



Article

Virtual Learning Environments (VLE) as tools to support Complex Learning Environments (CLE)

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ABSTRACT

This article intends to recognize some forms of appropriation of Virtual Learning Environments (VLE) in Complex Learning Environments (CLE), given to its particularities, aiming to reflect if they are contributing effectively to the learning process in higher education courses and verify if they only work as reaffirmation of status quo mechanisms. It was conducted a descriptive exploratory research, which started with a bibliographical study, followed by a sample survey from 150 journal articles published in the period from 2009 to 2014 on the topic in question. The results are paradoxical because, despite showing some evidence of recursive practices, they also present twenty-one requirements that seem to demonstrate potential, since they entered into a constant descent movement, to meet the demands of new generations of students in higher education. It should be mentioned that, despite the difficulties that might represent a decision in CLE, the importance of studying and reflecting on this subject, and to find the best options of didactic-pedagogical actions is so significant that can represent the difference between discourage and encourage failure

or motivate and provide effective options of success in learning processes.

Keywords: Complex Learning Environments. Virtual Learning Environment. Decision Making. Higher Education. Learning.

RESUMEN

Este artículo tiene como objetivo reconocer algunas formas de apropiación de los entornos virtuales de aprendizaje (AVAs) en entornos complejos de aprendizaje (ACAs), teniendo en cuenta sus características específicas, buscando reflejar si están contribuyendo eficazmente al proceso de aprendizaje los cursos superiores y comprobar como mecanismos de reaseguro de un status quo. Por lo tanto, una investigación exploratoria descriptiva se llevó a cabo, que se inició con un estudio bibliográfico, seguido de una muestra de la investigación a partir de 150 artículos de revistas publicados desde 2009 hasta 2014 sobre el tema en cuestión. Los resultados son paradójicos, porque a pesar de mostrar una cierta constancia siendo prácticas

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recurrentes también tienen veintiún requisitos que parecen mostrar potencial, que son parte de um movimiento de descenso constante, para satisfacer las demandas de las nuevas generaciones de estudiantes de Educación Superior. Cabe mencionar que, a pesar de las dificultades que pueden representar tomar una decisión en ACAs, la importancia de estudiar y reflexionar sobre este tema, y para encontrar las mejores opciones de acciones didáctico-pedagógicas es tan significativa que puede representar la diferencia entre desmotivar y el fracaso de crianza o motivar y proporcionar opciones eficaces para el éxito en los procesos de aprendizaje.

Palabras clave: Ambientes de Aprendizaje Complejos. Entorno Virtual de Aprendizaje. Toma de decisiones. Educación universitaria. El aprendizaje.

RESUMO

Este artigo tem o objetivo de reconhecer algumas formas de apropriação dos Ambientes Virtuais de Aprendizagem (AVAs) nos Ambientes Complexos de Aprendizagem (ACAs), dadas às suas especificidades, buscando refletir se estão contribuindo, efetivamente, para o processo de aprendizagem nos cursos superiores e verificar se apenas funcionam como mecanismos de reafirmação de um status quo. Para tanto, foi realizada uma investigação exploratória descritiva, que se iniciou como um estudo bibliográfico, seguida por uma pesquisa de amostragem a partir de 150 artigos de periódicos publicados no período de 2009 a 2014 sobre o tema em questão. Os resultados são paradoxais, pois, apesar de demonstrarem certa constância de práticas ainda recursivas, também apresentaram 21 requisitos que parecem demonstrar potencial, desde que inseridos em um movimento de constante ascendência, para atender as demandas das novas gerações de discentes da educação superior. Ressalva-se que, apesar das dificuldades que a tomada de uma decisão

em ACAs pode representar, a importância de se estudar este tema, de refletir sobre ele e de se encontrarem as melhores opções de ações didático-pedagógicas é tão significativa que pode representar a diferença entre desmotivar e fomentar o fracasso ou motivar e proporcionar opções efetivas de sucesso nos processos de aprendizagem.

Palavras-chave: Ambientes Complexos de Aprendizagem. Ambiente Virtual de Aprendizagem. Tomada de decisão. Educação superior. Aprendizagem.

INTRODUCTION

The advent of computer resources and technology has brought many new challenges and therefore large demands on all educational levels, culminating in the emergence of new theories, methods and modes of learning. Recent trends flow, so for the need of the occurrence of metamorphoses to monitor the new demands of current Learning Complex Environments (CLE) (GOUGH, 1999; PUNTAMBEKAR; HUBSCHER, 2005; RUPP et al., 2010).

As will be discussed in more detail in this work, one of the main tools of CLE is the global system of networks of interconnected computers, the Internet, more and more accessible to diverse segments of Brazilian society. It provides greater speed in communications and allows more possibilities of interactions between mediators and learners, and between learners and apprentices. In this new way of promoting learning, one of the network resources are the virtual platforms that have communication and information interfaces for measurement and development of activities, called Virtual Learning Environments (VLE).

A question emerges on this reality: as the use of VLE can contribute CLE of higher education?

It is recognized, as stated by many thinkers in the area, that innovations in learning environments tend to be more sustainable in the long term, when they occur in their most incremental ways in constant ancestry (TIDD; BESSANT; PAVIT, 2008) and simultaneously, there is a shortage of research for the observance of the current learning trends in CLE, especially those consisting in higher education. Thus, this work aims to recognize some current ways of appropriation of VLE in CLE.

Therefore, such work was designed as a descriptive exploratory research, which begins in a bibliographic study on the VLE and the CLE and, later, as research advances with the completion of a sampling survey in which they investigated 150 articles, of which 50 were selected randomly and simple drawing, for effective data collection. These items were taken from periodicals published between 2009 and 2014 on the VLE and its use in the context of higher education.

It recognizes that to ensure performance and quality of learning outcomes is the great challenge of the CLE, due to the complexity of these environments. In this sense, VLE assume a very important role, because in addition to viabilizarem numerous possibilities before plastered, can function as tools and instruments to support the success of teaching and learning, which will depend on the strategies taken by the agents of this process. Thus, recognizing forms of appropriation of VLE in CLE allows discuss alternatives and to reflect on possible noted advantages and disadvantages that may appear only as a reaffirmation of the status quo or as a genuine establishment of an innovation path to higher education of the new generations of students.

1. DEVELOPMENT

1.1. Conceptual aspects

1.1.1 Virtual Learning Environments (VLE)

The VLE main aim is to serve as a building space of knowledge through the development of educational activities mediated by the use of Information and Communication Technologies (ICT), valuing the interaction and collaborative work. According to Santos (2006), the VLE break the boundaries of the attendance classroom and favor the formation of virtual learning communities.

Seeking to meet the constant demands that are constantly emerging in CLE in higher education, the number of VLE tools grows every day: they are e-mails, open mailing lists, forums, portfolios, conferences, chats, wikis, blogs, quizzes, questionnaires, among others. In all VLE can still circulate text, images, podcasts and videos, in order to integrate and leverage the power of learning through proper communication to the different needs and personal characteristics of students. Thus, such tools can be used to access content and activities of courses and disciplines, and can perform different activities adapted and \ or planned to provide an active learning, interacting with virtual colleagues, with mediators and \ or tutors, exchanging ideas, discussing and collaborating with their work, to monitor the trajectory of the activity report and evaluations (SILVA, 2009).

According to Milligan apud Pereira (2007) Despotović-Zrakić and contributors (2012), for learning management and provision of materials, VLE need to have certain tools to meet the following requirements:

- (a) control time through some explicit means to provide materials and activities at certain times of the course, for example, the resource calendar, scheduling, and delivery of content and activities, among others;
- (b) evaluate tools for performing mainly formative assessments, for example, the continued performance of the learning process evaluations, acquisitions of expected

- skills or competencies, self-assessment, peer review, among others;
- (c) communicate in synchronous and asynchronous means;
 - (d) provide private spaces available for participants to exchange and store files;
 - (e) manage resource base as a way to manage those less formal than teaching materials, such as FAQ (Frequently Asked Questions), search engines, among others;
 - (f) support the use of the tool itself through features such as tutorials, online helps on the environment, directed navigation, tours, among others;
 - (g) maintain the upgraded environment through constant interactions between the agents of the teaching and learning processes;
 - (h) allow the occurrence of the teaching and learning processes in formal, non-formal or informal in different modes such as: attendance, partial distance (blended or b-learning) or Distance Learning (DL);
 - (i) provide adaptive learning options through different paths for access to the contents learned in a holistic, integrated, without compartmentalizing, and applications and/or reflections in a practical context or by means of adaptive feedback or programmed groups such as, e.g. using quizzes, following the evaluation process, as in a movie and not based on the result of single evaluation, among others.
- journalistic nature or free, as well as storage and production of documents;
- (b) communication and asynchronous and synchronous interaction of agents of the teaching and learning processes, such as teachers, students and guests;
 - (c) the management of administrative, bureaucratic and didactic-pedagogic;
 - (d) production activities and individual assessments or group;
 - (e) conducting education in different forms and can be applied or suitable for any of them;
 - (f) adaptive learning, among others.

Synthetically, VLE are software operating on web servers that can be accessed via internet by users geographically distributed, forming virtual communities with defined objectives, such as the learning.

1.1.2 Complex Learning Environments (CLE)

The term "learning environment" seems to suggest a sense of space and place - is a library, a school, a classroom. Such a design is feasible because the learning process, throughout history, has also been held in physical spaces like these. Today, however, a better way to think of learning environments is to imagine one or more support systems that make it possible for human beings to learn and \ or allow not only accommodate the specific needs of each individual but also support human relations essential for effective learning. "The learning environments are also understood as structures, tools and communities (formal or otherwise) that inspire teachers and students to build knowledge, develop skills and competencies (21st CENTURY LEARNING ENVIRONMENTS, 2014)."

Thus, Pereira (2007) Despotović-Zrakić and contributors (2012), in summary form, infer that VLE make use of the internet to allow virtual and integrated manner:

- (a) access to content through multimedia didactic materials, technical and scientific,

In this sense, the CLE, also known as global learning environments, are compounds in cyberculture contexts, which have the potential to expand the field of perception of people, creating conditions that will encourage and facilitate the teaching and learning processes, so both teachers and students serve as mediators in the construction of knowledge of each other.

The praxis, with the use of virtual environments and resources CLE allows one to learn a pleasurable manner, using the Internet, as well as trigger innovative life possibilities, promoting, by a desire to create and invention, discovery modes more efficient use of technological resources in an attempt to find ways and proprietary solutions instead of using ready-made recipes. The learning process in this context, both autonomous and collaborative, developed the basis for the skills of students to build their knowledge through a transformative learning (MORIN, 2006; BOETTCHER, 2011).

It is stated thus an CLE involves existing epistemological assumptions in biological and quantum theories, such as autonomy, complexity, indeterminacy, causality, intersubjectivity, interactivity, uncertainty, self-organization, dialogical, among others. Therefore, understanding of CLE opposes strongly the sustained modeling by instructionist theories and \ or traditionalists, that is linear, traditional transmission of knowledge with students liabilities and able to duplicate the assessments which was addressed in classroom. Divergently, the referred quantum and biological theories offer clues that undermine the anthropocentric idea of supremacy of the individual, dissolving it in nature due to its physical and chemical conditions. Such theories can be exploited by educators to rethink education for the new generations and therefore reframe their didactic and pedagogical practices (ARAÚJO, 2007; CARVALHO, 2011).

InCLE(GOUGH, 1999; PUNTAMBEKAR; Hübscher, 2005; Rupp et al, 2010), there is a predominance of complex thinking. So there is no space for the Cartesian thought that is configured on a quest for establishing and maintaining the method for supposedly result in getting a true knowledge and, consequently, in a suitable know (MORIN cited MORAIS, 2014). The questions that arise in this opportunity are: what is a suitable knowledge? Is there a knowledge perfectly suited effectively? If so, how you can achieve it?

Based on the understanding of non subsistence or range of impossibility of knowledge perfectly suited because of the many nuances and possibilities that exist in a CLE recognizes the predominance of a complex thought, the principles can serve as a reference for thinking about complexity. Some of these principles as following (MORIN, 2006; MANSUR; CARVALHO; BIAZUS, 2011):

- (a) principle of retroactivity: part of the view that the possibility of the facts and phenomena is complex, that is, is not linear, so that the effect acts on the cause and vice versa;
- (b) hologramatic principle: is based on the idea that the whole is inscribed in part, while the part is in all;
- (c) principle of recursion: the process in which the products and the effects are, at the same time causes and producers of what produced them, that is, deny the linear determinism;
- (d) organizational or systemic principle: defending an opposite point of view to the reductionist view of the Cartesian thought, which should and must be fragmented to be understood;
- (e) dialogic principle enables the rational combination of contradictory notions for the design of the same phenomenon, and

admit the probable coexistence of antagonistic notions conceptually, although inextricably linked, such as the dialogic of order and disorder in the organization of organizational structures;

- (f) principle of reintroducing: introduces the notion that knowledge is a reconstruction and translation of a subject immersed in a particular culture and time, based on aspects of the junction of opposites (dialogical), the solidarization of dichotomized knowledge and the knowing subject (epistemological, active, conscious, responsible, citizen and solidarity);
- (g) principle of autoeco-organization: it recognizes recursion and the dependence of the person (autos) and the environment (ekos) by the individual's indispensability to take power, organization and environmental information, that is, touts the inseparability between ecosystem and person.

It should be noted, according to Morin's ideas (2006), that the complexity of environments, including learning, calls for effective and comprehensive reform of thought, so intense that it can be compared to that caused in the past by Copernican paradigm.

1.1.3 Decision making in Complex Learning Environments (CLE)

Making decisions is the most important job in any complex environments, including the CLE (GOUGH, 1999; PUNTAMBEKAR; HUBSCHER, 2005; RUPP et al., 2010), also being the hardest and risky ones, since there are important limits in an attempt to predict the future, that is, the consequences and third party reactions. Decisions can in this context be understood as a result of the adoption of a given strategic course of action, which elucidates and composes goals as well as means and grant the use of resources to achieve them. This strategic course begins from the recognition of a stimulus for action, which

refers to the identification of a problem and ends with specific commitment to action, that is, the proposed solution. Therefore, it is necessary to consider certain variables and specific aspects of each decision-making, because there are no limits to the number of models that can be developed, either a formula that applies, it is completely appropriate for all cases (SIMON apud LIMA JUNIOR, 2009; CHOO apud TEIXEIRA, 2014).

It has been questioned, however, if it is possible to make appropriate decisions in CLE frequently. Shimizu (2010) suggests 'no', because, according to his point of view, except the taking of routine and known decisions, the process of making decision alternatives and select the best one is almost chaotic because the agents of the teaching process and learning have no clear view of all the objectives and the means defining the decision problem. This process is also complex, since issues such as uncertainty, problem size, lack of structure, impossibility of knowing all the alternatives that are available to the decision-making, among others, can derail the systematic application of most methodologies decision, which tend to use subjective judgments.

This does not mean take appropriate decision on an CLE; It is a matter of luck or an occurrence to chance. There are actions and methods that, while not ensuring a choice of perfect decision and completely suitable, can help in this mission, strategically supporting the process of decision making.

First, it must be recognized that one of the major difficulties in decision-making on an CLE (GOUGH, 1999; PUNTAMBEKAR; HUBSCHER, 2005; RUPP et al., 2010) is the complexity of assessing the future, which makes each decision is always accompanied by certain risk limits and degree of uncertainty. Thus, make a decision in a CLE is an act that requires courage, multifocal attention, creativity and strength in solving a problem, with the intention of achieving positive results

in the learning process. And, while well characterized and understood, the process of decision-making can rely on techniques such as

the model used for purposes of this research and exemplified in Figure 1:

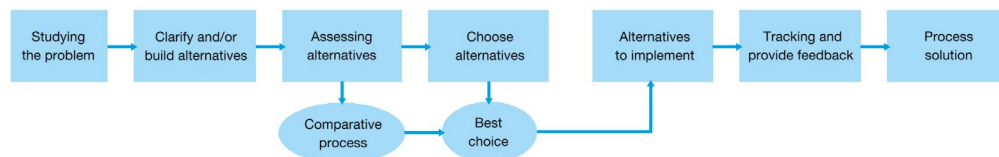


Figure 1: Scheme to support decision-making in CLE.

Source: Personal Collection

1.2 Methodology

Based on the objective proposed in this article, we intend to propose a theoretical contribution through a descriptive exploratory research with the potential to provide an overview of the approximate type in relation to the given fact. The option for exploratory research was given the recognition of the need for expansion of accumulated knowledge and systematized on the use of VLEs as support instruments in Brazilian CLE, and set yourself up as a proposal that adds information on the subject that aims to investigate (FARIA; CUNHA; FELIPE, 2008; GIL, 2010; VERGARA, 2014).

For the realization of this work, it was decided to conduct a descriptive research, in order to enable viewing, sorting and evaluation of data, without therefore having the intention to confirm or deny exploratory hypotheses, making room for a kind of explanatory research, supported in trial. Allows also and above all exhibit the characteristics of a given phenomenon, population or establishing relationships between variables, basing on four aspects: overview, registration, analysis and interpretation of current phenomena, aiming its operation in the present (ALYRIO, 2008; MARCONI; LAKATOS, 2011; GIL, 2010).

For the inference of the data, we had chosen a quantitative approach, in which, by

means of statistical techniques, we sought to translate into numbers data and information to classify journals and subsequently analyze them. Thus it aimed to generalize the results, exercising a control and a point of view counts and magnitude of the phenomena, allowing replicas and focuses on specific points of them and comparisons with similar studies (MARCONI; LAKATOS, 2011; SAMPIERI; COLLADO; LUCIO, 2013).

This research consisted of a survey of practices related to the use of VLE as a support instrument in Brazilian CLE. Therefore, we carried out a survey, sampling, research and came to a number of 150 articles on higher education journals published in different period from 2009 to 2014. Of the total sample, it reached a number 50 articles defined by random distribution, that is, at random, which contributed to the survey were not affected by inadequate variables, known and unknown. It was decided, therefore, the systematic search for a large sample and the random selection of samples effectively considered, using pieces of paper on which the names of the scientific work for the subsequent execution of a simple drawing were written. Finally, the articles that composed the effective sample had their tabulated and analyzed data (GIL, 2010; SAMPIERI; COLLADO, LUCIO, 2013).

1.3 Results and analysis

The following are the characteristics of the sample:

PUBLICATION YEAR	%	CONSULTED ARTICLES
2009	18%	<p>AXT, M. et al. Rede de desassossegos: problematizações acerca de uma experiência pedagógica no ensino superior na interseção com ambientes virtuais. R. Contrapontos, v. 3, n. 2, p. 243-254, 2009.</p> <p>FRANÇA, G. Os ambientes de aprendizagem na época da hipermídia e da educação a distância. Perspectivas em Ciência da Informação, v. 14, n. 1, p. 55-65, 2009.</p> <p>JENSEN, L. F.; ALMEIDA, O. C. S. A correlação entre falta de interatividade e evasão em cursos a distância. In: Anais, XV Congresso ABED, 2009.</p> <p>KENSKI, V. M. et al. Ensinar e aprender em ambientes virtuais. Educação Temática Digital, v. 10, n. 2, p. 223, 2009.</p> <p>LAASER, W. et al. Educação a distância e recursos abertos. RIE, v. 49, n. 4, p. 4, 2009.</p> <p>LEITE, C. et al. O trabalho pedagógico no Ensino Superior: Um olhar a partir do prêmio Excelência E-learning da Universidade do Porto. Educação, Sociedade e Cultura, v. 28, p. 71-91, 2009.</p> <p>MUGNOL, M. A Educação a Distância no Brasil: conceitos e fundamentos. Rev. Diálogo Educ., Curitiba, v. 9, n. 27, p. 335-349, 2009.</p> <p>RODRIGUES, C. R. et al. Ambiente virtual: ainda uma proposta para o ensino. Ciências & Cognição, v. 13, n. 2, p. 71-83, 2009.</p> <p>TREIN, D.; SCHLEMMER, E. DR. Projetos de aprendizagem baseados em problema no contexto da Web 2.0: possibilidades para a prática pedagógica. Rev. Científica e-curriculum, v. 4, n. 2, 2009.</p>
2010	16%	<p>ALONSO, K. M. A expansão do ensino superior no Brasil e a EaD: dinâmicas e lugares. Educação & Sociedade, v. 31, n. 113, p. 1319-1335, 2010.</p> <p>DA SILVA, G. A. et al. Panorama das pesquisas em educação a distância no Brasil. Estudos de Psicologia, v. 15, n. 3, p. 291-298, 2010.</p> <p>DA SILVA, L. M. G. et al. Ambiente virtual de aprendizagem na educação continuada em enfermagem. Acta Paul Enf., v. 23, n. 5, p. 701-4, 2010.</p> <p>HAGUENAUER, C. J. et al. Estudo comparativo de ambientes virtuais de aprendizagem. Colabor@-A, v. 2, n. 5, 2010.</p> <p>MORAIS, N. S.; CABRITA, I. Ambientes virtuais de aprendizagem: comunicação (as) síncrona e interação no ensino superior. Rev. PRISMA, n. 6, 2010.</p> <p>MOREIRA, J. A.; MONTEIRO, A. O trabalho pedagógico em cenários presenciais e virtuais no ensino superior. Educação, Formação e Tecnologias, v. 3, p. 82-94, 2010.</p> <p>OKADA, A.; BARROS, D. M. V. Ambientes de aprendizagem aberta: bases para uma nova tendência. RDTC, p. 20-35, 2010.</p> <p>PAIVA, V. M. de O. Ambientes virtuais de aprendizagem: implicações epistemológicas. Educação em Rev., v. 26, n. 3, p. 353-370, 2010.</p>

2011	12%	<p>BARCELOS, R. JS. Ambiente Virtual de Aprendizagem 3D: proposta de Objeto de Aprendizagem para o Ensino de Algoritmos. Enc. de EAD, p. 47-61, 2011.</p> <p>HAGUENAUER, C. J.et al. Ambientes Virtuais de Aprendizagem: Definições e Singularidades/Virtual Learning Environments: Definitions and Singularities. Rev. EducaOnline, v. 3, n. 2, 2011.</p> <p>LAZZAROTTO, L. L. et al. A educação em ambientes virtuais: proposição de recursos computacionais para aumentar a eficiência do processo ensino-aprendizado. RBIE, v. 19, n. 2, p. 42-55, 2011.</p> <p>MARTINS, A.; MEIRINHOS, M. Análise das relações entre intervenientes num fórum de discussão em contexto de aprendizagem. In: CI: Inovação na Edu. com TIC. Instituto Politécnico de Bragança, 2011, p. 145-162.</p> <p>MIRANDA, L. et al. Redes sociais na aprendizagem. Educação e tecnologia: reflexão, inovação e práticas, n. 1, p. 211-230, 2011.</p> <p>TEIXEIRA, I. N. D.; FELIX, J. V. C. Simulação como estratégia de ensino em enfermagem: revisão de literatura. Interface-Comunicação, Saúde, Educação, v. 15, n. 39, p. 1173-1184, 2011.</p>
2012	6%	<p>GARCIA, M. F. et al. Novas competências docentes frente às tecnologias digitais interativas. Teoria e Prática da Educação, v. 14, n. 1, p. 79-87, 2012.</p> <p>SEIXAS, C. A. et al. Ambiente virtual de aprendizagem: estruturação de roteiro para curso online. Rev. Bras. Enf., p. 660-6, 2012.</p> <p>SILVA, T. E. V. et al. Análise de componentes principais aplicada a avaliação discente: um estudo de caso em ambientes virtuais de aprendizagem. Anais do Computer on the Beach, p. 71-80, 2012.</p>
2013	26%	<p>BARROS, D. M. V.; SPILKER, M. J. Ambientes de Aprendizagem Online: contributo pedagógico para as tendências de aprendizagem informal. RCET, p. 29-39, 2013.</p> <p>CORREIA, R. L.; SANTOS, J. G. dos. A importância da Tecnologia da Informação e Comunicação (TIC) na EAD do Ensino Superior (IES). Rev. Apr. em EAD, v. 2, n. 1, 2013.</p> <p>DE HOLANDA, V. R.et al. Aprendizagem na educação online: análise de conceito/Learning in online education: analysis of concept/Aprendizaje em La educación online: análisis de concepto. Rev. Bras. de Enf., v. 66, n. 3, p. 406, 2013.</p> <p>FARDO, M. L. A gamificação aplicada em ambientes de aprendizagem. Renote, v. 11, n. 1, 2013.</p> <p>GALAFASSI, F. P.et al. Análise crítica das pesquisas recentes sobre as tecnologias de objetos de aprendizagem e ambientes virtuais de aprendizagem. RBIE, v. 21, n. 3, p. 41-52, 2013.</p> <p>GOMES, L. F. Distance education in Brazil: perspectives and challenges. Avaliação: Rev. da Avaliação da Educação Superior (Campinas), v. 18, n. 1, p. 13-22, 2013.</p> <p>GROSSI, M. G. R.et al. Interatividade em Ambientes Virtuais de Aprendizagem no processo de ensino e aprendizagem na EAD DOI-10.5752/P. 2318-7344.2013 v1n1p75. @rquivo Bras. de Educação, v. 1, n. 1, p. 75-92, 2013.</p>

2013	26%	<p>MÜLBERT, A. L. et al. A interação em ambientes virtuais de aprendizagem: motivações e interesses dos alunos. Cadernos Acadêmicos, v. 4, n. 2, p. 109-126, 2013.</p> <p>PATTO, M. H. S. O ensino a distância e a falência da educação. Educação e Pesquisa, v. 39, n. 2, p. 303-318, 2013.</p> <p>SANTAELLA, L. Desafios da ubiquidade para a educação. Rev. Ensino Superior Unicamp, v. 9, p. 19-28, 2013.</p> <p>SANTOS, R.; JORGE, I. Utilização da plataforma Moodle por docentes do ensino não superior: o caso da escola EB 2, 3 S. João de Deus. Educação, Formação & Tecnologias, v. 6, n. 1, p. 68-85, 2013.</p> <p>SCHNEIDER, E. I. et al. Sala de Aula Invertida em EAD: uma proposta de Blended Learning. Rev. Intersaberes, v. 8, n. 16, p. 68-81, 2013.</p> <p>SILVA, P. C. D. et al. Estratégias de Ensino/Aprendizagem em Ambientes Virtuais: Estudo Comparativo do Ensino de Língua Estrangeira no Sistema EaD e Presencial. RBAAD, SP, v. 12, 2013.</p>
2014	22%	<p>BARBATO, S.; CAIXETA, J. E. Novas tecnologias e mediação do conhecimento em atividades colaborativas no ensino superior. Linhas Críticas, v. 20, n. 42, p. 363-382, 2014.</p> <p>FERNANDES, J. et al. Identificação de Fatores que Influenciam na Evasão em um Curso Superior de Ensino a Distância. Perspectivas Online 2007-2010, v. 4, n. 16, 2014.</p> <p>HOUNSELL, M. et al. Estratégias de avaliação da aprendizagem em ambientes virtuais 3D e jogos sérios. In: Proceedings of ICETE, 2014.</p> <p>JATOBÁ, A. L. H. de S. et al. O ambiente virtual Moodle no processo do ensino e aprendizagem da disciplina estágio supervisionado do curso de formação pedagógica em artes visuais. In: Congresso Brasileiro de Ensino Superior a Distância, 2014. p. 2511-2525.</p> <p>KLOCK, A. C. T. et al. Análise das técnicas de Gamificação em Ambientes Virtuais de Aprendizagem. Renote, v. 12, n. 2, 2014.</p> <p>LIMA, D. et al. MoodleGroups: um Aplicativo para Identificar as Relações Sociais entre Alunos em Ambientes Virtuais de Aprendizagem. In: Symposium on Collaborative Systems. October, 2014. p. 9.</p> <p>MARTINS, L. B.; ZERBINI, T. EAD em instituições de ensino superior: uma revisão de pesquisas. Rev. Psicologia Organizações e Trabalho, v. 14, n. 3, p. 271-282, 2014.</p> <p>MORAIS, N. S. et al. Uma revisão de literatura sobre o uso das tecnologias da comunicação no ensino superior. Rev. Prisma, n. 24, 2014.</p> <p>MOTTA, R. A. Tecnologia educacional no ensino superior: cenários da EAD e a avaliação institucional. Gestão Universitária: os caminhos para a Excelência, p. 117, 2014.</p> <p>RAMOS, J. L. C. et al. Análise de expectativas e habilidades discentes na modalidade de ensino a distância. In: Actas de la 9ª CISTI, Barcelona-Espanha. 2014. p. 131-136.</p> <p>SILVA, B. et al. Aplicação e uso de tecnologias digitais pelos professores do ensino superior no Brasil e em Portugal. Educação, Formação & Tecnologias, v. 7, n. 1, p. 3-18, 2014.</p>

In general, the sample shows underuse practices of VLE with an emphasis on Moodle - VLE most quoted in the sample - as most students and teachers uses them mainly to provide and / or access files and documents, too although in theoretical discourses, most of these agents seem to believe and acknowledge that the use of VLE has the potential to considerably improve the quality of teaching and learning processes, regardless of formal, non formal or informal, or even mode of classroom education, partial distance or DL.

However, in practice, the use of VLE in teaching and learning processes has more reaffirmed the status quo, features enabled by technologies being used for the reassertion of traditional recursive mechanisms and historically consolidated, than innovated effectively; have been found, the selected sample, some requirements that appear to contribute to more practices for the epistemological concepts in the use of VLE in CLE and beliefs and pedagogical principles underlying this use, as can be seen in Figure 2:

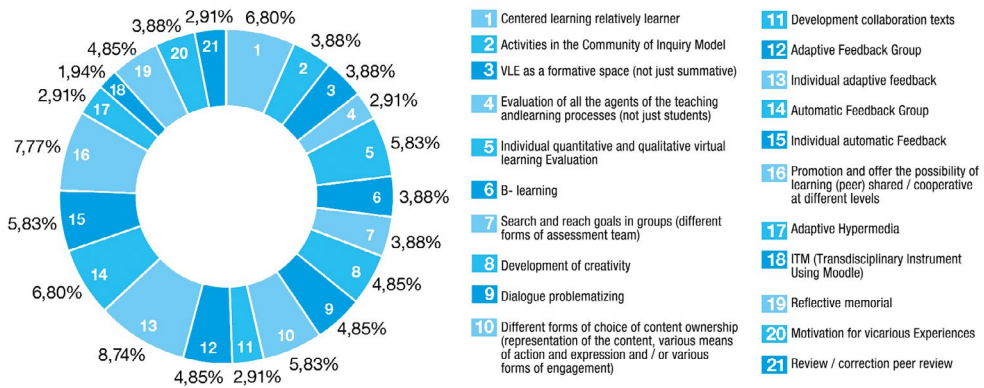


Figure 2: Use of VLE in CLE: percentage of occurrence in the sample.

Source: Personal Collection

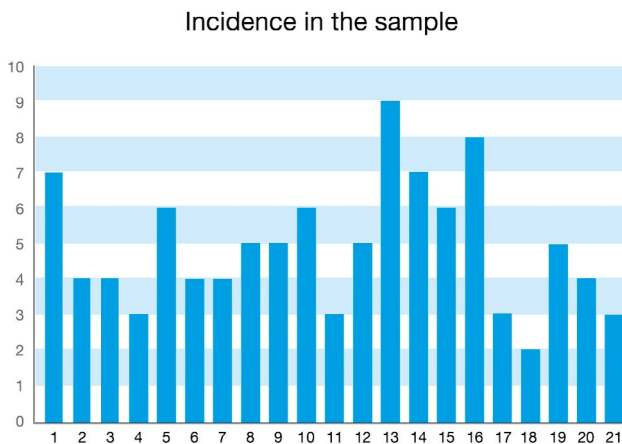


Figure 3: Use of VLE in CLE: Effective Advocacy in the sample.

Source: Personal Collection

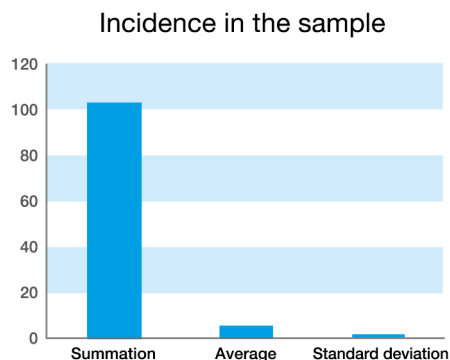


Figure 4: Use of VLE in CLE: Statistical analysis of the actual impact on the sample.

Source: Personal Collection

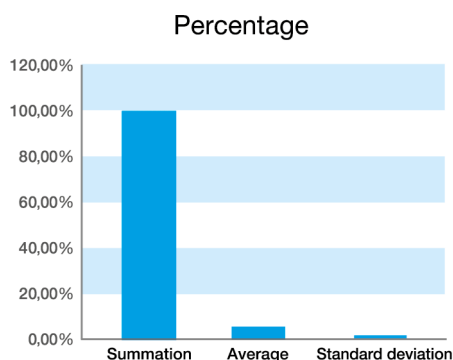


Figure 5: Use of VLE in CLE: Statistical analysis of the percentage of incidence in the sample.

Source: Personal Collection

Considering the widespread aspects, reaffirmed by Deschamps (2014) on the contemporary learner as one global, highly connected, able to multitask and with a significant ability of social interaction mediated by technology, it is believed that the choices made by the agents of the processes teaching and learning, when using VLE in CLE can be the difference between motivate and facilitate or discourage and hamper learning.

Among the requirements that have now been considered by the agents of the teaching and learning process in formal learning environments in higher education and in the sample selected this work, there are no completely dissociated innovations of the Cartesian paradigm, rising from the complex. However, pointed parameters appear to function as incremental movements in search of stocks that meet the needs to promote and provide learning in CLE.

The feedback, which is to use information obtained in previous attempts practices, which can be extrinsic, such as data obtained by artificial and external means to the student - scores, videos, information passed by teachers - or intrinsic, such as data obtained from systematic analysis of the sensory organs of the students and that do not depend on external sources to provide a return given on the action that enables the students, individually or in groups, individually adaptively and \ or automatic, compare the action planned in the run and where necessary, carrying out new and more successful attempts. Nesse contexto, acredita-se que entender o aprendiz, suas necessidades e anseios, utilizando-os como referência para a retroalimentação do processo de aprendizagem, pode ser uma decisão importante em busca de uma aprendizagem produtiva.

It is noted that, considering the totality of the factual educational content, conceptual, procedural and attitudinal, all forms of feedback that focused on individual selected sample group, adaptive or automatically can provide positive results for the learning process. The decision to use techniques and adaptive tools to an individual or a group in order to meet their characteristics, expectations, capabilities, styles, levels of knowledge and preferences, is ratified by Despotović-Zrakić and colleagues (2012) as next step in the evolution of VLE to meet the current demands of the CLE.

Respecting the characteristics of CLE already treated in this work, it is believed that requirements related to the use of adaptive hypermedia - including and resuming the adaptive feedback and offering different forms of choice of content ownership, through the representation of the content of the various media action and expression and / or various forms of engagement - may represent the biggest steps towards the actual needs and characteristics of those environments, as they allow multiple options to choose from and therefore higher chances of success for a target audience diverse in all aspects.

In CLE coexist also issues such as: a) the promotion and provision of shared learning opportunities and cooperatives at different levels of cognitive domain: to know and remember, understand, apply, analyze, evaluate and create; b) collaborative writing texts (JESUS; LIMA FILHO, 2013); c) the motivation via vicarious experiences (Morchio, 2014); c) the problem-solving dialogue (Cordenonsi, 2011); d) reflective memorial (SOUZA, 2013); e) activities in the model community of inquiry - research communities (Lobato, 2012); f) the pursuit and the achievement of group goals that can be understood as actions related to social and cultural-historical conception of human learning process of critical, complex and reflective (VYGOTSKY, 1991; MORIN, 2006; FREIRE, 2007). Therefore, given the characteristics of the CLE, still representing initial steps, such parameters reveal choices that can contribute to the acquisition of the learning process in higher education.

Targeted requirements for issues such as centered learning effectively in student formative ambiance of VLE, not only summative or classification, the pursuit of development and the lack of creativity spaces, Transdisciplinary Instruments (ITM) using Moodle (RAMALHO; RODRIGUES, 2013), although they are among the most cited issues in the world in the fields of Human Sciences and being historically proclaimed by

educators from the New School movement, appearing not always effectively in everyday didactic-pedagogic practice and therefore can also serve as a search for instruments a holistic learning and therefore represent a few steps needed to find the requirements on complexity.

Individual or in groups, quantitative and qualitative evaluations are actions that can allow multiple forms of engagement, due to the versatility of conditions offered by technology as well as a reality increasingly democratic, reflective and critical in formal higher education.

CONCLUSION

The results show that the higher education scenario is still in an embryonic phase of the effective transition of Cartesian models to models that recognize and respect its characteristics as an CLE, as it really is. However, they seem to point to practices that meet their holistic characteristics of retroactivity, hologramáticas, recursive, organizational or systemic, dialogic and autoeco-organizational. This conception finds its confirmation in numerous instantiations such as the use of the concept of transdisciplinarity, whose term has been understood as a strategy that seeks to re-integrate all the parties, in this particular case, referring to curriculum subjects and cross-cutting issues which are historically worked separately or in the use of adaptive strategies that seek to offer everyone, without distinction, effective learning opportunities (RAMALHO; RODRIGUES, 2013; Debastiani et al, 2014.). Ratifying the recognition that innovation in educational contexts tend to be more sustainable in the long run and when they occur in their most incremental shapes in constant motion ancestry (TIDD; Bessant, PAVIT, 2008), emphasizes the importance of such practices in higher education as initial steps in search of the necessary and desired transformation to meet the demands of new generations.

Among the steps in this direction, one step higher may be the use of adaptive VLE. Despotović-Zrakić and collaborators (2012) state that a VLE can be considered adaptive or customizable when monitors the activities and actions of its members, properly interpret the data in the specific fields models base and points the requirements and user preferences for performing interactions and activities. It emphasizes further that a VLE to be adaptive, must propose actions from the data available on its members and objectives, contents and activities concerned to facilitate the dynamics of the learning process.

Given the speed, communications, science in general, changes and knowledge, according to estimates from CBN (2013), are expected to double in the world every 73 days in 2020. Thus, it is suggested that further research will contribute in identifying and reflection on CLE to evaluate new and constant demands and find answers to the challenges with which the companies have faced.

It has performed a making pattern decisions may only support the selection, since the CLE compounds are uncertain scenarios, highly mutable and whose variables are not fully capable of observation and therefore consideration. Thus, it is essential a constant search for theories, methodologies and knowledge to contribute to the teaching and learning.

Finally, it emphasizes that affirm that the actions are effectively appropriate before the complex and uncertain scenarios present in the CLE, which include higher education, it is difficult or even impossible. Thus, the contribution of this work is to identify some proposals for actions that have been gradually taken over by the researchers and professionals and have promoted reflections on the importance of breaking old paradigms in search of a higher formal education that can contribute effectively to the training of professionals and, especially, more people prepared to create

new and better realities for themselves and for society, for, as would John Dewey, "education is a social process, is development. It is not preparation for life, it is life itself."

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