ADMINISTRAÇÃO DO ENSINO A DISTÂNCIA

ETHICS DIMENSION IN E-LEARNING

DIMENSÃO ÉTICA NO ENSINO A DISTÂNCIA

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RESUMO

O ensino a distância apóia o processo educacional e é baseado em tecnologia da informação e na comunicação. Devido aos importantes resultados obtidos, o ensino a distância vem continuamente ganhando relevância nas empresas e nas universidades. Apesar da importância indiscutível do ensino a distância, ele continua a ser claramente um conjunto de questões que não são ainda suficientemente compreendidas, como a ética, como é demonstrado no "E-learning Action Plan" publicado pela União Européia (COMISSÃO, 2001).

O objetivo deste trabalho não é apenas para demonstrar que as questões éticas estão realmente comprometidas com o ensino a distância, mas também para projetar um modelo, onde a ética deve estar presente em todas as suas fases.

PALAVRAS-CHAVE

Ensino à distância. Dimensões analíticas do ensino a distância. Ética.

ABSTRACT

E-learning is based on information and communication technology and supports the educational process. Due to important results achieved, e-learning is continuously gaining relevance in companies and in universities. Despite of the undisputable importance of e-learning, clearly remains a set of issues that are not yet enough understood, such as ethics,

as it is demonstrated in the "E-learning Action Plan" published by European Union (COMISSION, 2001).

The aim of this paper is not only to demonstrate that ethical issues are really committed with the e-learning process, but also to design a model, where ethics should be present in all phases of e-learning.

KEYWORDS

E-learning. E-learning analytical dimensions. Ethics.

INTRODUCTION

The idea of using computers as a learning tool is almost as old as the computer, since e-learning is one out of several concepts which are used for describing a host of new learning methodologies, where e-learning can be used totally or partially in the learning process.

Concepts like flexible learning, distance learning, tele learning and computer supported learning cover a wide extent use of similar learning methodologies (FALCH, 2004). The evolution of e-learning, namely in the developed countries, is already a phenomenon with a significant weight, constituting an opportunity for the education systems. E-learning is also an excellent help for the people's education in the poor countries, and for the competencies development in organizations.

In fact, the discussion regarding e-learning started with the concept. However, due to the evolution, the focus of the discussion moved to the supportive technology, after to the methodologies and finally to the socio-cultural factors (CONOLE, 2004).

The aim of this work is to propose an e-learning model, where ethics plays a major role.

Section two presents the literature review, being analysed the analytical dimensions of e-learning, the ADDIE model and the Dick and Carey model. Section three discusses the e-learning ethical challenges. Section four is a proposal for a new model and section 5 shows the conclusions.

LITERATURE REVIEW

In spite of the conceptual youth of e-learning, it is possible to enumerate some definitions of this concept; such as: "the use of new multimedia technologies and the Internet to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaborations".

E-learning is nothing more than the use of electronic tools and technologies to assist us in our teaching and learning. Nevertheless, e-learning is more than just the audio-visual tools that we have already used for a long time.

The term has arisen in recent years, along with e-commerce and e-everything-else, with the extremely rapid increase of the Internet and the World Wide Web. The most extreme version of e-learning comes from those who see the possibility of this technology be used to create "virtual" communities that can replace or be an alternative, to the traditional "bricks-and-mortar" classroom (MARTIN; WEBB, 2001).

The concept of e-learning defended by Gomes also includes innovation elements, added value, and distinction in relation to other kind of technologies used in education.

None of the presented definitions on e-learning demonstrates clearly the ethical issues concerning the topic in discussion.

Analytical dimensions of e-learning

Advances in information technology and new developments in methodologies provide opportunities to create e-learning environments that are:

- well-designed;
- learner-centered;
- interactive;
- affordable;
- efficient;
- accessible.

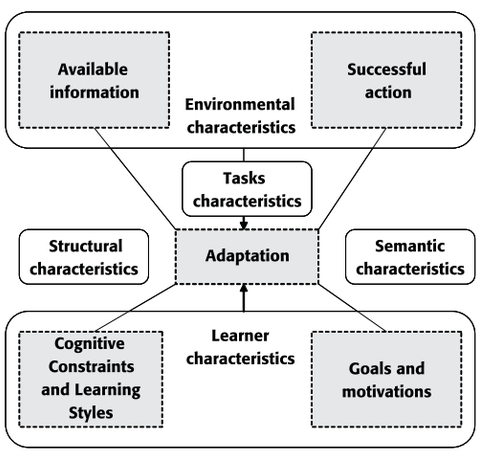
On the other hand, an e-learning project requests the participation of a multidisciplinary team, due to his multiple dimensions. But, in fact which are the analytical dimensions of this phenomenon? The answer is not always easy, due to the conceptual youth of e-learning, as the existent literature demonstrates.

Zualkernan (2006) refers that the constructivist view of e-learning is based on a framework that has five dimensions (Figure 1):

- available information;
- successful action;
- adaptation;
- cognitive constraints and learning styles;
- goals and motivations.

However, these 5 dimensions can be grouped in five characteristics:

- *Learner characteristics:* cognitive and constraints learning styles plus goals and motivations;
- *Physical environment:* available information plus successful action;
- *Structural fit:* available information plus cognitive and constraints learning styles;
- *Semantic fit*: successful action plus goals and motivation;
- *Task environment*: adaptation between physical environment and learner.



Source: ZUALKERNAN, 2006.

FIGURE 1 - Five dimensions of the Zualkernan's e-learning framework

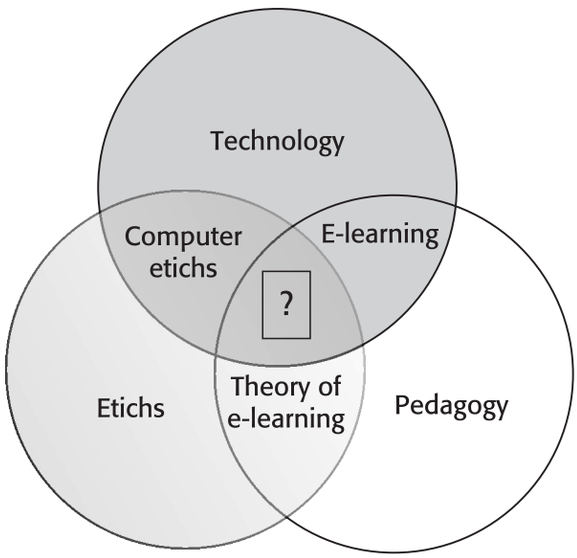
Jefferies and Stahl (2005) analyze the relationship among pedagogy, ethics and technology (Figure 2). They consider only three interactions of these three domains:

- *e-learning* is the interaction between technology and pedagogy;

- *computer ethics* is the interaction between technology and ethics;

- *theories of learning* are the interaction between pedagogy and ethics.

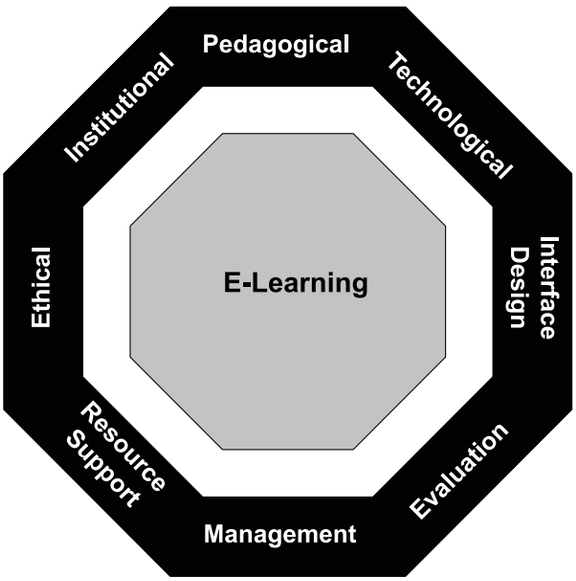
However, the forth interaction among pedagogy, ethics and technology is, in our opinion, *ethics in e-learning*.



Source: JEFFERIES; STAHL, 2005.

FIGURE 2 - Three dimensions of the Jefferies and Stahl e-learning framework

Khan (2001) advocates eight dimensions on e-learning framework: (1) institutional, (2) pedagogical, (3) technological, (4) interface design, (5) evaluation, (6) management, (7) resource support, and (8) ethical. Each dimension has several sub-dimensions, which are issues focused on a specific aspect of an e-learning environment (Figure 3).



Source: KHAN, 2001.

FIGURE 3 - Eight dimensions of the Khan's e-learning framework

Other authors such as Kisielewska and Chrz¹szcz (2005), and Morañska (2005) due to the phenomenon complexity analyze only one aspect of the e-learning framework.

ADDIE model

The ADDIE model (2006) is the generic process traditionally used by educational designers and training developers worldwide, with five phases (Figure 4):

- analysis;
- design;
- development;
- implementation;
- evaluation.

They represent a dynamic and flexible guideline for building an effective training and support tools.

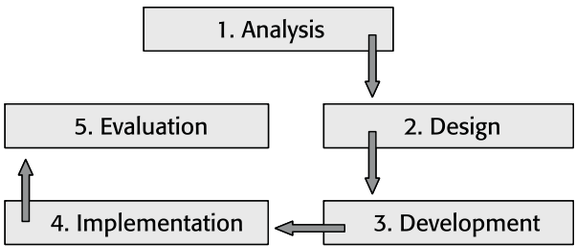


FIGURE 4 - The ADDIE Model

Source: STRICKLAND, 2006.

In the ADDIE model, each step has an outcome that feeds into the subsequent step.

- In the *analysis phase*, the instructional problem is clarified. The instructional goals and objectives are established and the e-learning environment and learner's existing knowledge and skills are identified.
- Below are some of the questions that are addressed during the analysis phase:
  - who is the audience and their characteristics;
  - what do they need to learn;
  - what types of learning constraints exist;
  - what are the delivery options;
  - what are the online pedagogical considerations;
  - what is the timeline for the project completion.
- The *design phase* deals with learning objectives, assessment instruments, exercises, contents, subject matter analysis, lessons planning and media selection. The design phase should be systematic and specific. Systematic means a logical, orderly method of identifying, developing and evaluating a set of planned strategies targeted for attaining the project's goals. Specific means each element of the instructional design plan needs to be executed with attention to details.
- The *development phase* is where the developers create and assemble the content assets that were created in the design phase. Programmers work to develop or integrate technologies. Testers perform the debugging procedures. The project is reviewed and revised according to any feedback given.
- During the *implementation phase*, a procedure for training the facilitators and the learner is developed. The facilitators' training should cover the course curriculum, learning outcomes, method of delivery, and testing procedures. Preparation of the learners include training them on new tools (software or hardware), student registration. This is also the phase where the project manager ensures that the books, CD-ROMs and software are in place, and that the learning application or Web site is functional.
- The *evaluation phase* consists of two parts: formative and summative. Formative evaluation is present in each stage of the ADDIE process. Summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the users.

Dick and Carey model

Although there are several versions of the instructional design model, with an almost unlimited number of choices, the ADDIE and the Dick and Carey model are in top ten.

Having in consideration several authors like Dick and Carey (2004), and Briggs, Gustafson and Tellman (1991) or Edmonds, Branch and Mukherjee (1994), it is possible to understand the principles associated to the Dick and Carey model (Figure 5):

- In the *instructional goals phase*, it is desirable that the affairs are done by instruction. The instructional goals and objectives are established, allowing the e-learning environment, learner's

existing knowledge and skills be identified. The analysis of a discrepancy between an instructional goal and the present state of affairs or a personal perception is needed.

▪ Afterwards the *instructional analysis* will determine the skills involved in reaching a goals.

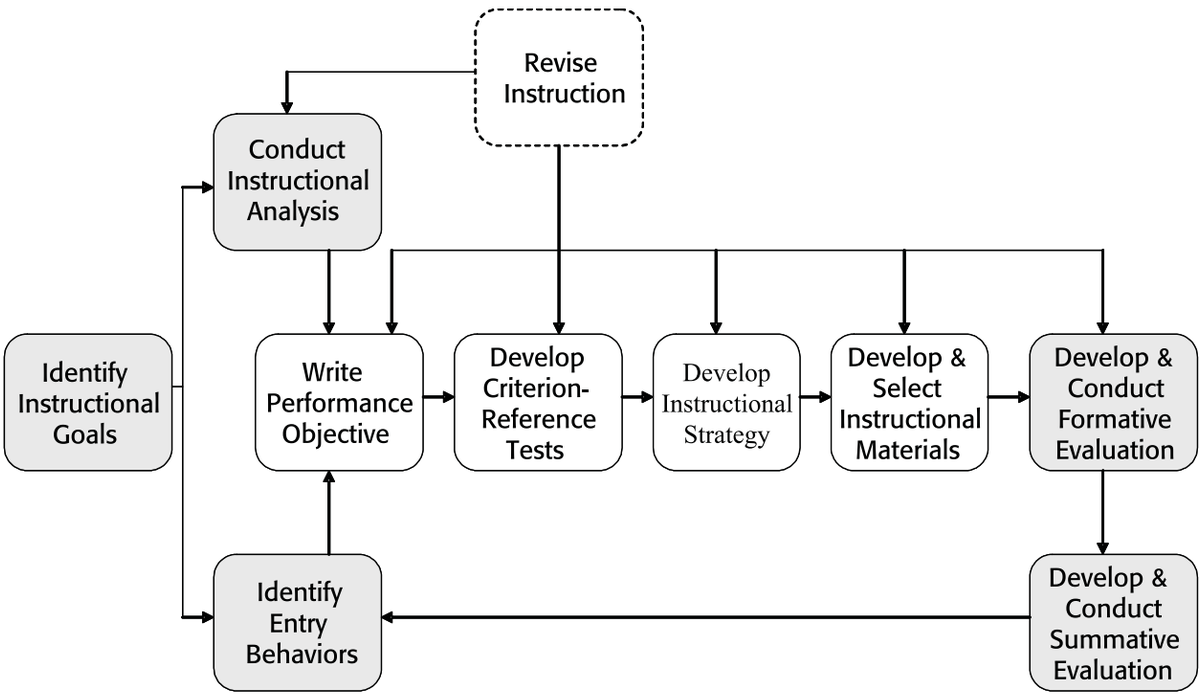


FIGURE 5 - The Dick and Carey Model

Source: DICK; CAREY; CAREY, 2004.

▪ In stage three, *entry behaviors and learner characteristics*, the objective is to determine which of the required enabling skills the learners bring to the learning task, addressed in the issues presented bellow:

- intellectual skills;
- abilities such as verbal comprehension and spatial orientation;
- traits of personality.

▪ *Performance objectives* phase has the purpose to translate the needs and goals into specific and detailed objectives and also determining the instruction related to its goals, having in consideration the next points:

- to focus the lesson planning upon appropriate conditions of learning;
- to assist learners in their study efforts.

▪ The *criterion-referenced test items* phase needs to insure the procedures enounced above:

- to diagnose individual skills for learning new skills;

- to check the student results during the process of a lesson;

- to provide student progress documents;

- to evaluate the instructional system (formative and summative evaluation);

- to determine performance measures before the learning session.

▪ In the phase, *instructional strategy*, the goal is to outline how instructional activities will relate to the accomplishment of the objectives regarding the best lesson design.

▪ The *instructional materials* stage has the function to select the printed or other media intended to convey events of instruction, such as:

- the use of existing materials when it is possible;

- the need for development of new materials;

- the role of the teacher which depends on the choice of a delivery system.

▪ During the next phase, *formative evaluation*, the main point is to provide data for revising and improving instructional materials.

▪ At last in the *summative evaluation* phase, the effectiveness of the system as a whole is evaluated.

DISCUSSION ON E-LEARNING ETHICAL CHALLENGES

Students whether enrolled in a traditional university or an e-learning program can very easily garner fraudulent information and use it for their assignments, projects, and research papers.

Therefore it is very important that the courseware for e-learning is carefully crafted and managed with enough checks and balances to minimize unethical practices (2006). One of the main issues regarding unethical behavior is intellectual property, plagiarism and copyright violations. One of the several ways to deal with this problem, is in the first session, discuss the ethical issue about intellectual property, plagiarism, copyright and privacy issues with students.

Intellectual property increasingly determines the way the economy of the information society works but it is unclear whether traditional concepts can fruitfully be applied to modern technical means (2005). Having in consideration the previous sentence that we may not assume that your students fully understand the concept of intellectual property and documentation available on the Internet.

In fact, authors have different opinions facing privacy, the way how it is valued and how it can be protected. Nevertheless, most authors agree that privacy related to the electronic transmission of data can constitute an ethical issue (2005) In fact, intellectual property and privacy are probably the most visible and salient issues.

To prevent unethical behavior, one of the issues discussed must be the consequences of plagiarizing and legal issues around violation of copyright. Another measure to be taken is to show to students some examples of plagiarism, violation of copyright and privacy. However, paradoxically collaborative work prevents plagiarism (2005).

At last, there is the purely technological issue. Open source software is based on open distribution of the source code that forms software's foundations. This means that any technically competent programmer can examine the inner workings of the source code and make changes to the operation of the software.

Open-source software is typically provided free of charge or for a nominal distribution cost. Some open-sources licenses require that any changes to the source code be redistributed on the same open-source license terms as the original source code.

Open standards are transparent descriptions of data and behavior that form the basis of interoperability. Interoperability is the ability of different software systems to exchange information, resulting in equivalent user out-comes. In practice, interoperability means that users are not locked to any software system - they can substitute one standard by another one.

Open standards can be implemented by commercial and open-source systems alike. Provided that all systems adhere to the same standards, there is no impediment to combining commercial and open-source software systems.

It may be natural, to consider open-source preferable to open-standards. This is because in *open-source software* development, all of the source code is free available, and, if it does not correspond to open standards, it could be modified to be standards-compliant.

Commercial systems that support open standards rarely provide access to their source code, so external developers cannot change software as desired. Hence, we are forced to choose open source since it seems to be a more flexible option.

Most open-source e-learning projects have not arisen spontaneously from the goodwill of freelance software developers. They are typically the result of government or foundation funding, where developers are paid for their contributions to the project.

PROPOSED MODEL

In our opinion, the need of a new approach to e-learning is a reality, if we have in consideration the following previous remarks:

- e-learning is a multidimensional phenomenon;
- the educational models generally tend to disregard ethics.

Therefore the ethical dimension of e-learning which elapses by the technological evolution has been constantly forgotten. Thus, we propose the following model (Figure 6) that should be based on ethics,

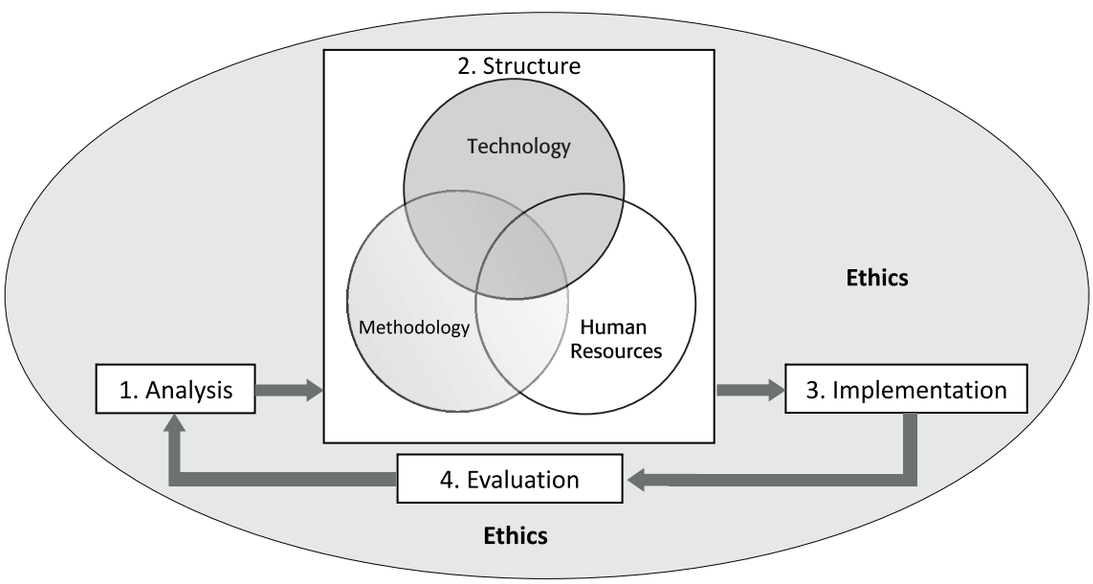


FIGURE 6 - Proposed Model

This model presents four phases: (1) analysis, (2) structure, with three sub-dimensions: (i) technological (ii) people and (iii) methodological, (3) implementation and (4) evaluation.

In the presented model, each step has an outcome that has feedback into the subsequent step, allowing a continuous improvement of the model. On the other hand, the final ideas to be presented are the model's characterization:

- In phase 1 - *analysis*, the goal is to understand the instructional problem based on ethics. In that way the priority is to establish the ethical principles which will guide the e-learning environment and learner's through the course. Of course, this analysis will vary consonant the e-learning project, but these questions must be always present:

- what kind of ethical environment should exist;

- what are the ethical challenges regarding intellectual property, plagiarism, copyright and privacy issue.

- Phase 2 – *structure*, has three dimensions: (1) *technological infrastructure* (2) *people*, and (3) *methodology*. The first dimension examines infrastructure planning, hardware, software, interface, online support, technical resources and information management. The second dimension refers to all pedagogy concerns (teaching and learning). And finally, the third dimension is the instrument of the e-learning project. In this phase the questions that should addressed are the following ones:

- what are the technological requirements for the e-learning project;

- what kind of technological infrastructure should be used;

- what are the technological constraints;

- what is the timeline for project completion.

- who is the audience and their profile;

- what do they need to learn;

- what types of learning constraints exist.

- Afterwards, phase three - *implementation*, aims to put the e-learning project functioning.

- Finally, phase four - *evaluation* consists of three different types of evaluation: formative and summative (similar to the ADDIE model), and the ethical evaluation. Formative evaluation will be present in each stage of the model. Summative evaluation consists of tests designed for criterion-related referenced items and providing opportunities for feedback from the users. The ethical evaluation will analyze if the ethical principles that are fundamental to the model were achieved.

CONCLUSION

The use of technology as support to learn doesn't constitute a methodological revolution, but reconfigures the field of possibilities and also formats the fields of analysis.

As any phenomenon e-learning requires several analytical contributions due to its complexity, and so allows a better understanding of all the architecture. On the other hand, the conceptual youth of e-learning will definitely bring new challenges and new issues and consequently new analytical dimensions can be explored.

However the presented model should be seen not as a critic to the existing models, but a reflection and adaptation of the ADDIE model and the Jefferies and Stahl e-learning framework, considering the permanent existence of ethics. In fact, as any model it is a representation of a certain reality, and so, can incorporate other dimensions in his conception.

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