

Class Service Quality: Moving Beyond SERVQUAL

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Abstract

This paper explores the development of an improved measure of class service quality (ClassQual) in a university environment. By specifically examining data collected from seventy-three Information Systems students at two large universities in the midwest and southern U.S, the significance of different aspects of the class service experience is highlighted. Results of the ClassQual instrument indicate that both the level of faculty concern and course content impact students' perceptions of the overall service quality (OSQ) they receive in a class. Approximately 42% of the variance in OSQ was explained in the study indicating that the students surveyed value the availability, respect, and interest provided to them by the faculty member as well as the worth of the course information and the faculty's ability to communicate that information clearly. By better understanding the criteria important to students in their evaluation of a class service experience, we can more accurately focus on improving both the quality of instruction and the student experience.

Keywords: class service quality, classroom evaluation, service quality

1. INTRODUCTION

Universities and colleges around the world continue to be faced with increased competition as the options for students to obtain academic degrees evolve and change. The ability to share information and provide feedback on the quality of education at these institutions has also changed compared to just a decade ago. Students share information about faculty and classes quickly and easily via the Internet. It is, therefore, more imperative than ever that universities and colleges accurately measure

the quality of the services they deliver in order to improve the experience of students experience. It has become increasingly more important for universities to differentiate themselves and to consistently provide a quality experience with their customers – students.

Previous research has acknowledged that the classroom experience can be conceived as a service (Schneider, et al., 1994) much like other services provided to individuals: banking, healthcare, retail, etc. Students are, therefore, customers that have certain expectations and perceptions of service quality related to

the time spent in the classroom. In response to this, universities are becoming more and more "customer-centric" (Stodnic and Rogers, 2008, p. 115). In order to move forward with more accurately assessing the quality of service in the classroom, this paper applies concepts developed in marketing to implement a new measure of class service quality (Class-Qual).

2. PREVIOUS RESEARCH

Previous research has recently begun to approach the issue of class evaluation from a service quality perspective. The majority of these studies have used the SERVQUAL instrument from marketing to examine the academic context (Barnes, 2007; Bayraktaroglu and Atrek, 2010; Stodnick and Rogers, 2008). SERVQUAL is based on a disconfirmation model which operationalizes service quality as the gap between a user's expectations of service and their perceptions of service received. These expectations and perceptions are measured across five dimensions: Tangibles, Reliability, Responsiveness, Empathy, and Assurance. While SERVQUAL has historically been the "go to" service quality measure, researchers in a variety of disciplines have noted significant problems with the instrument.

The most frequently cited problems with SERVQUAL include: 1) the instrument's unstable dimensionality (Babakus and Boller, 1992; Carman, 1990; Cronin and Taylor, 1992); 2) the instrument's use of difference scores (Brown, Churchill, and Peter, 1993; Van Dyke et al., 1997); and 3) the instrument's conceptualization of expectations (Teas, 1994). Additionally, it has been acknowledged for some time that SERVQUAL provides an incomplete conceptualization of the service experience.

Marketing researchers have identified a number of factors relevant during such a service experience (e.g., Bitner, 1992; Gronroos, 1990; Rust and Oliver, 1994). Two of these factors, which may be especially relevant in an academic context, are the service delivery and the service product. In order to better understand how SERVQUAL fails to completely capture the service experience, the following sections develop the service delivery and product concepts using examples drawn from an academic context.

Service Delivery

Service delivery includes aspects of the service experience that involve the service provider and his or her interaction with the consumer. In line with disconfirmation theory, service delivery can be assessed through the comparison of the individual's expectations and perceptions. As an example, a student may rightly expect his or her professor to be highly educated, professional, and passionate about the subject. When the student and professor interact in class, the student's perception of the professor's performance will be compared with the expectations he or she formed before the class began. If the professor can't answer student questions, is consistently late for class, or appears bored with the subject, then the student's expectations will be disconfirmed and the assessment of the delivery will be negative. If, on the other hand, the professor knows the material, is on time, and courteous and enthusiastic about the class, then the student's expectations will be met or exceeded and the assessment of delivery will be positive.

Service Product

According to Gronroos (1990), the service product is the service itself. Said another way, if the service delivery is the "how" of a service experience, then the service product is the "what". In a class setting, the professor's presentation of the material (e.g., lecture, demonstration, etc.) is the service delivery, while the material itself is the service product.

Following the disconfirmation paradigm, service products can also be assessed through the comparison of expectations and perceptions. Much as with service delivery, users will form expectations of the service product before it is delivered. In a class setting, students may form expectations related to the breadth of the material (a variety of topics will be covered), the usefulness of the material (the information can be used in the future), and the relevance of the material (the information matters). Once the material has been conveyed, the student's perceptions will either confirm or disconfirm these expectations. If the perceptions exceed the expectations, then the student will rate the quality of the service product as positive. If the expectations exceed the perceptions, then the student will rate the quality of the service product as negative.

Proposing a New Measure of Classroom Service Quality

Working from the previous examples, it is apparent that SERVQUAL does not capture all aspects of a service experience. At best, four of SERVQUAL's dimensions (Reliability, Responsiveness, Assurance, and Empathy) capture the service delivery factor (Schneider and White, 2004). It does not, however, address the service product. In order to address this gap in the research on service quality and highlight the importance of service product in the assessment of the class experience, we propose a more comprehensive measure of class service quality: ClassQual.

3. INSTRUMENT AND STUDY DESIGN

The ClassQual instrument is divided into three sections: service delivery, service product, and overall service quality. Where possible, the items used in each section were modified from existing measures. The initial list of these items is given in Table 1.

Service Delivery

1. The dependability of the instructor.
2. The timeliness (response to questions, emails, etc.) of instructor.
3. The knowledge of the instructor.
4. The accessibility (ease of contact, office hours, etc.) of the instructor.
5. The respect the instructor shows to students.
6. The instructor's ability to communicate clearly.
7. The instructor's interest in, or concern for, students.
8. The instructor's ability to provide students with personalized attention.
9. The instructor's use of on-line technology (Blackboard, etc.).
10. The professional appearance of the instructor.

Service Product

1. The breadth of information (variety of topics) covered in class.
2. The relevance of the information (up-to-date topics) covered in class.
3. The usefulness of the information covered in class.

Overall Service Quality

1. I believe I learned a great deal in this class.
2. I am very satisfied with my experiences in this class.
3. Overall, this was an excellent class.

Table 1: Initial Items by Construct

The ten items in the service delivery section were based on the service quality dimensions used by Parasuraman, Zeithaml, and Berry (1985, 1988) to develop the SERVQUAL instrument. However, instead of restricting the new items to SERVQUAL's five dimensions, it was decided to return to Parasuraman et al.'s (1985) original ten dimensions. The goal is to provide more diagnostic richness and is in-line with instruments developed by researchers such as Hartline and Ferrell (1996).

The three items in the service product section were based on an existing instrument created by Sureshchandar, Rajendran, and Anantharaman (2002). This instrument was developed to assess service product quality in a banking environment. Items capture such attributes as variety, usefulness, and innovation. These items were modified and augmented to better fit an academic context. The resulting items assess the breadth, usefulness, and relevance of the information conveyed in the class.

In keeping with the conceptualization of service quality as the difference between expectations and perceptions, each of the service delivery and service product items is also designed to capture disconfirmation. However, instead of calculating a difference score from separate expectation and perception items, ClassQual's items are designed to measure the disconfirmation directly. This is accomplished by asking the respondents to assess the quality of service for each item using a seven point Likert-type scale with the anchors "much worse than I expected" and "much better than I expected." This use of direct measurement was originally proposed by Carman (1990) as a replacement for the calculated difference scores used by SERVQUAL. Researchers have long attacked SERVQUAL's use of calculated difference scores as being overly simplistic (Brown, Churchill, and Peter, 1993; Van Dyke et al., 1997). Carman (1990) showed that direct measures were more effective and much more parsimonious.

In addition to items for the service delivery and service product, three items were developed to measure overall service quality. These items were loosely based on the single item measure used by Parasuraman et al. (1988) to assess service quality on a scale ranging from "poor" to "excellent". The newly developed items use a seven point Likert-type scale with the anchors "strongly agree" and "strongly disagree." The aggregation of the three items

measuring overall service quality formed the dependent variable of interest in this study.

Instrument Validation

Once the ClassQual instrument was designed, it was validated in a field study using a sample drawn from undergraduate students enrolled in Information Systems courses at two large universities in the midwest and southern United States. Surveys were administered online and provided a total of 73 usable responses. The demographic breakdown of respondents is given in Table 2.

	n	Male	Female	
Gender	73	61.6%	38.4%	
	n	Fresh.	Soph.	Jun.
Class	71	-	43.8%	35.6%

Table 2: Sample Demographics

The collected data were first subjected to an exploratory factor analysis in order to determine the underlying factor structure. In keeping with previous research on service quality, oblique rotation (Promax) was employed due to expected high inter-factor correlations. Given the exploratory nature of the study, the number of retained factors was determined by keeping all factors with eigenvalues greater than 1.0. This produced a four factor solution which explained 73.8% of the variance. The factor loadings for this solution can be seen in Table 3.

	F1	F2	F3	F4
Del1			.794	
Del2			.865	
Del3				
Del4		.714		
Del5		.946		
Del6	.687			
Del7		.644		
Del8		.822		
Del9				.766
Del10				.835
Prod1	.829			
Prod2	.994			
Prod3	.737			

Table 3: Loadings for Four Factor Solution

In order to determine which items to drop, the criteria proposed by Hinkin (1998) was used. Specifically, only items which loaded on a given factor at 0.40 or above, and/or which

loaded on a given factor twice as much as any other factor were retained.

A review of the item loadings indicates that neither service delivery nor service product factored as anticipated. Although the first factor contains all the items of the service product, it also contains the service delivery item representing the instructor’s ability to communicate clearly. It appears that students may associate the information in a course with the clarity of its presentation. In recognition of this association and to more accurately represent the construct, the factor was renamed Course Content.

The second factor contains only service delivery items that deal with a subset of delivery related to the instructor-student relationship. This highlights that students are apparently very aware of the consideration given to them by the faculty member. Based on the interpretation of the items on the second factor, the construct was renamed Faculty Concern.

Both the third and fourth factors only contain two items. Factors with less than three items are generally considered weak and unstable (Costello and Osborne, 2005); therefore, it was decided to drop these factors from analysis.

Measurement Validity and Reliability

As a next step in analyzing the ClassQual service quality factors, convergent and discriminant validity along with reliability were examined. Convergent validity indicates the degree to which items are measuring the same construct. In order to establish convergent validity two criteria were used. First, there must be high item loadings on distinct factors.

	Concern	Content
Concern	0.867	
Content	0.511**	0.865

**p<.01

Table 4: AVEs and Correlations

A review of Table 3 shows that no item loads less than 0.640, with most items loading at 0.700 or higher. Second the square root of the average variance extracted (AVE) for each construct must be greater than or equal to 0.707 (Fornell and Larcker, 1981). These values can be seen in Table 4 (bolded on the correlation diagonal). Inter-factor correlations are provided in the table as well. Given that the criteria are met, convergent validity is estab-

lished. Descriptive statistics are provided in Table 5.

	Mean	Std. Dev.	Alpha
OSQ	6.406	0.856	0.911
Concern	6.114	0.819	0.853
Content	6.236	0.726	0.824

Table 5: Descriptive Statistics and Reliabilities

Discriminant validity indicates the degree to which items which are supposed to measure different constructs actually differentiate between the constructs. It is established when the square root of the AVE for a particular construct is greater than the correlation between that construct and all other constructs in the model (Fornell and Larcker, 1981). Table 4 also shows that this criterion is met, and thus discriminant validity is established.

In order to determine the reliability of the constructs (the degree of consistency among the construct items), the internal consistency reliability was calculated using Cronbach's alpha. According to Nunnally (1978), reliability is demonstrated when Cronbach's alpha is at least 0.70 for exploratory measures. All factors in this study meet this desired level and have reliabilities of above .80. Reliabilities for the constructs are provided in Table 5.

4. RESEARCH ANALYSIS AND RESULTS

Following the development and validation of the ClassQual instrument, linear regression was used to test the relationships between faculty concern, course content, and overall service quality. As a part of the analysis, regression assumptions were first validated. Reviewing a scatter plot of the standardized residuals, the data appeared to exhibit constant variance due to the lack of any fanning in the distribution of the data points. The presence of multicollinearity was also considered by checking the variance inflation factors and condition indices. The variance inflation factors were all less than 10 and the condition indices were all less than 100 indicating that there was no problem with multicollinearity.

Having met the assumptions, the regression results were then interpreted. The results show that faculty concern and course content are both significant ($p < 0.05$) predictors of overall class quality (Figure 1). The use of these two constructs explained approximately

42% of the variance in service quality assessment.

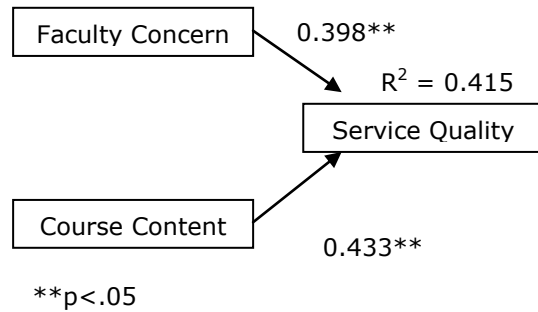


Figure 1: Research Model Results

5. DISCUSSION

By developing and validating a new measure of class service quality, this research has made a number of significant contributions to the literature. First, it demonstrates that the conceptualization of service quality posited by the SERVQUAL instrument is insufficient. Specifically, the research shows that SERVQUAL does not sufficiently capture all aspects of a service experience. This point is made clear by the validation of course content as a significant predictor of overall service quality. Course content is closely related to the concept of service product in that the content of a course is what is received during the service experience. Given that SERVQUAL does not measure service product, this finding illustrates one more weakness with the instrument.

Second, the paper furthers the development of service quality as a surrogate measure for student satisfaction with a class. The ClassQual instrument is a parsimonious measure which captures two aspects of the class service experience which students care about: faculty concern and course content. The fact that ClassQual measures faculty concern and course content should serve as a reminder to faculty that the way they treat students and the relevance of their material really does matter. Colleges and universities using this instrument will be better able to measure how well they are serving their customers on a class-by-class basis.

Lastly, the paper lays the groundwork for future research into the factors of a class service experience. As examples: 1) researchers can investigate additional factors which may be

useful in determining overall service quality assessment; 2) researchers can test factors which may moderate the relationships; and 3) researchers can develop and test interventions which faculty can use to more effectively manage their quality of service.

6. LIMITATIONS AND CONCLUSION

As with any exploratory study, the results presented herein suffer from a couple of limitations. The first issue related to the sample size. For this study, the sample size was not large enough to split in order to run a confirmatory factor analysis. Therefore, only an exploratory factor analysis could be run. It will fall to future studies to perform this test and assess the model fit of the two factor solution. A second limitation of the study relates to the data collected. Data for the study were all drawn from students in Information Systems classes. While the majority of the students were not actually Information Systems majors (most of the students were in introductory Information Systems classes required for all business majors), the sample was still restricted to classes in one discipline. Drawing samples from a variety of disciplines would further strengthen the generalizability of the results. Additionally, to specifically enhance the movement of evaluation specifically in Information Systems classrooms, it would be necessary to increase the sample size of majors for purposes of comparisons, etc.

The research model and ClassQual instrument presented in this paper have implications for both researchers and faculty. For researchers in education, the model presents a new way of conceptualizing class service quality. This causal view allows researchers to more thoroughly explore the nomological network of class service quality. For faculty, the model identifies two possible points of intervention in the management of class service quality: faculty concern and course content. By focusing on these factors, faculty can better serve their students and greatly improve the class experience benefiting their academic institutions as well.

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APPENDIX I

Faculty Concern

1. The accessibility (ease of contact, office hours, etc.) of the instructor.
 2. The respect the instructor shows to students.
 3. The instructor's interest in, or concern for, students.
 4. The instructor's ability to provide students with personalized attention.
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Course Content

1. The breadth of information (variety of topics) covered in class.
 2. The relevance of the information (up-to-date topics) covered in class.
 3. The usefulness of the information covered in class.
 4. The instructor's ability to communicate clearly.
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Overall Service Quality

1. I would rate our IS department as an excellent service provider.
 2. I am satisfied with the services provided by our IS department.
 3. Overall, our IS department provides excellent quality service.
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