

RESEARCH ARTICLE

Quality Gap Analysis on Education Services

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Abstract

Services quality has been studied since the 80's, however only recently education services have been considered under this theoretical approach. Education may be considered as a service since local and global competition have been becoming stronger and higher education institutions are forced to adopt a market-oriented vision in order to keep their performance levels and to satisfy their students. This article aims to assess quality gaps of a distance Public Administration undergraduate course. Therefore, we applied a quality gaps model to ten courses belonging to the Open University system in Brazil, researching course coordinators and students. The multi-methods research noticed that institutions generally do not adopt a market-oriented model for decision-making in their courses and, therefore do not own a well-defined process to identify students' expectations and, consequently, to create quality strategies and policies based on these expectations. On the other hand, although higher education is legally regulated by the Ministry of Education, institutions seek differentiation in the market by hiring and retaining qualified and caring personnel and by the development of innovative and exciting learning activities that stimulate student motivation. These actions are strategically differentiated and help reducing barriers related to distance education. The infrastructure which is vital to the success of a technology-based course is, still, a limitation in remote areas. Finally, a t-test showed there was a favorable perception of quality for both students and coordinators, but the latter were more optimistic.

Keywords: *Distance education, Education services, Gap analysis, Services marketing; Services quality.*

Introduction

The study of services quality date of 1980's. These studies began with Parasuraman, Zeithaml and Berry published papers. Until then quality used to be studied only by operations field, which focus on tangible products quality. In operations quality means the absence of defects or compliance with the requirements of production [1].

Operations approach to quality assessment proved inadequate for the study of services, given its peculiar characteristics: intangibility, heterogeneity and inseparability. Intangibility means the inability to account for, store and test a service before its delivery. The heterogeneity comes from the intrinsic variability of the service, it means, a service will have different performance depending on the service provider, the client engagement and the context in which service is provided. Finally, inseparability concerns to the fact that a service is consumed simultaneously to its production. These unique

characteristics make it difficult to assess quality for a service [1].

Parasuraman et al. were pioneers in assessing quality in services. Their approach was so successful that it has been used since the 80's. For the authors, unlike tangible products, the quality of a service refers to the perception customers have about it [1] and this perception occurs during the interaction between the client and the service provider [2].

Under this perspective, perceived quality is measured by the difference between the perceived performance of a service and the initial expectations about it (service quality = perception of service performance - expectations about the service). This approach considers that expectations refer to the service desired by the customer and the minimum level of service acceptable in his/her point of view. Then, a zone of

tolerance is created, determining satisfactory and acceptable levels of service [3]. Difference between perception of service performance and initial expectations gave rise to what is called “gaps model of service quality”, the object of this study. Pioneer studies focused on banking services quality, credit card and maintenance services [1].

Services quality assessment became popular and other services began to be studied in the same light. Higher education can be understood under services point of view, since education market has become client-oriented (considering student as a client). This means education market is no longer purely education-oriented (pedagogy-oriented), which makes it possible to consider education institutions as providers of educational products and services [4]. It is important to note that education is not a common service, like banking or restaurant services, since it owns a key role in society and has a non-business mission to develop critical citizens. Education core mission is social, non-commercial; it means education aims to develop better human beings and better citizens [5].

Higher education institutions (HEIs) have been facing fierce local and global competition, besides of challenges, such as high dropout rates and limited understanding of the market and students’ needs. Online distance education has outstanding participation in increasing competitiveness among institutions around the world, which makes the market-oriented approach feasible for education comprehension [6].

In Brazil, distance education has been gaining importance. In 2010, 14.6 % of college students were attending distance education course, compared to just 0.2 % in 2002 [7]. This scenario can be explained by the expansion of education in Brazil, with the creation of new institutions, creation of new vacancies and creation of the Open University of Brazil (UAB), subject matter of the article. Distance education, for its peculiar characteristics (space and temporal separation between instructor and student, technology intensive use, learner empowerment etc.) faces its own challenges, such as student motivation difficulties, high dropout rates and time management trouble.

Given social importance of education, the growing role of distance education in Brazil and the challenges faced by this modality, the purpose of this article is to assess quality gaps in a distance education undergraduate course. We studied Public Administration undergraduate distance course from the Open University of Brazil, using the perspective of services quality. Thus, we compared students’ and managers’ (course coordinators) perceptions about the education services provided. We collected data from institutions belonging to UAB project and applied both qualitative and quantitative methods in a multi-method research approach.

Quality Gaps

Parasuraman *et al.* [1] were pioneer on services quality research. As a result, they observed gaps between executives perceptions and consumers’ perceptions about a same service quality, which gave rise to a five gap model, presented in Fig. 1.

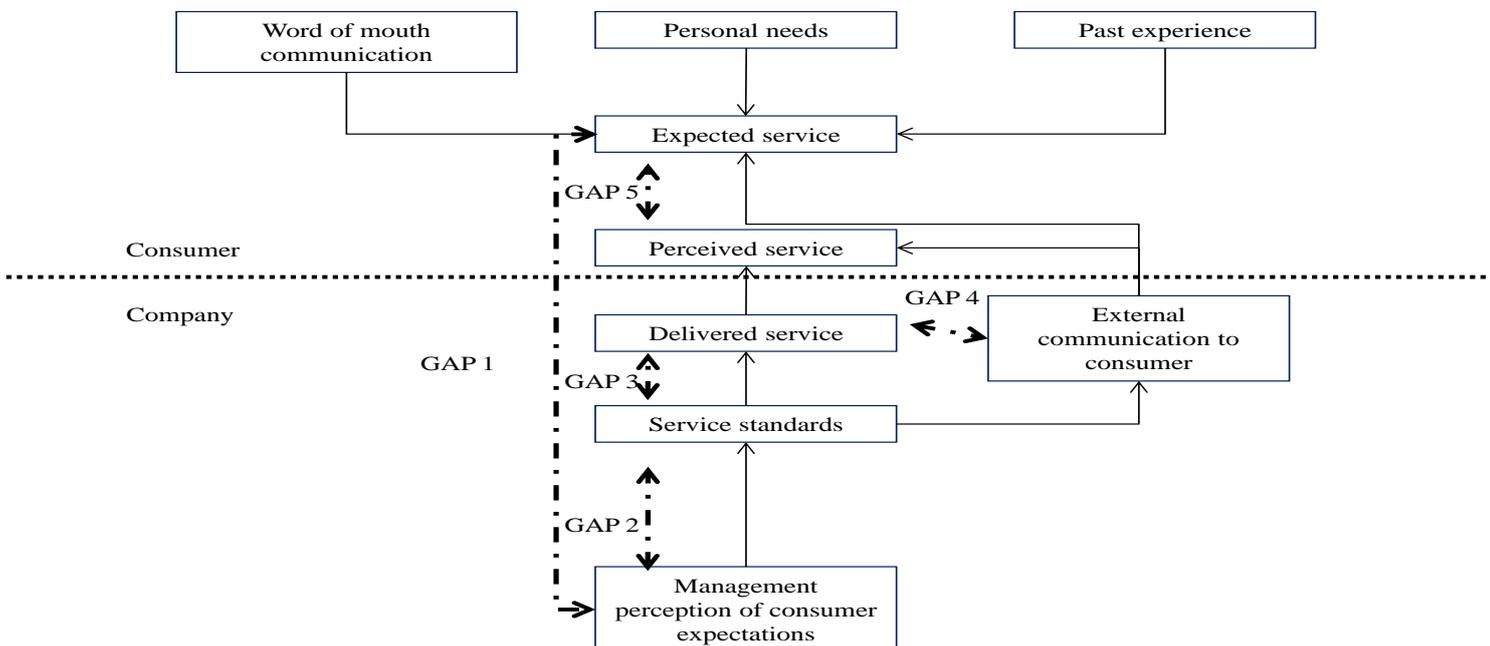


Fig.1: Five-gap model, Parasuraman *et al.* (1985, p.44)

Gap 1 indicates different perceptions between managers and clients, that is, managers may misunderstand the attributes valued by their consumers, which should define the services characteristics. This gap may reduce the quality perception, as the services provided do not meet clients' needs [1].

Gap 2 concerns the difference between managers' perceptions about consumer's needs and the services real specifications. This gap results from the difficulty on providing services which match the consumers' expectations in many dimensions [1].

Gap 3 concerns the difference between services specifications and what is actually delivered. Even when the services attributes are clear and match consumers' expectations, it is not guarantee a high quality service will be performed, since employees behavior strongly impacts the service and, as a consequence, the consumer's perception of quality [1].

Gap 4 deals with the difference between the service delivered and what was communicated about the service. Communication at the media creates expectation; when the company communicates more than it can really deliver, gap 4 takes place. In this sense, company should communicate its efforts to serve consumers appropriately and meet consumers' needs, since it makes clients perceive the service in a more favorable way[1].

Finally, gap 5 concerns the difference between consumers' expectations about the service and their real perceptions regarding the service delivered. Then, a service which exceeds consumers' expectations causes a favorable quality perception and a service which does not meet clients' expectations, causes frustration and an unfavorable quality perception [1]. Gap 5 is a function of the other four gaps [8]; that is, each gap impacts on service quality; then consumers' quality perception is a function of the gaps 1, 2, 3 and 4.

In 1988 Zeithaml *et al.* published a paper that extends the original five-gap model presenting variables and services attributes that define each gap. Since gap 1 measures the discrepancy between consumer's expectations and the managers' perceptions of these expectations, variables that measure this relation may be [2]:

- Marketing research orientation: amount of marketing research conducted by the

organization; extent to which research data is applied; degree to which marketing research focuses on service quality issues and the level of interaction between the managers and the organization's customers.

- Upward communication: level of communication between employees and managers; level of communication between frontline personnel and managers and how this information is used for decision making.
- Management structure: number of layers between frontline personnel and managers may make communication flow slow and difficult.

Gap 2 (difference between managers' perceptions of customer's expectations and services specifications) is a function of [2]:

- Management commitment to service quality: amount of resources and policies that reflect commitment to quality; existence of internal quality programs.
- Goal-setting: formal process for quality goals statement.
- Task standardization: use of technology in order to standardize the operation as much as possible.
- Perception of feasibility: extent to which managers feel customer's expectations can be met; adoption of systems that help meeting specifications.

Gap 3 (difference between specifications and the service delivered) is a function of [2]:

- Teamwork: extent to which employees see their peers as customers; extent to which frontline staff feels managers care about them; extent to which frontline staff feels they cooperate with the organization and other departments; extent to which employees feel committed to the organization.
- Employee job fit: ability to perform the tasks; effectiveness of selection process.
- Technology job fit: adequacy of technologies employed to perform the tasks.
- Perceived control: extent to which employees feel they control their jobs; extent to which contact staff feels they have flexibility to deal with consumers; extent to which demand is predictable.
- Supervisory control systems: extent to which employees' whole performance is assessed (not only quantitative results).
- Role conflict: conflict between customer's expectations and organization's expectations;

existence of management policies that do not match services specifications.

- Role ambiguity: perceived quality of goals and expectations (quality of downward communication, feedback); perceived level of competence and confidence (training programs).

Gap 4 (difference between delivered service and external communications) is a relationship of [2]:

- Horizontal communication: extent to which inputs from operation personnel are taken into account for advertising planning and execution; extent to which contact personnel is aware of external communications; level of communication between contact and operation employees; standardized procedures across different departments.
- Propensity to overpromise: extent to which the organization feels its competitors overpromises.
- Finally, gap 5 is a function of the first four gaps, and is measured through SERVQUAL five dimensions (assurance, reliability, empathy, responsiveness and tangibles) [2].

Luk and Layton [8] proposed two additional gaps to Parasuraman *et al.* [1] model. In their approach, employees impact significantly on the consumers' perceptions of quality; thus employees' perceptions about consumers' expectations was included in the model and generated the additional gaps 6 and 7. Gap 6 measures the difference between employee's perceptions about consumer expectations and consumer's real expectations regarding the service. Gap 7 concerns the difference between manager's perceptions about consumers' expectations and the employees' perceptions about customer's expectations [8].

In order to evaluate the modified model, authors applied the proposed version to a room service, totalizing a sample of 51 employees, 21 managers and 108 guests. Questions included expectations and real perceptions of the service (as recommended by original model) [8].

More recently, Shanin and Samea, in turn, came with a modified model which adds new gaps to the original framework developed by Parasuraman *et al.* [1] and already modified by Luk and Layton in 2002 [9]. Changes concern the following aspects [9]:

- Ideal standards.
- Management perceptions of consumers' perceptions.
- Employee's perceptions of customer perceptions.

- Service quality strategy and policies.
- Translation of strategy and policies into service quality specifications.

The new gaps proposed were submitted to 16 experts in order to acquire their opinions. Most of the researchers approved the new model proposed, which includes five new variables and eight new gaps to the original model, developed in 1985. Organizational strategy and policies are added to the model, since these elements guide people inside the company, define how the organization positions itself in the market and how it defines quality [9]. This means a company which does not own a service quality strategy will not be able to offer customer oriented services; then problems to communicate strategy leads to a service quality gap (gap 2) [9].

In addition, it is worth to remember quality strategies will be effective if they are properly translated into service specifications; when companies fail in this process another quality gap takes place (gap 3). Shahin and Samea [9] also point out that costumers usually create an ideal standard level in their minds, which they expect the service to meet. When the specifications of service provided do not meet these mental standards, gap 4 takes place [9].

External communications are relevant to acquire costumers' opinions about services' standards they value and, then, develop service specifications and also communicate and persuade consumers about already existent services specifications. When the organization fails to communicate services specifications, gap 5 happens [9].

Sometimes managers fail to understand customer's expectations which leads to gap 1, but they may also have problems to comprehend consumers real perceptions of the service consumed which leads to gap 11 [9].

In this sense, manager's perceptions of consumer's actual perceptions of the service are useful in order to define or correct strategies and policies. However, when consumer's perceptions are not properly understood, gap 12 occurs [9].

As well as Luk and Layton [8], Shahin and Samea [9] also consider employees important on the service delivery process. Then, when employees fail to comprehend consumers' perceptions of the provided service, gap 13 happens. In synthesis, the new model included gaps 2, 3, 4, 5, 11, 12, 13 and 14; however, it is important to say the model

was not applied to a real data basis; so it is necessary to validate it in order to evaluate its accuracy [9]. Present research proposes to analyze some of the proposed gaps in an education service.

The 14 gaps are summarized below and can be observed on Fig. 2 [9].

- Gap 1: difference between employees' perceptions of customer's perceptions and the service delivered.
- Gap 2: difference between management perception of customer expectations and quality strategy.
- Gap 3: difference between quality strategy and service quality specifications.
- Gap 4: difference between customer's ideal standards and services actual specifications.
- Gap 5: difference between external communications and services specifications.
- Gap 6: difference between service specification and service delivered.
- Gap 7: difference between external communication and service delivered.
- Gap 8: difference between expected service and perceived service.
- Gap 9: difference between expected service and employees' perceptions of customer's expectations.
- Gap 10: difference between employees' perceptions of consumer's expectations and

management perceptions of customers' expectations.

- Gap 11: difference between consumer's perceptions of the service and manager's perceptions of customer's perceptions.
- Gap 12: difference between managers' perceptions of customer's perceptions and service strategy.
- Gap 13: difference between customer's perceptions about the service and employees' perceptions about customers' perceptions.
- Gap 14: difference between management perceptions of customer's perceptions and employees' perceptions of customer's perceptions.

Method

A search can take different designs on a continuum ranging from purely qualitative research to purely quantitative research. Between the extremes (qualitative and quantitative) are multi-methods research, which mixes qualitative and quantitative approaches for data gathering and analysis [10].

This study aimed to evaluate quality gaps observed in education services provided by Public Administration undergraduate distance course

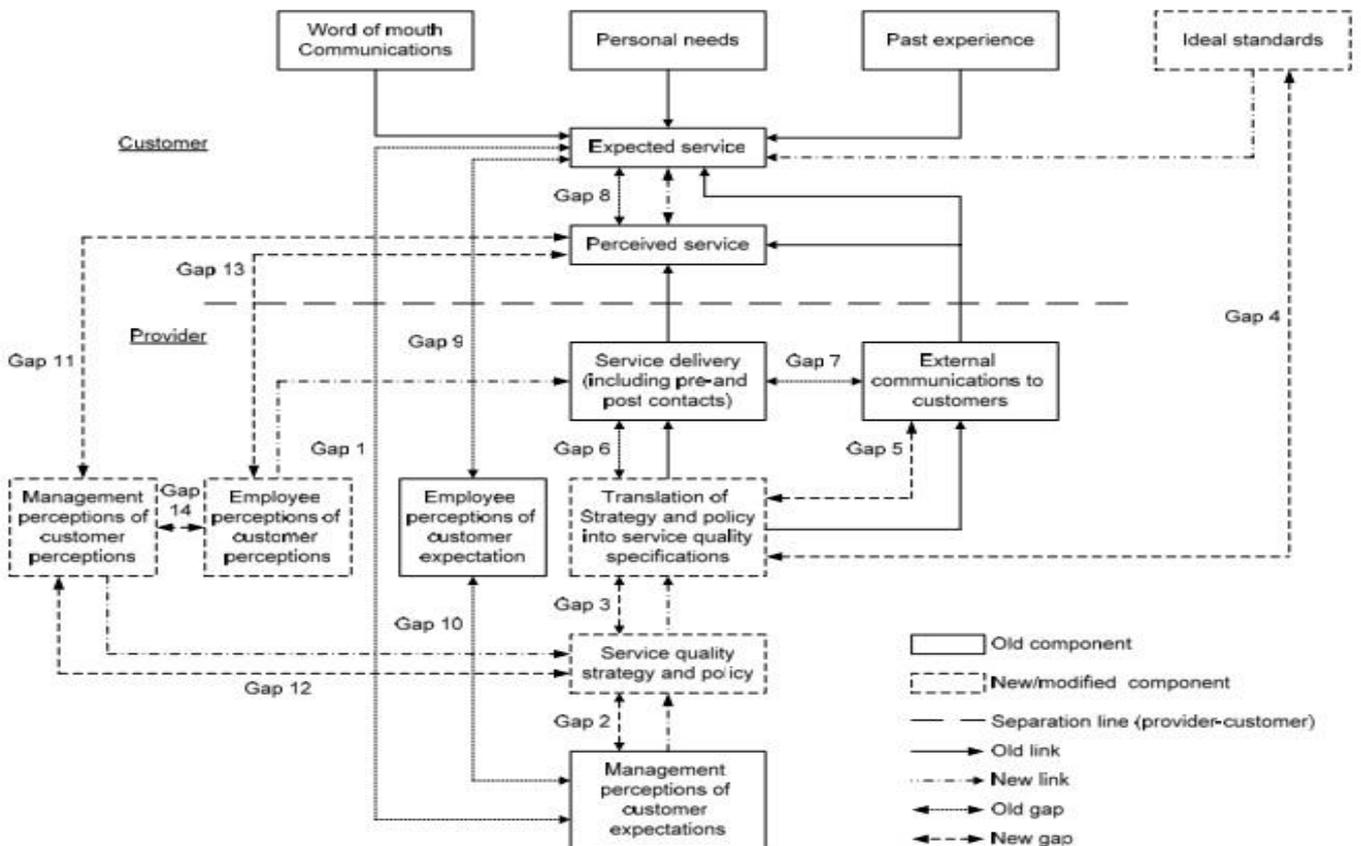


Fig.2: 14 Gap model, (Shahin; Samea, 2010, p.11)

from the Open University of Brazil. To reach that goal we carried out a survey design with multi-methods approach, we used qualitative and quantitative techniques for data collection and data analysis.

Gap quality assessment was performed by comparing perceptions Public Administration students and the respective course coordinators. UAB undergraduate distance course (Public Administration), at data gathering time (first semester of 2012), was offered by 36 Brazilian public universities [12]. UAB system uses federal and state universities infra-structure and personnel, which offer traditional higher education courses, to offer distance courses under UAB brand and management. All of the 36 institutions were contacted and invited to participate in the survey, but only ten of them accepted participation (for confidentiality purposes institutions are named A to J in this paper). For each institution course coordinator was interviewed was asked to attribute a degree of agreement (five points Likert scale, where one means complete disagreement and five means full agreement) to five service dimensions (reliability, assurance, empathy, tangibles, responsiveness) and service's overall quality; they were also asked to describe specific characteristics of services provided by their institutions.

Students from each institution were invited by the coordinator to participate of an online survey. Students were sent a link to an electronic questionnaire containing questions measured on a five-point Likert scale, related to the five dimensions of services quality (portal content, reliability, responsiveness, assurance and empathy) as well. Survey instrument was adapted from the work of Udo et al . and 593 valid questionnaires were obtained from students. Udo et al. adapted original SERVQUAL variables for distance education services [11].

Although the model of quality gaps and Samea Shanin [9] presents 14 gap, this paper aimed to assess only some of the gaps in the proposed model, due to the great difficulty in obtaining data for the evaluation of all gaps. We evaluated the following gaps:

- Gap 2: difference between management perception of customer expectations and quality strategy.
- Gap 6: difference between service specification and service delivered.
- Gap 7: difference between external communication and service delivered.

- Gap 11: difference between consumer's perceptions of the service and manager's perceptions of customer's perceptions.

In this sense, some hypotheses can be evaluated:
 H1: There is no gap between manager perception about student's expectations and institution's strategies and policies for quality.
 H2: There is no gap between service's specifications and the actual delivered service.
 H3: There is no gap between actual service delivered and external communications.
 H4: There is no quality gap between student's perceptions of service delivered and coordinator's perceptions about student's perceptions.

Evidences for analyzing hypothesis 1 to 3 are qualitative and were obtained through deep interview with course managers. On the other hand, gap 11 (hypothesis 4) was assessed through a one sample t-test, considering 5% significance level. It is worth to notice parametric tests suppose normal distribution, which was tested through a Kolmogorov-Smirnov univariate test.

Results

GAP 2

Shahin and Samea [9] proposed GAP 2 as the difference between coordinators' perception of students' expectations and actual service quality policies and strategies. In order to measure that gap, coordinators were asked whether and how students' expectations were surveyed. In addition, they were asked regarding how that information was used in practice. Students' expectations are surveyed by some of the institutions:

- Institution A offers a channel through Learning Management System where students can send their suggestions and complaints permanently.
- Institutions C and D survey students in the end of every module to acquire their perception regarding tutors and contents. Every year students and tutors are surveyed about diverse aspects of the course. Institution D also has an evaluation board and professors (not only students and tutors) are also invited to evaluate the course.
- Institution E organizes a coordinator visit to each center (coordination meeting) once per semester and, in this occasion he talks to students and to the center tutors. In these meetings students have the opportunity to express their feeling regarding the experience of studying online. This information is used in the didactic planning for the following semesters.

- Institution G does not survey student opinion; only gets information from informal conversation.
- Institution H does not conduct surveys, but visits the centers once a semester and acquires tutors' and students' experiences.
- Institution I conducts surveys in the beginning of each semester in order to get feedback about the course.
- Institution J surveys center coordinators to find out problems and perceptions of students.

Thus, it is possible to observe institutions somehow survey their students in order to apprehend their expectations and perceptions of the course; however, how this information is used in practice to design educational and course management strategies is not clear in all cases (except for institution E which stated the information is taken to the faculty board and changes are designed). So, although institutions apply mechanisms through these surveys in order to refine the course, there are complaints and suggestions from students. Therefore, there is a quality gap, leading to H1 rejection.

GAP 6

GAP 6 from Shahin and Samea [9] model measures discrepancy between translation of service quality strategies and policies into specifications and the service actually delivered. Considering HE in Brazil is regulated by the Ministry of Education [13], Public Administration course follows directions from both general educational law and specific norms from the UAB system. There are four steps between the translation of specifications and the real service provided:

- Step 1: recognition of Ministry of Education (MEC) directions.
- Step 2: definition of institutional strategies and policies (internal ones, considering MEC directions).
- Step 3: translation of the strategies and policies into service specifications.
- Step 4: service delivered.

In this study GAP 6 is measured through the comparison between steps 2 and 4 (internal strategies and policies and the actual service provided), since evaluating the transitions among steps 2 and 3 and steps 3 and 4 would require a very specialized method, which exceeds this study scope.

Then, in order to measure this gap, coordinators were asked about what their institution offers differently from the regular services legally

previewed. The following differentials were pointed:

- Institution A defines as differential great administrative staff and the organization of a Business professional week (event conducted face-to-face to which distance students are invited to participate and where career opportunities and trends are presented).
- Institution C reports course management team as differential, since it is composed by business professionals, pedagogy experts, distance education (DE) experts. This team is considered synergic and autonomous which adds value to the course.
- Institution D considers its tutoring dynamics as the main differential since every tutor is an expert on the contents he/she teaches.
- Institution E considers its class plan as differential since, it contains deep and detailed information of each discipline, including activities to be done, what is expected from each activity, deadline, where to post it, amount of time necessary to develop each activity, a study guide to tests. Another differential was the offering of standardization disciplines (introduction to DE, introduction to technology; basic mathematics) which aimed to qualify students to have a satisfactory performance on the course and helped them to organize time and space for studying (seek for family support; find a calm space for studying).
- Institution F considers its tutoring system as a differential, since there is an expert tutor at the center until half of the course and online tutors are available through telephone, chat room, email and Skype (in previously scheduled moments).
- Institution G considers having public management course a differential, which enhances competitiveness of the institution in the state.
- Institution I considers its faculty team and tutor team (master degree students) the main differentials since they are very qualified.
- Institution J points out extra-curricular activities, which merge theory and practice, as its differential.

Besides institution G, which did not present a specific differential related to the course, and institution H which reported it follows MEC directions exactly, all the other institutions try to provide a differentiate level of service in many ways, for instance, choosing highly qualified and expert tutors, offering diverse tutoring channels, including extra-curricular activities, developing a high performance course management team etc.

This suggests GAP 6 happens; however, it is a positive gap, showing institutions are concerned about the service provided (H2 is rejected).

GAP7

GAP 7 tries to identify whether the service delivered is according to external communications; that is, whether the service delivers what was announced in the press and in official communications. In order to measure this gap, coordinators were asked whether something previewed on the course project was not implemented. All the institutions reported that since implementation follows MEC orientations, only activities planned to happen in the last semesters were not implemented, as classes are still in course, for instance, internship and conclusion dissertation work which aim to guide students to an area of expertise (government management, municipal management, health system management) and will take place in the previewed semesters. However, the UAB website published, support centers should have appropriate infrastructure provided by local city halls or state government. Coordinators mentioned during the interviews that infrastructure is an issue specially in remote areas from every state. Thus it suggests there is a quality gap (GAP7), in a negative direction; in

other words, communication offers a higher level of service than that really provided. This leads to the rejection of H3.

GAP 11

Students showed positive opinions on course quality, satisfaction, loyalty, image and institutional support. Coordinators also reported strengths and weaknesses they can identify in the courses. Specifically considering quality assessment, quality gap model was applied in order to identify differences between students' and coordinators' opinions regarding the course.

GAP analysis compared students' and coordinators' perceptions of SERVQUAL dimensions and overall quality. Table 1 shows scores attributed by coordinators for the mentioned dimensions (assurance, empathy, responsiveness, reliability, website content or tangibles, overall quality).

Significance one sample t-test was applied in order to verify quality gaps. There was significant difference in students' and coordinator's perceptions on all the tested constructs ($p < 0,05$). Observed gaps are negative; which means coordinators' perceptions are higher than students' perceptions regarding course quality.

Table1: Scores for SERVQUAL dimensions – coordinators' perceptions

Institution	Instructors involved in the course are committed to DE	Instructors involved in the course master the contents of the disciplines they teach	Instructors are willing to help the distance students	Instructors are dependable	LMS is reliable and offers adequate resources to the course	Course has high quality
A	2	4	4	4	4	4
C	4	3	1	4	5	4
D	4	4	3	4	2	3
E	5	4	4	4	4	4
F	3	4	3	3	4	5
G	5	5	5	5	3	5
H	3	5	5	5	5	4
I	3	5	3	4	5	4
J	5	5	3	3	5	4
mean	3.8	4.3	3.4	4	4.1	4.1

However, it is worth to observe students' perceptions are favorable though lower than

coordinators' perceptions. Table 2 summarizes results (H4 is rejected).

Table 2: GAP 11 analysis

Dimension	Students' score	Coordinators' score	p-value	GAP
Assurance	3.57	3.8	0.000	Negative
Empathy	3.38	4.3	0.000	Negative
Responsiveness	3.31	3.4	0.000	Negative
Reliability	3.57	4	0.000	Negative
Website content	3.59	4.1	0.000	Negative
Overall quality	3.68	4.1	0.000	Negative

Discussions

This paper aimed to assess quality gaps in education services provided by a Public Administration undergraduate distance course from Brazil. Therefore, students and course coordinators were surveyed. Ten institutions participated on the study and their course managers were depth interviewed as well as 593 students composed a final sample of our electronic survey. In other words, the article proposes the use of a business perspective to evaluate distance education services, whereas this can be considered a service, but with distinct characteristics of other non-educational services.

From this perspective, education can be studied through a market orientation lens, focusing on high quality perception and, therefore, student satisfaction and reducing levels of dropout and high level of student motivation.

Collected data led to four quality gaps analysis, considering expanded model proposed by Samea and Shanin [9]. It was observed that the educational institutions have not yet adopted the business approach in their courses. They own a well-structured process to identify students' expectations and needs. In general, courses strictly follow the guidelines from Brazilian Ministry of Education and some institutions had done some level of research to identify potential and current problems, according to students and teachers/tutors points of view.

However, even in those cases, where information is gathered, it is not strategically used to outline policies and action plans focusing on reaching quality perception and satisfaction, as wells as meeting students expectations. The report indicates that coordinators, in general, collect information, but there is no well structure system to use information and make changes in course and respond to environment demands.

Additionally, considering that every undergraduate course in Brazil should follow legal regulation from Ministry of Education, it was observed that some institutions sought to differentiate itself in the market by offering highly qualified manpower (highly qualified teachers and tutors, these professionals are differentiated in both knowledge in their research areas and in student assistance) and by developing diverse educational activities, which implies a positive gap.

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It was also observed that there is a negative gap in relation to what is communicated about the course and what is actually offered. The official UAB website indicates that the support centers have appropriate infrastructure to distance course which impliesintensive use of technology. However, coordinators have reported difficulties in terms of internet access in centers located in remote areas of the country, which becomes an obstacle and can harm course performance. Other features disclosed are actually translated into specifications of service .

Finally, when comparing students and managers views of students aboutquality dimensions, we observed favorable average score for coordinators and students. However, the t-test of significance states coordinators' opinion is more favorable than students', it means coordinators are more optimistic than the students about quality in the distance course, which can lead to erroneous strategic decisions about the course.

The approach of service quality can be incorporated into educational management, complementing methods already used by educational institutions, adding business insights that help strategic positioning.A more market-oriented approach is indicated for both public and private institutions, since this strategy can help them get differentiated in an increasingly competitive context. It is noteworthy that education is not a conventional service and its social mission, which is to train and develop human beings and citizens, should be primarily taken into account in the design of management processes.

The article provides interesting insights into the use of a business perspective in the educational context, giving input for strategic decision making.

As a future study we propose the application of the whole gap model (not only a few gaps) to other education services cases, in both public and private institutions. In addition, other education services stake holders might be studied in order to better understand quality gap, such as instructors and support staff, then new gaps can be discovered and an extended model might emerge.

Acknowledgements

CAPES (Coordination for Higher Education Personnel Improvement) – BEX 4186/11-7.

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