in offering of courses/ disciplines in the distance modality are necessary for the quality of the education. (SILVA, 2010, p. 2)

In replacement cases, the team must prioritize people who already have carried through qualification courses for the virtual environment and/or for the hardware support in courses that are developed in the institution.

### **3.3. Evaluation Phase**

During the months of July and August of 2011, leaned on the various data collected before, after and especially during the implementation of the course, the whole team participates of a detailed analysis on the quality of the course, seeking significant improvements to the continuity of the project.

About the evaluation of the course, as the authors inform, we must consider:

(...) the possibility of evaluation by process, guided by instruments that allow identify and characterize these variations as early as possible, to initiate the necessary procedures for the reorientation of the work, without damaging the progress of the course. (CARLINI and RAMOS, 2009, p. 161)

A member of the distance education team from Dom Bosco also participates of a Committee for Assessment, that make researches and take notes during the implementation, what facilitates the analysis of the success achieved or not and presents the necessary orientations for changes of direction.

The first analysis refers to the questionnaires fulfilled by the students at the end of each module. For such, spreadsheets and graphs that present the students' opinions on the most diverse topics are used.

The motivation of the pupils during the course can be measured by their participation or attendance, work developed and grades. The criticisms raised in the questionnaire should be reviewed to see if they are isolated problems or reached the group in its majority.

If we really intend to assist and to monitor the entire process of knowledge building of each student, it urges that we know, as much as possible, about the discussions and decisions on all the aspects of the course that he does... (PAIVA *et al*, 2010, s. p.)

The multidisciplinary team of distance education is able to make a thorough technical analysis of the technological resources employed, either hardware or software, as well as the professionals involved. With that, they can raise the needs of hiring professionals, training the staff for the virtual environment and/or net support.

The pedagogical methods used during the execution are analyzed by the educators, in order to question how was its didactic-pedagogical application and its relationship to learning that can lead the students to:

(...) a more autonomous formation, favoring the development of skills related to research and processing of information, leading him toward to human resources and multiple materials and providing a greater latitude in the terms of management of learning time and the selection of learning objects. (LOISELLE, 2002, p. 113)

Last but not least, the project foresees an assessment of the obsolescence of the course in relation to the technological context in which it is, seeking a constant update of its content.

#### **4. Concluding Remarks**

This article analyzes a distance education project for the development of the virtual course for students of the graduation course of Business Administration, seeking to raise the most relevant issues to its success.

The documentation on the course, such as the Map of Activities, the Storyboards and each Matrix of DI, are complete and facilitate the work of the multidisciplinary team, also of the teachers, tutors and students.

In a general manner, the analysis of the factors referring to the target audience, such as profile, accessibility, required skills, enables to look at this aspect as a strong point of the project.



The migration of the AEDB/DL environment to Moodle was a point that minimized the potential risk to the project. The virtual environment used until then by the institution did not include the necessary tools to the project. The Moodle environment was regarded as quite suitable to present the students with pedagogical theories focused on interactivity, collaborative learning, motivation and knowledge building. A positive factor is that the theories of cognitive learning, constructivist and socio-interactionist are planned in this project to be implemented during class.

With respect to the integrants of the distance education team, the disruption or replacement of any member, before or during the execution of the course is an issue that the analysis highlighted as a weakness and consequently, also a risk to the project. The offer of training for the staff of the educational institution, as it has been done so far, must be extended, both in quantity and in amplitude of multidisciplinary tasks.

Referring to the technological infrastructure, the institution already has implemented distance learning courses for its students with the appropriate technological apparatus, and has sought to create a knowledge base and professional experience to extend the offers of virtual courses for the community.

In a summary of the above displayed, can be considered as the most important possible questions about possible risk or failure of the course the following items: problems with the complete adaptation to the learning environment of Moodle, disruption or replacement of a member of the multidisciplinary team and the possible obsolescence of the content.

As positive differentials of the project, in addition to its meticulous detailing, can be cited: the target audience, its prerequisites and its score as a complementary activity; the technological infrastructure of the institution, the knowledge base of the professionals involved and the use of excellent pedagogical theories focused on interactivity and collaboration.

Finally, this analysis indicates that the risks for the possible failure of the project can be minimized if all the aforementioned steps are completed satisfactorily. The complete analysis of this project of distance education leads us to the conclusion, unless there is a better judgment, that this course can be applied in the proposed framework with good chances of success.

## References

- BARRÉRE, E. *Design Instrucional em um Curso de Sistemas de Informação nas Organizações*. Monografia do curso de Especialização em Design Instrucional para EaD Virtual: Tecnologias e Metodologias. Universidade Federal de Itajubá. Setembro de 2008.
- CARLINI, A L & RAMOS, M P. A avaliação do curso. In: LITTO, F M & FORMIGA, M M M (orgs.). *Educação a Distância: o estado da arte*. São Paulo: Pearson Education do Brasil, 2009.
- CRESCITELLI, M F C & CAMPOS, K S R. *A escrita do material didático virtual*. Available in: [http://www.pucsp.br/pos/lqport/downloads/publicacao\\_docentes/escrita\\_merce\\_des\\_karlene.pdf](http://www.pucsp.br/pos/lqport/downloads/publicacao_docentes/escrita_merce_des_karlene.pdf). Accessed in: March 11, 2010.
- FILATRO, A. *Design instrucional na prática*. São Paulo: Pearson Education do Brasil, 2008.
- FRANCIOSI, B R T & SANTOS, P K. *O revisitar de uma metodologia em prol da constituição de comunidades virtuais de aprendizagem para além do tempo-espaço dos cursos na modalidade a distância*. Available in: [http://www.pead.faced.ufrgs.br/sites/IIWAPSEDI/artigos\\_aceitos/24979.pdf](http://www.pead.faced.ufrgs.br/sites/IIWAPSEDI/artigos_aceitos/24979.pdf). Accessed in: April 10, 2010.
- LITWIN, E. (org.) *Educação à distância: temas para o debate de uma nova agenda educativa*. Trad. Fátima Murad. Porto Alegre: Artmed, 2001.
- LOISELLE, J. A exploração da multimídia e da rede Intrenet para favorecer a autonomia dos estudantes universitários na aprendizagem. In: ALAVA, Sérafin (org). *Ciberespaço e Formações Abertas: rumo a novas práticas educacionais?* Porto Alegre: Artmed, 2002.
- PAIVA, L F R et al. *Os Limites e as Possibilidades do Trabalho e da Formação de Uma Equipe Multidisciplinar em Educação a Distância*. Available in: <http://www.abed.org.br/publique/cgi/cgilua.exe/sys/start.htm?infoid=132&sid=116&tpl=printerview>. Accessed in: April 13, 2010.
- ROMISZOWSKI, H P. *Avaliação no Design e Desenvolvimento de Multimídia Educativa: estratégia de apoio ou parte do processo?* Available in: [http://200.156.15.182/moodle/file.php/1/Biblioteca\\_Virtual/Avaliacao\\_no\\_Design\\_e\\_Developolvimento\\_de\\_Multimidia\\_Educativa\\_estrategia\\_de\\_apoio\\_ou\\_parte\\_do\\_processo.doc](http://200.156.15.182/moodle/file.php/1/Biblioteca_Virtual/Avaliacao_no_Design_e_Developolvimento_de_Multimidia_Educativa_estrategia_de_apoio_ou_parte_do_processo.doc). Accessed in: April 12, 2010.
- SANTOS, M C D. *Projeto Instrucional: Curso de Sistemas de Informação nas Organizações*. Monografia do curso de Especialização em Design Instrucional para EaD Virtual: Tecnologias e Metodologias. Universidade Federal de Itajubá. Setembro de 2008.
- SILVA, O S. *Gestão de Equipes de EaD*. Trabalho apresentado no 13º Congresso Internacional de Educação a Distância. Curitiba. Available in: [http://www.senacead.com.br/pos\\_trabalhos/professores/gestao\\_de\\_equipes\\_d\\_e\\_ead\\_2008.pdf](http://www.senacead.com.br/pos_trabalhos/professores/gestao_de_equipes_d_e_ead_2008.pdf). Accessed in: April 10, 2010.