



The Service Science to Improve the Distance Education in a Public Organization of Higher Education

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Abstract

This article shows preliminary results of a in development method that uses concepts, theories and techniques of the academic field of Service Science to improve processes involved in offering distance education courses related in a public Organization of Higher Education. In this research, distance education is defined as a service system that is available to many customers (students, teachers and organizations) through the interaction of people, organizations and technological resources, which need to work together to add value in the teaching-learning relationship that is established in distance courses. The Service Science can explore the operations and the laws of service systems, through the synthesis of management, engineering technology and social sciences, to solve complex real problems by providing a scientific methodology to improve the efficiency of the service systems, involving their entire life cycle. In this context of distance education as a service system, several studies in the academic field of Service Science, which are applied to the service sector, can also be used in improving distance education. Regarding this context, the research focus on answering the question: How the academic field of Service Science can be used to create a method to be applied in the improvement of the processes involved in offering distance courses in a public organization higher education, in order to make the most efficient and effective distance education?. To address this question, it has been done a literature review to evaluate, explore and verify the potential of the academic field of Service Science, in the context of distance education. It is expected that this research develops a method that can be used by organizations as an effective resource in the decision making, problem solving and quality of services related to the context of distance education.

1. Introduction

Distance Education is the mode of teaching that has most grown in Brazil. According to the National Institute for Educational Studies and Research "Anísio Teixeira" (INEP) on the latest census of Brazil Superior Education of 2013 [1], on-campus education achieved a total of 6.152.402 enrolments, which represents a growth of 12,4% compared to 2010. Distance Education, on the same period, accomplished a growth of 24,0% in the undergraduate enrolments, achieving a total of 1.153.572 in 2013. Thus, organizations that offer this teaching method need to organize themselves to attend the inscreasing number os students.

This article is based on an in progress doctoral research and it tries to create a method, that uses the Service Science, to be applied on the improvement of processes involved in the offering of distance-learning courses in a public organization of superior education.

Primarily, there will be two topics reffering to literature revision, one about distance education and one about Service Science, right after, there will be one topic that describes the research assumptions and delimitations, then, the preliminary results of the research, and finally, references.

2. Distance education

In the literature, there are many concepts about distance education, but in all of them the main idea is the spatial separation of students and teachers, that can be distante all or most of the teaching and learning time. In this context, long distance interaction occurs through some kind of technology that has the aim of transmitting information (knowledge) and providing an environment where students and teachers may interact.

In [2] follows the definition to Distance Education:

Distance Education is a self-learning process, mediated by technologies, where teachers and students are separated spatial and/or temporally. It is teaching/learning where teachers and students are not normally together, fisically, but may be connected, interconnected by technologies, mainly the telematics ones, as internet. Also, may be used the mail, radio, television, CD-ROM, telephone, fax and similar technologies [2].

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In [3] the authors define Distance Education as “the planned learning that normally occurs in a different place than on campus, requiring special techniques for creating the course and instruction, communication through various technologies and organisation arrangements and special administrative”.

Stands out the term “Planned learning”, because it is important to consider that actions involved in the teaching and learning process should be properly planned, in a way of avoiding outdated and/or improvised practices that may bring losses to the educational process.

In an environment where teachers and students are spatial and/or temporally separated it is clear the importance of technological resources, and also it is important to attempt that Distance Education should not be discussed only in the technological field, but in all aspects related to this teaching modality (technology, people and organizations).

In [3] the authors describe the need to deal with Distance Education in a systemic view, this is, as a system that is formed by all processes components that operate within teaching and learning distance, such as, learning, teaching, communication, creation and management. In the author’s view in [3], analyse Distance Education in a systemic way is very useful for comprehending it as a field of study and adopting a systematic approach is the secret to a well-succeded practice.

This perspective of Distance Education as a system take us to inherent concepts in the Information System field, because the word “system” used above refers to an organized group of elements (i.e., people, data, activities, organization, technological resources), that interact between themselves to achieve the goals expected, in this context distante education.

3. Service Science

Just like its great effort to facilitate the training in Computer Science course in the 1940s, IBM began in 2004 another experience to develop a new academic field called Service Science [4].

According to [5] Service Science is:

[...] the study of service systems and value propositions. It is the integration of many research areas in service, and subjects in service, such as service economy, service marketing, service operations, service management, service quality (especially client satisfaction), service strategies, service engineering, service human resources management (especially in professional service firms), computing service, service delivery chain (especially eSourcing), service design, service productivity, service measurement [5].

According to the authors in [6] the term “service system”, written in the quotation above, may be defined as people configuration, technologies and other resources that interact with other service systems to create mutual value. In [7] a service system is defined as a complex system where all parts interact in a non-linear way in order to attend demands.

The Service Science, proposed by IBM, is emerging as a new interdisciplinary study area that aims to face the challenge of making innovation in services more systematic, and it covers a wide area of subjects, including service operations, service engineering, computing, and many other areas. Thereby, the term Service Science, used until then for IBM, was expanded to Service Science, Management, and Engineering (SSME). At SSME, Service Science is a new way of creating knowledge about services, Service Engineering is a way of using the knowledge to create a value to the service, and Service Management invests to improve the process of creation and capturing value for the service [8]. In the most recent publications encountered in [9] and [10], considering the crucial role of the design for the client experience, it was proposed a new denomination, Service Science, Management, Engineering and Design (SSMED).

Commonly the term Service Science is used as abbreviation to SSME or SSMED, also, it is used as a generic term to indicate a new academic field of study of service systems, through the integration of many research areas and subjects related to services [11].

4. Assumptions and delimitations of research

The main research assumptions are related to characterization of distance education as a service system and, in this perspective; utilize the various studies of Service Science, that are applied in the services sector, to improve distance education.

Because of these assumptions, the research question was raised as follows:

How the academic field of Service Science can be used to create a method to be applied in the improvement of the processes involved in offering distance courses in a public organization higher education, in order to make the most efficient and effective distance education?

To answer the question, a bibliographical research about distance education and Service Science is being made in a way to delimitate the search, mainly on defining the processes that will be analysed in

order to use Service Science to improve the major weaknesses. Since, it is a wide field, it is necessary to delimit its action, and this will occur in the related distance education study.

That said, the main points that will be searched are:

1. Make a detailed study about the processes involving distance education at IFRN, in order to characterize it as a system service;
2. Evaluate, explore and verify the potential of Service Science, in the distance education context;
3. Build a method, that uses Service Science concepts, theories and techniques, to be applied to improve the processes involved in distance education;
4. Validate the proposed method, verifying how it may contribute to improvements of distance education.

Regarding the methodology procedures, this research follows an exploratory-descriptive, qualitative approach and it will use the research method as a case study. Distance Education Campus (EaD) at the Federal Institute of Education Science and Technology of Rio Grande do Norte (IFRN), located in Brazil, is the chosen organization for the case study. EaD/IFRN Campus is the responsible for offering long distance courses in all teaching modalities at the Institute.

5. Preliminary results of research

The research about processes involving distance education at IFRN and Service Science potential evaluation to improve these processes is in the detailed study stage. Regarding studies about distance education, a questionnaire was applied for EAD/IFRN Campus' employees, aiming to collect information about the quality of services provided and thereby define the scope of Service Science application in the framework of distance education.

The questionnaire has 23 questions, some aiming to analyse the profile of respondents and some related to the quality of the service provided. Through the available data, it was noted that major part of respondents are postgraduated professionals, with extensive professional experience in the field of expertise and the main activity in the institution is distance education. Relating to the results about the quality of provided services, the data shows the importance of the relation between technological resources, pedagogic practices and administrative processes when offering distance education and the need for a more effective support on these points, mainly on the technological resources and administrative demands associated with it, enhancing the need of treating it as a service system that involves action of people, technologies and organizations that interact to create a mutual value.

As expected results, at the end it is desired to draw attention to Service Science, and how this new area may be used to improve distance education processes. Also, be able to suggest to organizations a method that may help defining the best practices for Service Science use as a considerable and relevant opportunity for organizations offering distance education, using the new academic field as an effective resource in the decision-making, problem solving and quality and generation of products and services related to distance education context.

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