Article

Institutional conditions and teacher`s development of electronic skills: a study in a Federal University

Condições institucionais e desenvolvimento de competências eletrônicas dos professores: um estudo em uma IES Federal

Fernanda Roda de Souza Araújo Cassundé[1]

Universidade Federal do Vale do São Francisco, UNIVASF, Petrolina-PE, Brasil

José Ricardo Costa de Mendonça[2]

Universidade Federal de Pernambuco, UFPE, Recife-PE, Brasil

Milka Alves Correia Barbosa[3]

Universidade Federal de Alagoas, UFAL, Maceió-AL, Brasil

Abstract

The expansion of Brazilian higher education institutions, especially with the installation of several campuses in the countryside and the advancement of ICT, has stimulated the use of distance education by universities as a way to respond to new educational demands arising from changes in the new world economic order. This new teaching-learning scenario involves change in skills and higher education of professors: solid academic development, work experience and pedagogical competence. The university institutional conditions in which professors are inserted can therefore influence the development of such skills. Therefore, this study aims to discuss, the influence of institutional conditions in developing electronic skills of higher education teachers. To achieve the objective pose, a basic interpretive qualitative study was carried out. Eleven faculty members at Federal University that work in the distance education took part in semi-structured interviews. Interviews and documents were examined by content analysis with the help of a specific qualitative research software, the ATLAS.ti. It was found that it is necessary for Federal University to strengthen distance education institutionally, through expansion of its staff, allocation of technical and administrative personnel with the course Coordination's, either by recognizing workload of faculty in this modality or also favouring the development of electronic skills of professors.
Keywords: Institutional conditions. Integration of ICT. Electronic skills. Distance education.

Resumo

A expansão das instituições de ensino superior brasileiras, especialmente com a instalação de diversos campi nas cidades do interior do país, e o avanço das tecnologias de informação e comunicação, têm impulsionado o uso da educação a distância pelas universidades como forma de responder às novas demandas educacionais decorrentes das mudanças na nova ordem econômica mundial. Esse novo cenário de ensino-aprendizagem envolve mudança de competências e de formação do professor do ensino superior: desenvolvimento acadê-

1 Doutora, Mestre e Bacharel em Administração (UFPE). Professora Adjunta do colegiado de Administração da Universidade Federal do Vale do São Francisco (UNIVASF). E-mail: fernanda.roda@univasf.edu.br.

2 Doutor em Administração. Pós-Doutorado em Sociologia. Professor Adjunto do Programa de Pós-Graduação em Administração (UFPE). E-mail: jrcm@ufpe.br.

3 Doutora e Mestre e Graduação em Administração. Docente da Universidade Federal de Alagoas (UFAL). E-mail: milka.correia@gmail.com.

mico sólido, experiência profissional e competência pedagógica. O desenvolvimento de tais competências pode ser, portanto, influenciado pelas condições institucionais das universidades nas quais os professores estão inseridos. Este estudo tem o propósito de discutir a influência das condições institucionais no desenvolvimento de competências eletrônicas dos professores de ensino superior. Para tanto, foi realizado um estudo qualitativo interpretativo básico. Professores vinculados a uma Universidade Federal e com atuação na educação a distância responderam as entrevistas semiestruturadas. Os dados coletados foram examinados pela análise de conteúdo proposta por Bardin (2011) com auxílio do *software* o Atlas.Ti. Os resultados do estudo indicam a necessidade de a instituição fortalecer a educação a distância institucionalmente, seja por meio da expansão de seu quadro de pessoal, na alocação de pessoal técnico-administrativo junto às Coordenações dos cursos, seja reconhecendo a carga horária do docente que atua nesta modalidade ou, ainda, favorecendo o desenvolvimento das competências eletrônicas dos professores.
Palavras-chave: Condições institucionais. Integração das TIC. Competências eletrônicas. Educação a distância.

Introduction

The emerging paradigm of new information and communication technologies (ICT) has led to changes in the customs of modern society, restructuring methodological aspects of the teaching-learning process (GOUROVA et al., 2014; DECMAN, 2015; FARID et al., 2015).

An essential question is being faced by the higher education institutions (HEIs): the questions concerning the demands of a new concepts and teaching methods. They are proposals for changes in undergraduate and postgraduate programs which reflect the new relations of an increasingly and more demanding society for education by inducers policies of institutional changes and for changes in work culture (GOUROVA et al, 2014; FARID et al. 2015).

The open distance learning (ODL) then appears "as an extremely proper education mode and desirable to meet the new educational demands arising from the changes in the new world economic order" (BELLONI, 2009, p.3). That is why the creation of Distance Learning Centers has been a common process for educational institutions in the last few years to enable both the undergraduate program as the postgraduate in the country, as well as the investment of substantial resources to explore the potential of distance learning in higher education.

In this sense, Kenski (2003, p.45) suggests to make a "deep reflection on the conceptions of what is knowledge and the ways of teaching and learning" for change to the structures and logic of knowledge, requiring new ideas for teaching, new methodologies and new approaches to the teaching action. Added to this the fact that teaching in ODL, according to Souza, Sartori and Roesler (2008, p.337), consists of several articulated elements, "demonstrating that it is not an airtight or static action, by contrast, is inserted in an active process, and constantly moving a space full of objective and subjective elements".

In fact, Martins (2008, p.363) points out that teachers started "their qualification to a new setting without borders, which has become, every second, and presented a valuable learning opportunity based on the integration and the assistance, whate-

ver the time and space". Given these requirements, any prospect of improvement or innovation in education requires better qualification of trainers. Other words, this perspective is linked by a dependency to a faculty highly qualified and aware to the specific needs of different learners, and that is able to implement successful strategies for teaching-learning process. For this, it is essential to develop certain specific skills (BELLONI, 2009; EHLERS; SCHNECKENBERG, 2010; UMAR; DANAHER, 2010), called electronic or e-competence.

This type of competence is based on the motivation and ability of the teachers in using information and communication technologies, ie, refers to the ability to use ICT in daily educational practice, whether in individual or collective (SCHNECKENBERG; WILDT, 2006; SCHNECKENBERG 2007, 2010b). However, it is one of the hardest skills to be developed in the current context of education, emphasizes Belloni (2009, p.87) because "it refers to the technical knowledge and the ability to integrate educational materials in more sophisticated technological supports".

This is why:

> (...) Think in training and skills development of university professors becomes a necessary reflection, since it is a part of a professional category – university professor – which has unique characteristics, given the current situation of higher education institutions, among them the university, regarding the management skills (PAIVA, 2007, p. 28).

Therefore, understanding that the faculty plays a decisive role in the strategy of a university to improve and expand their educational services with the help of the technology (SCHNECKENBERG, 2007; VOLK, KELLER, 2010; GILBERTO, 2013), it is understood that a IHE only is able to guide and implement technologies for innovation in teaching and learning process in distance education if: a) the members (professors) are aware of the need to adapt the working culture to the changing environment; b) distance education learning environments are those grounded in a different infrastructure that is used in the presential mode; c) the members make the insistent use of the potential of ICT; and above all d) developing the necessary skills for members have support under conditions given by organizational contexts (in favor of ODL) previously institutionalized.

This study is therefore guided by the question that is placed between the problem and the research field: How can developing of e-competeces of the professors in higher education are related to the organizational context of the conditions of higher education institutions?

It is important to say that, Although we recognize the importance of the student in the teaching-learning process, once the efficiency of a course is largely dependent on how the skills of teachers and students are related (SCHNECKENBERG 2004, 2010a), it is only possible to ensure the student learning in virtual learning environments if teachers use, properly, the technologies available (SCHNECKENBERG, 2004).Thus, considering that is a responsibility and teacher's role the definition of teaching strategies, pedagogical issues (whether in person or remotely) and, consequently, how to insert the ICT in the teaching-learning, the focus of this study is only this actor, the professor (faculty).

Occupation-professor: the teacher training and the work in higher education

The teacher's work is understood to be a knowledge profession, according to Marcelo (2009). The understanding, the knowledge, constitutes as the legitimizing element of the professional and the teacher's work of justification has been based on the commitment to transform this knowledge into relevant learning for students, the author points out. In this sense, Vasconcellos (2002) adds that this professional category was created with the purpose of transmitting the knowledge and values of each social group, since the image that has formed about the profession, from its inception to the present day, it is that the teacher plays an activity "fundamental to the social mobility of individuals and for developing of society" (ENS; GISI; EYNG, 2011, p. 311).

In Brazil, the beginning of the profession was marked by a major concern in finding competent professors to teach. Although until the 70's many universities were already operating in the country, and was required of the candidate for higher education professor only a bachelor's degree and some basic features, such as being updated on the knowledge, have an experience, being expert and researcher (a producer of knowledge) be capable to evaluate (to check students' learning) and be empowered to exercise the teaching (ZANOTELLI, 2009). That is, the teacher was the reference to be played by passive students in front of a business plan to be fulfilled and an approach that went from simple to complex, hierarchical way. The activity of the teacher was built under the aegis of the conservative and dominant paradigm of teaching (BEHRENS; PEREIRA, 2011).

As in all other professions, the teaching activity, over time, also underwent a process of transformation. The paradigm changes caused significant developments in the teacher's work especially in the higher education, namely: teacher's role in the restructuring, the methodology used in the classroom, integration and use of equipment / technologies to support regency (ZANOTELLI, 2009; ENS; GISI; EYNG, 2010).

In this sense, Zabalza (2007) states that there is difficulty in defining education training programs for teachers of higher education because there is no consensus on which dimensions should be prioritized in such programs. For the author, the separation between the dimensions that characterize the teacher's activities in higher education - teaching, research and management – also has repercussions on type of training offered to this subject, favoring those focused on scientific disciplines or fields where the teacher acts, leaving out key aspects related to pedagogy itself, to management skills, for example.

Hence the concern with the formation of higher education professors reflected more in formal documents and publications on university management than that the actual public and organizational policies (ZABALZA, 2007). And, as a representation of that, it is noted that a considerable part of the professors who work in educational or research institutions "was formed (and performed) over a long period of his academic life in an atmosphere that little or no use to them based on current context" (BIANCHETTI, 2012, p. 274).

Although the training goes beyond retraining and mere technical training or reproduction of instrumental knowledge (DIAS SOBRINHO, 2009), in many insti-

tutions it is known that a doctoral degree has been sufficient to consider an able Professor to join the teaching career and play a managerial role at various levels, whether rector, pro-rector, directors, coordinators, among others.

About the e-competences for ODL in higher education

By considering the new educational context set by technological advances, by encouraging the use of ICT and by the consolidation of ODL, "is thought to be of vital importance to consider e-competences in the exercise of the teaching profession" (MENDONÇA et al., 2012, p.7). Paiva (2007) adds that technological advances directly affect the professor, remaining a questionable point of his activity, since "technological revolution is producing 'a forceps', a new teaching professionalism" (CUNHA, 2001, p.87) . Thus, the teachers as well as strengthen the skills they already have, they must also acquire skills to know and judge why, when and how to use ICT in education (SCHNECKENBERG, 2010b; VOLK, KELLER, 2010).

When inserted in ODL the teachers have to be able to recognize the limitations and potential of the technology, and the best techniques for communication through technology, reformulating educational practices in order to enable the creation of new experiences (SOUZA; SARTORI; ROESLER, 2008; VOLK, KELLER, 2010; MOORE, KEARSLEY, 2011).

The fact is that teaching in the distance modality is a challenge for most professors, as exemplify Moore and Kearsley (2011), especially for this being mediated by technology, permeating the pedagogical practices in ODL. However, until recently, with difficulty a person had had experience or "received training on how to teach using the technology. Thus, people who become instructors in the ODL [...] need to learn, performing the functions with almost no guidance "(MOORE; KEARSLEY 2011, p.147), that is, the teachers usually are faced with situations not previously experienced like a student, since most graduated in a presential classroom teaching.

The teacher, when coming into contact with the ODL, as characterize Souza, Sartori and Roesler (2008, p.329),

> (...) Shall be organized to confront time and space in a different way; establishes a contact with students without counting the looks and gestures and, in various situations, without an immediate reaction on what was presented and proposed. These elements imply a set of didactic and pedagogical knowledge 'new', which, in many cases call into question forwards data to-face situations.

These circumstances reinforce the need to develop specific skills (LATCHEN, 2010), the so-called e-competence for teachers operate in ODL.

In the view of Schneckenberg (2007, 2010b), e-competence means one aspect of a broader debate about models that enable the integration of new technologies to the universities, given that a new electronic context is gradually involving and modifying the environment teachers working in higher education. Although electronic skills have a technological focus, the author points out (2006, 2010b), the skills required for teaching is not limited to the electronic component. You are not dealing with the level of knowledge of each teacher on specific applications and software, it is something broader. It concerns to the educational skills they need to make

judgments appropriate for the effective integration of ICT in the teaching-learning process.

Following are detailed the institutional conditions of the integrated model for the development of e-competence.

Detailing the institutional conditions of integration model for the development of the e-competence

Schonwald (2003) states that there are five dimensions related to institutional conditions that make up the necessary structure for the change process and institutionalization of distance education in the universities, and they influence each other: economic dimension, technology dimension, organizational dimension, pedagogical dimension and the socialcultural dimension.

Seufert and Euler (2003, 2004) have made an detailing about these dimensions, namely:

The economic dimension focuses on the efficiency and effectiveness of resource use and, in some way, relates to the development of an implementation strategy of ODL in universities, allowing HEIs (Higher Education Institutions) to take measures to ensure advantage strategic competitive (for example, the establishment of new markets or the profile of a college education).

It also provides the necessary resources for basic infrastructure (technology infrastructure, support structures) for the development of ODL.

The technology dimension throws the look at the driven functionality for ODL and technical infrastructure stability. A high degree of use and usability of support technologies, the ODL represent a sustainability factor of technical knowledge and dissemination of this type of education. The easy handling of a virtual learning environment facilitates the adoption of technological innovation more widely and should be considered when using both learning platforms, as well as when developing the projects of specific courses in distance education. The technical stability must be guaranteed by the central support structures of the universities (the ITCs - Information Technology Centers).

The main purpose of the organizational dimension is to ensure the adaptability capacity and stability of the structures and processes in order to institutionally anchoring the ODL in a favorable organizational environment for acceptance. A plan that includes the entire university and the establishment of an implementation strategy of ODL is therefore a key factor in ensuring the viability of this type of education. It is also important to stakeholder management, taking into account the needs of different involved actors (teachers, students and technicians) in the process when the use (or support) the technological infrastructure available.

The pedagogical perspective refers to the quality of the university education, with a focus on learning. The didactics in distance education is crucial because of the educational innovations for the authors. Thus, learning scenarios in ODL should be as effective and efficient as the classroom teaching so that we can achieve acceptance of the individuals to long-term and generalized use of this modality in higher education. That acceptance passes through the development of university

professors competencies, since the lack of qualification of the faculty is currently a bottleneck for the spread of ODL.

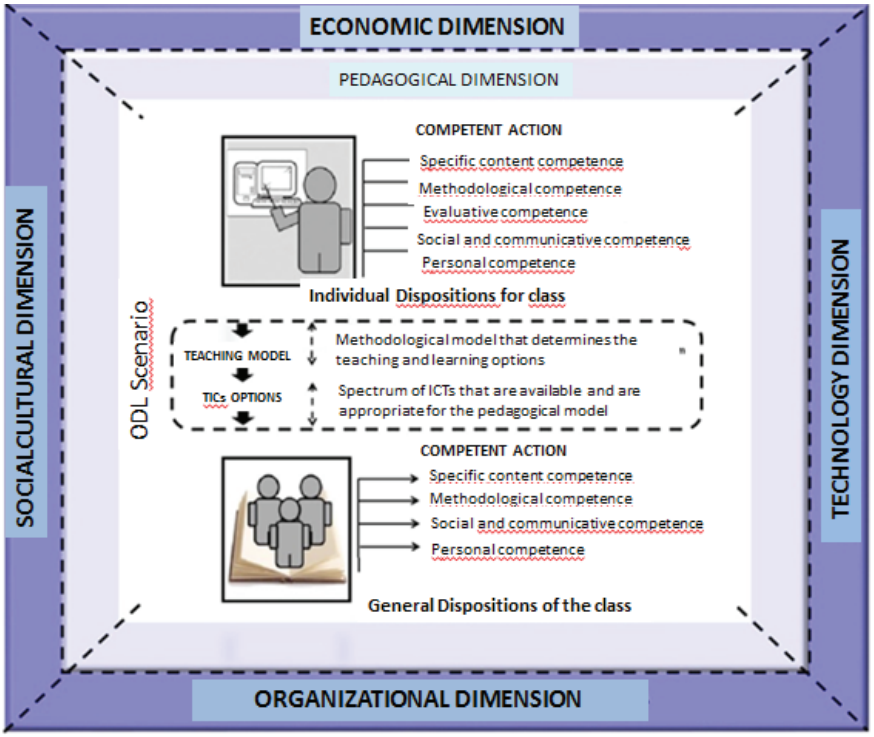
Finally there is the socialcultural dimension. This dimension is important because evidences indicate that the existing structures and cultures in universities do not allow the direct use of the potential of technologies applied to ODL. Thus, this dimension includes social and cultural changes that can (and should) arise from ODL initiatives. Such changes must be anchored institutionally and in this case the commitment of the decision makers of the universities and acceptance of ODL by teachers is the measure for the effectiveness of ODL in higher education.

Thus, the analysis of the five dimensions presented provides a starting point essential to identify and evaluate the institutional conditions of the integrated model for the development of electronic skills and above all to analyze how they impact on the development of electronic competences of teachers to integrate information and communication technologies to educational processes.

Therefore, it is considered, a) that it is necessary to establish the use of ICT in the teaching-learning as an integral part of the teaching in universities; otherwise the technology will always be seen as an alien body in this case (SEUFERT; EULER 2003); b) it is necessary to analyze the organizational context in which the needs and specific challenges of the use of ICT are defined and the individual competency is developed (SCHNECKENBERG; WILDT 2006); c) that the specifications of e-competence exposed by Schneckenberg (2007) are defined in: electronic personal skills and institutional e-competence; d) the integration of ICT is a multidimensional responsibility task (LATCHEM, 2010); e) the development of faculty of electronic expertise lies in broader institutional incentives for the use of ICT (SCHNECKENBERG, 2010a); and still f) that the university only is able to guide and implement technologies for innovation in the teaching process if the development of skills necessary for the members have support under conditions given by previously institutionalized organizational contexts.

This way, from the literature review, it was proposed an integrated model for the development of electronic skills, based on Schneckenberg and Wildt (2006) and adding the institutional conditions defined by Seufert and Euler (2003), which is shown in figure 1 below.

Figure 1 – Integrated model for the development of electronic skills for implementation of the distance education in University contexts



Source: Based on Seufert and Euler (2003); Wildt and Schneckenberg (2006).

Methodological procedures

This study adopts a qualitative perspective, and as a research strategy, we opted for the basic interpretive qualitative study, as described by Merriam (1998, 2002), exemplifies all the characteristics of qualitative research, that is, the researcher is interested in understanding how the individuals give meaning to a situation or phenomenon. This meaning is mediated by the researcher, the strategy is inductive, and the result is descriptive.

It was chosen as a place of the present study a public federal university and as a unit of analysis, the specialization course in Public Management of PNAP (National Training Programme in Public Administration). It is important to note that the choice of this HEI held its benchmark of performance: the semi-arid northeast, the first federal university in the country created with a regional development mission and multicampi structure in three different states: Pernambuco, Bahia and Piaui. It was also considered the criterion of accessibility of researchers and participation in the "Pró-ADM" Project - Teacher Training for distance education, supported by CAPES in specific notice Pro Management 2008.

The course of Public Management, (PNAP), was chosen as the unit of analysis due to be considered to Silva et al. (2012, p.12), an innovative way to promote the qualification of "college degree holders who exercise activities in public agencies or the third sector or have aspirations to exert public service" through distance education.

Thus, the program is configured as an investment in innovative university pedagogies (EAD) and an innovation in the training courses, scientific and technological of the universities.

Data were collected through semi-structured interviews, and documental analysis, so it was possible to perform the triangulation of information, and were analyzed to identify inductively the recurring patterns or common themes that run through the data as guides Merriam (2002) for the type of research chosen.

The following institutional documents were analyzed: Institutional Development Plan (2009-2014); Department of Training Plan for People Management (2009, 2010, 2011, 2012, 2013, 2014); Institutional Plan for Teacher Training (2009-2013, 2014-2017); and institutional website.

To determine the analysis corpus, Merriam (2002) suggests that it is necessary first to establish the essential criteria in choosing who should be interviewed. In this sense, the actors who experience teaching practice from the conditions imposed by the institution were selected, namely the actors entered in educational practice linked to the National Training Program in Public Administration in the course of Public Management.

The individuals who composed the group of respondents were servers (technicians and teachers) of the HEI chosen and who were related at the timeto the National Program for Public Administration Training Course in Public Management. The group of respondents, the estimated quantity (total of individuals) interviews and the amount of interviews held are shown in Table 1.

Table 1 – Group of respondents

Respondents Profile	Expected Amount	Interviews
Coordenadores	03	03
Professors	11	08
TOTAL	14	11

Source: Authors.

In order to ensure the confidentiality of respondents, reference codes have been assigned to identify them during transcription of his lines in the data analysis. The judging criteria for the closure of the collection of data of the present study was the theoretical saturation, according to Bauer and Aarts (2002) suggests rigor in qualitative research process.

Considering the objectives and data collection techniques proposed in this study, the Content Analysis was adopted for data analysis procedure. When the content analysis is chosen, in view of Mozatto and Grzybovski (2011), the data itself is taken only as raw data, only presenting some sort of meaning or value after being worked with some proper analysis technique. Thus, this study used the Categorical Analysis, which is one of the most used and known techniques of content analysis proposed by Bardin (2011) and, in recent years, has stood out among the qualitative methods of analysis, getting legitimacy and being widely recognized in the scientific production of Management field. (MOZATTO; GRZYBOVSKI, 2011).

Aiming to ensure greater reliability analysis and carry out a more qualitative interpretation, in which the researcher holds up the nuances of meaning that exist

between the units, the pairing analysis strategy was used. This strategy requires the association of the data collected to a theoretical model, enabling the comparison, ie, "this strategy assumes the presence of a strong theory in which the research is based to imagine a phenomenon model or situation investigated" (LAVILLE; DIONNE, 1999, p. 227).

The indicators defined a priori from the interpretation of the theoretical model chosen for this study are shown in Table 2. The analysis categories correspond to the dimensions.

Table 1 – Indicators of the dimensions for the implementation of ODL in University contexts.

Dimensions	Indicator (s)
Economic	Implementation strategy
	Initial Investment
	Financing medium and long term
	Efficient use of structures
	Efficient use of processes
Technology	Adequacy
	Usability
	Functionality
	System Stability
	Technical Support
	Diffusion
Organizational	Basic Infrastructure
	Technological Infrastructure
	Support Structures
	Adaptation of existing structures
	Adaptation of existing processes
	Deployment Planning
	Management of stakeholders (professors, students and technicians)
	Quality Management
	Transparency in processes of change
	Efficiency of structures
	Efficiency of the processes
Pedagogical	Focus on learning
	Didactic
	3. Pedagogical approaches
	4. Educational Innovations
	5. Evaluation of the education quality
	6. Development of the teacher skills
	Virtual Environments effective learning

Sociocultural	1. Proactive actions to promote changes
	2. Sociocultural changes (students, professors and technicians)
	3. Institutional Commitment
	4. Availability to change
	5. Availability for innovation

Source: Authors.

Considering the legitimacy and the increasing use of softwares as a support for the analysis of empirical data in qualitative research (MAIETTA, 2008), the ATLAS.ti software offered support to this stage of the research. The analysis of interviews through the program concludes with 11 papers, 2,618 words (without repetition), 123 selected and coded sections, 99 codes, 131 categories, 10 memos and 15 networks.

Analysis and Discussion of Results

Economic dimension

In the economic dimension, the planning and the necessary use of resources should be aligned with the strategy of the entire university, making possible not only classroom learning, but also to distance learning (SEUFERT; EULER, 2003). The guiding principle of this dimension relates to the efficiency and effectiveness of resource use, especially of basic infrastructure (technology infrastructure, support structures) for the development of distance education.

The professors recognize that there was an initial investment by the CAPES and the institution; however, unaware of the implementation strategies of these resources; only aware of the resource that reaches them is in the form of stock or costing for daily occur when trips to the poles. The interviewed Ent_3, Ent_6, Ent_7, Ent_10 and Ent_11 also argued that there is no interference whatsoever in the provision of resources for the development of their electronic skills. The following lines correspond to the interviewed:

> *The information I have is that by the UAB Department of Distance Education (SDE) has its own budget to finance its activities. I personally do not know the proper method of splitting form of resources to prioritize the development of skills and competencies, purchase of equipment or payment of personnel providing support (Ent_4).*

> *I do not see any bond between the resources and the development of my skills (Ent_6).*

Despite the high costs related to the development and implementation of the infrastructure of the ODL, it is important to note, according to Seufert and Euler (2003), these structures remain to university even after the completion of a specific project and, therefore, the design and use of the necessary resources must be aligned with the university throughout his strategy. In the university studied, there appears not to be a clear and defined strategy, known by the actors, about the use of

resources for distance education, although the PDI contemplates the development of distance education as one of its institutional enlargement strategies.

Technology dimension

The stability of the technology, ease of use and standardization of platforms are the main factors related to technology dimension. In this sense, Seufert and Euler (2003) point out that the ease in use and maintenance of the stability of learning platforms drive the development of teaching skills to operate in ODL through greater acceptance of such mode of education.

The interviewed teachers consider how good is the technological readiness of the university to develop their electronic competences and performance in ODL. While emphasizing the quality of equipment available (new machines, audiovisual laboratory, differentiated environment of Moodle, tailored to regional characteristics) and servers and links (although underscore that are not great, but sufficient for the development of the ODL). as one of the best available in the Northeast, they recognize the lack of specialized and trained (supporting structures) staff to provide the necessary technical support for the use of available resources in the SEAD.

Thus, the existence of support and support staff, as specialized programmers, camera operators, engineers and producers, whose responsibility is to ensure that the technologies that will transmit education operate the way they should, is important to support educators highlight Moore and Kearsley (2011), because it is up to the teachers to know enough about the technology in order to be able to ask questions, make suggestions, to know when something is not working as it should and, above all, recognize the limits and potential of each ICT available and it does not have specialized knowledge about how the technologies work not being able to solve problems if they occur.

What can be noticed with the interviews is that while realizing the benefits and the ease of integration of technology into education in the distance modality, teachers cannot develop their electronic competences because they cannot incorporate ICT in educational scenarios precisely because they are not familiar with the technology. Thus, the acceptance of the technology is impaired because, as pointed out by Seufert and Euler (2004), this acceptance depends on the perception of the benefits of the IT system, ease of use and incorporation into the teaching-learning process, criteria considered as very important by the authors to promote the development of electronic competences of teachers.

> *The teachers must know that this exists (the technology), because I think that not everyone knows. Because at some point there may be an invitation, but in my view, between the call you make until you show this tool being used, the application of it, there is a big difference. Because I'm sure the teachers who realize the application of these tools / equipment, without a doubt, they would use it. It also lacks people, in my reading, to give us that support. Why do I say that lack? Because we have more basic problems in the use of Moodle platform. To do the work, I had to put the hands dirty. I went at EAD, the man (who works at EAD) was overwhelmed with the inclusion of new students; then I asked him to create the links and I signed up everyone, I contact everyone. I was the one who just organized the background. So if there is a*

> *lack for that, one can imagine how it is to assemble, to edit video, slides and so on .... (Int_10).*

Organizational dimension

The main objective of organizational dimension refers to the adaptability and efficiency of structures and processes in order to allow the establishment of an institutional anchor for the development of distance education in a a supportive organizational environment for its implementation, determine Seufert and Euler (2003).

Therefore, from document analysis, it is clear the institution planning in respect to advances in distance education.

Due to the PDI provide of training of teaching staff to implement a local network of higher education in the distance, it was asked to the teachers if they had had prior training offered by the institution, more specifically the Department of Distance Education since the main objective of the institutional conditions for the development of teaching skills is, to Schneckenberg (2010a), to support the teacher in the learning process.

Although the teachers interviewed have suggested that the training offered was basically to present the virtual learning environment used by the institution, Moodle, and developing basic skills on the platform, they recognize that the training was very important, considering the fact that many of them did not know the AVA adopted. Excerpts of the interviews reflect this scenario.

> *So we learned how to male up an activity, how it is to make a forum, to develop a whole script to administer a discipline (Int_2).*

> *(...) But only concerning about the technical skills , only about the platform use. Nothing about teaching, just the basic (Int_7).*

Teachers also recognize that while there is basic training, they are not able to meet the existing demand at the University as a whole. This training occurred during the creation and structuring of SEAD. At the time, it was a bet of a certain University professor who worked with the Dean of Education (Proen), which encouraged the use and, to this end, decided to offer initial training and training multipliers. Multipliers, in turn administered the training and formed a register bank for when the SEAD began to offer courses. This scenario found in the institution is provided by Moore and Kearsley (2011) as being very common in institutions that decide to use the type of education the distance. The authors note that the guidance and training often originate from people who know a bit more than the others, but the instructors (teachers, tutors) often need to find themselves the limitations and potential of the technology, but also the best techniques for communication through this technology. It is common, though, in the case of higher education, "most teachers have not gone through a formal training" for the use of technology (MOORE; KEARSLEY, 2011, p.147).

Thus, because of little or no experience and knowledge, the demand for the course was higher than the number of vacancies, and without trained staff to provide

training, eventually cease to exist. Currently, for new teachers (and, perhaps, new tutors) it is not offered any training on the platform.

This background contributes to the absence of a unanimity regarding the legitimation of ODL in the institution. Part of teachers believe to be already legitimated by the environment in which students, teachers and administrative staff are included and experiencing the ODL activities in the institution. However, we also relate this acceptance to political issues, which are: University management change and the existing public policies that, through the Government effort in recent years, there is an incentive to the development of programs in education and specifically the distance education for public institutions of higher education.

For those teachers who do not recognize the legitimacy of the ODL in the institution, the main attributed question is the fact that the academic community believe that the ODL is less than or no quality when compared to classroom teaching, and therefore, there is a general bias around this type of education, especially for those in which the technology is not part of everyday life, which have some resistance to the use of technological resources. The institution itself does not recognize the workload of teachers when he performs in ODL, just being counted hours worked in regular education. Those working in ODL have reduced their presence hours and still need to send specific form fit and hours of compensation for the Office of Personnel Management, say the teachers interviewed. Thus, although the ODL has passed to occupy an increasingly significant place in the country, one can still find a lot of resistance and prejudice against this type of education, seen often as a lower quality education because of the many failed initiatives which marked the beginning of distance learning in Brazil (CORRÊA; SANTOS, 2009).

The fact that professors receive scholarship to attend as a teacher in distance education courses appears both as a factor that makes legitimate the ODL as a purely financial factor for the participation of the teacher (they participate because they know that is a way to increase salary, considering that their regime is unique and has no dedication as having a paid job outside the institution, but not because they believe or perceive the EAD as a valid mode of education and institutionally recognized). In the following, a professor talk:

> *I do not (realize acceptance). My perception is about marketing. Teachers are engaged in this proposal because even being in exclusive dedication framework they can receive extra remuneration from the university (Ent_6).*

Pedagogical dimension

Although the teaching qualification appear as essential for the region to have the benefits from the government's investment in the establishment of the University, the main concern of the institution, detected in the documentary analysis in the Training Plan prepared by the Department of Personnel Management (SGP) between the period 2009-2014, ie from the time of creation of the SEAD and teacher training Institutional Plans (PLANFOR) for the periods 2009-2013 and 2014-2017, is about teacher training programs master's and doctorate in order to increase the number of Masters and PhDs. Even though the teaching qualification is a latent

concern in the plans discussed, none of them has indication for supporting and encouragement of teacher formation and capacitation to operate in ODL.

In line with the document analysis, which were not identified any predictions for professor qualification to operate in ODL, the Ent_1 teachers, Ent_3, Ent_4, Ent_5, Ent_6, Ent_7, Ent_8, Ent_10 and Ent_11 do not realize the existence of such stimuli or incentives offered by the institution. The reason given by them is the lacking recognition of distance education at the institution, that is, they believe that the ODL is not fully legitimized to the point of becoming an institutional policy on professor qualification to operate this type of education. In this sense, Stalmeier (2006) points out to the fact that the use of ICT in higher education is not simply a matter of encouraging teachers to adopt new tools and techniques. The use of technology changes forms of work - both for the individual and for the organization and, in this case, the entire organization needs to be involved and engaged in this change.

The speeches of the professors Int_3, Int_6 and Int_7 supports this position.

> *There is no motivation (for this). First the university does not recognize distance education as a mode with quality, it is always something taken as with no quality at all, as if only in the presence there is quality, nothing beyond that (Int_3).*

> *I do not notice it. I feel like the University doesn't take a chance (Int_6).*

It is necessary to pay attention to the fact that the process of formation may be a significant advantage, considering that teachers will better understand the design of the form and meaning of competence to act in the distance (GILBERTO, 2013) and in the case of the analyzed university teachers have not displayed an institutional concern with the process of training and professor qualification.

It has also been said that there is no formally responsible agency or sector for such action (either for distance learning or in classroom), despite this being one of the responsibilities of SEAD.

> *I do not realize it. (laughs). So we even receive the information at ODL, you know that there is a new software, you know that there is a new environment, but it lacks working. If we take the web conference structure, we have a very good structure, although not everyone uses. It is a magnificent room, two digital whiteboard, projector, speaker, notebooks on all sides, there is at all but one uses very rarely that. You enter at the studio and it is the same way. The studio is there, cameras, tele-prompt, microphones, soundboard, video stand, but it lacks reach for us. I confess to you that I have received the invitation to make a presentation to the class. But this is not the maximum that can be drawn here. A video like that, we can do at home, domestic (Int_10).*

Though the concern with the importance and quality of education has been a general uneasiness of the teachers interviewed, Seufert and Euler (2003) suggest that the methodological and didactic design of learning environment has been one of the factors that most influence the didactic and pedagogical potential due to new

teaching and learning ambient and media, and that, secondly, appears to recognize all the university for this new teaching-learning model.

Thus, the main recipients of this dimension are therefore teachers, who should receive the lasting benefits of the implementation of ICT in the university context and, thus, be able to use ICT in conducting educational activities and evaluate their use and also to estimate the effects of using the teaching-learning process (STALMEIER, 2006).

Sociocultural dimension

The sociocultural dimension relates to the willingness to innovation of the people involved and hence causing long-term behavior changes.

The factors of sociocultural dimension are considered very important conditions for the development of e-competences of teachers to operate in ODL, highlight Seufert and Euler (2003), and its absence is seen by many experts, often as a major obstacle to the development of such competences.

> *What can be noticed, given the analysis of this dimension is that teachers believe that although they see some kind of culture change in order to legitimize the work in ODL (Ent_1, Ent_2 and Ent_7), it is not understood yet as part of the institution's culture, since there is no recognition of the work of those working in the distance at the University (Ent_1, Ent_3, Ent_4, Ent_6, Ent_9, Ent_10 and Ent_11), and, to a certain extent marginalization about this type of education (Ent_2, Ent_5).*

In the following the speeches of professors.

> *First, the institution itself does not understand the ODL as an organ of the University. It doesn't work like that. You can even check the university council, we do not have a seat on the university council. Every coordinator of the University is a counselor, all right? But ODL coordinators are not counselors. How is that? If the status says the coordinator is a counselor? Then It is the Statute for University. But the institution does not want the coordinators of EAD on the board. (...) Then you tell me what's the difference of a coordinator for distance and presence education? The presence coordinator has secretary, has the collegial, has a whole apparatus that helps in making decisions; the coordinator of the distance does not have it. no desk, no collegiality, nothing! And it's everything more complex. And difficult to develop my skills (Int_3).*

It is important to note that the use of ICT in educational innovation set up as a special challenge to the traditional work culture in higher education (STALMEIER, 2006). It is also important to pay attention to the fact that the fast pace of technology development tends to overcome, according to Schneckenberg (2008), strategic planning and education program in higher education; with this, the universities fail to systematically explore the innovative technology potential. In this sense, policies and processes by which the university integrates the use of ICT for its key processes of teaching and learning need to be clear on the institutional context for members to understand it as such a legitimate mode as the presential mode.

Final considerations

From the field research it was noticed that the formal implementation of distance education in the institution goes back to early 2009 when it joined the System Open University of Brazil (UAB). Several notices were approved at the Capes for the purchase of equipment and professional training to ODL. On institutional conditions, it can be concluded that:

For the Economic dimension: The provision of resources for basic infrastructure and the cooperation public notices for long term financing from ODL were recognized by teachers interviewed as important to the viability from distance education in the institution.

However, to encourage the development of e-competences of teachers, the institution must also make transparent the strategy for implementing the resources available for distance education for the entire academic community, therefore, to the interviewees, there is no interference whatsoever in the provision of resources the development of e-competences. This dimension is therefore below which expresses the minimum quality benchmark for distance education, not influencing the development of electronic teaching skills to act in the ODL in the institution.

For Technology dimension: There is a technological apparatus and quality available recognized by the teachers interviewed, although there is still lack on the stability of servers and links of the institution (basic requirement). The available equipment is not friendly enough to the teachers surveyed, and the lack of support staff and support does not help the development of electronic competence. However, this dimension is beyond that expresses the minimum quality benchmark for distance education, and is able to influence, in general, positively, the development of electronic teaching skills for the performance in ODL at the institution.

For Organizational dimension: Survey results clearly show that several factors of this dimension are important for the development of electronic teaching skills. Although below the expressing minimum quality benchmark for distance education, this dimension can positively influence the development of electronic teaching skills to operate in ODL. In PDI, there is, in various passages of text, predicting the stimulus and boost of ODL, suggesting a plan for implementation of this type of education in the institution (crucial factor for the development of electronic teaching skills according to the literature). The interviewed teachers also recognize the importance of initial training they received (although it was only for operationalization of the platform), which may have aroused the teachers a desire for development of e-competence. Issues of institutional policies must be overcome and the frequency of training needs to exist in order of establishing ODL in the institution.

For the Pedagogical dimension: To the teachers interviewed this dimension can enable the development of their electronic competence by offering courses and teacher training to operate in ODL. The own Secretary of Distance Education of the institution may be responsible for this training, teachers suggest, corroborating one of the formal responsibilities foreseen in the establishment of SEAD, namely: the development of the competence of teachers. This dimension, therefore, is able to influence the development of e-competence, though little or nothing is formally

made by the institution in this direction and therefore sets a framework far short of expressing minimum quality benchmark for distance education.

For the Sociocultural dimension: Although, in the literature, the factors of this dimension are considered very important for the development of electronic teaching skills, the outcome of this study suggest that this aspect, at the studied institution, the development of such competence has been made impossible. the teachers interviewed do not realize the ODL as part of the institution's culture and therefore are resistant to engage in this type of education. Thus, this dimension sets a framework far short of expressing minimum quality benchmark for distance education.

At the institutional conditions for the development of e-competences of professors analysis, it was found that, despite presenting conditions below the minimum standard of quality in the economic, organizational and far below the socio-cultural and educational dimensions, the University considered has invested in distance education. The offers have done a significant contribution to initial and ongoing training. in partnership with UAB System, through extension courses (Sustainable Schools and formation of Municipal Councilors of education) graduation (Visual Arts, Bachelor of Public Administration, Biology, Physical Education, Physics, Mathematics, Chemistry and Education) and specialization (Public Management, Municipal Public Management, Health Management, Biology Teaching, Education, contemporaneity and New Technologies and Chemistry and Biology teaching).

Due to the amount of courses, it is interesting that the University plans to contribute towards training of teachers who also turned to work in distance learning to improve their institutional conditions, enabling thus a teaching qualification and, consequently, an improvement in the quality of education, especially when one considers that most of the teachers inserted in the ODL have little or no experience in this modality.

Thus, there is the necessity for the University considered to strengthen ODL institutionally, either through expansion of its staff, in the allocation of technical and administrative staff along the Coordination of distance education courses, or recognizing the workload for teachers that operate in this mode, or even promoting the development of e-competences of teachers.

For future research, it is suggested that interviews are conducted with other stakeholders (students and non-teaching technical) in the process. It would be important to discuss about conception of education for teachers and students, after all this conception of the subject defines the practices and processes of teaching and learning. It is also suggested the construction of a quantitative model to validate the constructs and variable analyzed.

Referências

BARDIN, Laurence. **Análise de conteúdo**. São Paulo: Edições 70, 2011.

BAUER, Martin W.; AARTS, Bas. A construção do corpus: um princípio para coleta de dados qualitativos. In: BAUER, M. W.; GASKELL, G. **Pesquisa qualitativa com texto imagem e som**: um manual prático. Petrópolis: Vozes, 2002.

BEHRENS, Marilda Aparecida; PEREIRA, Liandra. Os paradigmas e os reflexos da formação de professores na

docência universitária. In: ENS, Romilda Teodora; BEHRENS, Marilda Aparecida. **Ser professor**: formação e os desafios na docência. Curitiba: Champagnat, 2011.

BELLONI, Maria Luiza. **Educação a distância**. 5.ed. Campinas, SP: Autores Associados, 2009.

BIANCHETTI, Lucídio. Formação de docentes e pós-graduação: docente ou pesquisador? Há futuro para esse ofício? **Educação Unisinos**, v. 6, n. 3, p. 272-279, 2012.

CORRÊA, Stevan de Camargo; SANTOS, Larissa Medeiros Marinho. Preconceito e educação a distância: atitudes de estudantes universitários sobre os cursos de graduação na modalidade a distância. **ETD – Educação Temática Digital,** Campinas, v. 11, n. 1, p. 273-297, jul./ dez. 2009.

CUNHA, M. I. Ensino como mediação da formação do professor universitário. In: MOROSINI, M. C (org.). **Professor do ensino superior**: identidade, docência e formação. Brasília: Plano Editora, 2001.

DECMAN, Mitja. Modeling the acceptance of e-learning in mandatory environments of higher education: The influence of previous education and gender. **Computers in Human Behavior**, v. 49, p. 272-281, 2015.

DIAS SOBRINHO, José. Avaliação educativa: produção de sentidos com valor de formação no Brasil. In: ISAIA, S.M.A.; BOLZAN, D. P. V.; MACIEL, A. M. R. (Org.). **Pedagogia universitária**: tecendo redes sobre a Educação Superior. Santa Maria: Editora UFSM, 2009, p. 35-48.

EHLERS, Ulf-Daniel; SCHNECKENBERG, Dirk. Introduction: Changing cultures in higher education. In: EHLERS, Ulf-Daniel; Schneckenberg, Dirk. **Changing cultures in higher education**: Moving ahead to future learning. New York: Springer International, 2010.

ENS, Romilda Teodora; GISI, Maria Lourdes; EYNG, Ana Maria. Formação de professores: possibilidades e desafios do trabalho docente na contemporaneidade. **Revista Diálogo Educacional**, Curitiba, v. 11, n. 33, p. 309-329, maio/ago. 2011.

FARID, Shahid et al. Identification and prioritization of critical issues for the promotion of e-learning in Pakistan. **Computers in Human Behavior**, v. 51, p. 161–171, 2015.

GILBERTO, Irene Jeanete Lemos. A educação a distância no ensino superior e a lógica das competências. **Revista Gestão Universitária na América Latina**, v. 6, n. 1, p. 273-286, jan. 2013.

GOUROVA, Elissaveta et al. Adapting educational programmes according to e-competence needs: The Bulgarian case. **Interactive Technology and Smart Education**, v. 11, n. 2, p. 123-145, 2014.

KENSKI, Vani Moreira. **Tecnologias e ensino presencial e a distância**. Campinas: Papirus, 2003.

LATCHEN, Colin. Using ICT to train teachers in ICT. In: DANAHER, Patrick Alan; UMAR, Abdurrahman. **Teacher education through open and distance learning**. Vancouver: Commonwealth Learning, 2010.

LAVILLE, Christian; DIONE, Jean. **A construção do saber**: manual de metodologia da pesquisa em ciências humanas. Porto Alegre: Artmed, 1999.

MAIETTA, Raymond C. Computer-assisted data analysis. In: GIVEN, Lisa M. **The Sage Encyclopedia of Qualitative Research Methods**. California: SAGE Publications, 2008.

MARCELO, Carlos. Desenvolvimento profissional docente: passado e futuro. **Revista de Ciências da Educação**, n. 8, p. 7-22, 2009.

MARTINS, Onilza Borges. Os caminhos da EAD no Brasil. **Revista Diálogo Educacional**, Curitiba, v.8, n. 24, p. 357-371, maio/ago. 2008.

MENDONÇA, José Ricardo Costa et al. **Competências profissionais de professores do ensino superior no Brasil**: proposta de um modelo integrado. In: 2.ª Conferência do FORGES – Fórum da Gestão do Ensino Superior nos Países e Regiões de Língua Portuguesa, 2012, Macau, China, 2012.

MERRIAM, Sharan B. **Qualitative research and case study applications in education**. San Francisco: Jossey-Bass, 1998.

MERRIAM, Sharan B. **Qualitative research in practice**: examples for discussion and analysis. San Francisco: Jossey-Bass, 2002.

MOORE, Michael; KEARSLEY, Greg. **Educação a distância**: uma visão integrada. São Paulo: Cengage Learning, 2011.

MOZATTO, A. R.; GRZYBOVSKI, D. Análise de conteúdo como técnica de análise de dados qualitativos no campo da administração: Potencial e desafios. **Revista de Administração Contemporânea**, v. 15, n. 4, p. 731-747, 2011.

PAIVA, Kely Cesar Martins. **Gestão de competências e a profissão docente**: um estudo em universidades no estado de Minas Gerais. 2007. 278 f. Tese (Doutorado) – Programa de Pós-Graduação em Administração, Universidade Federal de Minas Gerais, Belo Horizonte, 2007.

SCHNECKENBERG, Dirk. **eCompetence development measures for faculty in higher education** – A comparative international investigation. Tese. Fachbereich Bildungswissenschaften der Universität Duisburg-Essen. Standort Essen, 2007.

SCHNECKENBERG, Dirk. El e-learning transforma la educación superior. **Educar**, n.33, p.143-156, 2004.

SCHNECKENBERG, Dirk. Face the human factor: The role of eCompetence in the future of higher education. In: NUNES, M.B.; McPHERSON, M. **International Association for Development of the Information Society**: Multi-Conference on Computer Science and Information Systems, 22-27 July, p. 98-105, 2008.

SCHNECKENBERG, Dirk. Overcoming barriers for eLearning in universities: portfolio models for eCompetence development of faculty. **British Journal of Educational Technology**, v.41, n. 6, p. 979-991, 2010a.

SCHNECKENBERG, Dirk. What is e-Competence? Conceptual framework and implications for faculty engagement. In: EHLERS, Ulf-Daniel; Schneckenberg, Dirk. **Changing cultures in higher education**: Moving Ahead to Future Learning. New York: Springer International, 2010b.

Schneckenberg, Dirk; Wildt, Johannes. Understanding the concept of ecompetence for academic staff. In: Labhrainn, Mac; LEGG, McDonald; Schneckenberg, Dirk; WILDT, Johannes. **The challenge of eCompetence in academic staff development.** Galway: CELT, 2006.

Schönwald, Ingrid. **Sustainable implementation of e-learning as a change process at universities**. St. Gallen, Switzerland: Swiss Centre for Innovations in Learning, 2003.

SEUFERT, Sabine; EULER, Dieter. **Nachhaltigkeit von eLearning-Innovationen**: Ergebnisse einer Expertenbefragung. Arbeitsbericht 1 des Swiss Center for Innovations in Learning St. Gallen: Institut für Wirtschaftspädagogik, Juni 2003.

SEUFERT, Sabine; EULER, Dieter. **Nachhaltigkeit von eLearning-Innovationen**: Ergebnisse einer Delphi--studie. Arbeitsbericht 2 des Swiss Center for Innovations in Learning St. Gallen: Institut für Wirtschaftspädagogik, Januar 2004.

SILVA, Maria Aparecida et al. **Projeto pedagógico do curso de especialização em gestão pública**. MEC: Brasil, 2012.

SOUZA, Alba Regina Battisti; SARTORI, Ademilde Silveira; ROESLER, Jucimara. Mediação pedagógica na educação a distância: entre enunciados teóricos e práticas construídas. **Revista Diálogo Educacional**, Curitiba, v. 8, n. 24, p. 327-339, 2008.

STALMEIER, Marjo. Ecompetence profiles: an instrument for ecompetence management. In: Labhrainn, Mac; LEGG, McDonald; Schneckenberg, Dirk; WILDT, Johannes. **The challenge of eCompetence in academic staff development.** Galway: CELT, 2006

UMAR, Abdurrahman; DANAHER, Patrick Alan. Setting the scene for interrogating teacher education through open and distance learning. In: DANAHER, Patrick Alan; UMAR, Abdurrahman. **Teacher education through open and distance learning**. Vancouver: Commonwealth learning, 2010.

VASCONCELLOS, Maria Drosila. O trabalho dos professores em questão. **Revista Educação e Sociedade**, Campinas, v. 23, n. 81, p. 307-311, 2002.

VOLK, Benno; KELLER, Stefan Andreas. The "Zurich E-Learning Certificate" A role model for the acquirement of eCompetence for Academic Staff and an example of a practical implementation. **European Journal of Open, Distance and E-Learning**, p. 1-8, 2010.

ZABALZA, Miguel. **O ensino universitário**: seu cenário e seus protagonistas. Porto Alegre: Artmed, 2007.

ZANOTELLI, Reivani Chisté. **Professores do ensino superior frente às novas tecnologias**: usos e desusos do Computador e da Internet no cotidiano de trabalho. 2009. 145 f. Tese. (Doutorado) – Programa de Pós-Graduação em Psicologia Clínica, PUC/RJ, Rio de Janeiro, 2009.

Submitted: 03/January/2016. Approved: 18/May/2016.