

THE ROLE AND IMPACT OF ON LINE COMMUNICATION ON UNIVERSITY STUDENTS'S PERCEPTION OF SERVICE

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Abstract

The aim of the paper is to study the relationship between University on line communication mix and student perception of the quality of the service being offered. In particular, we analysed the extent to which on line communication tools and contents are important in determining the students' perception of the quality of this service, looking at the contents and information students would like to have on line and which tools are most used. It is also necessary to understand if there is a clear link between type of information to be transmitted and preferred tool. We expect to find that the on line communication mix has a direct and important impact on student perception of the quality of service the university offers, especially when contents and tools are managed carefully by institutions. The reason for this is that communication, in general, is important in determining customer perception of the quality of service and also because of the primary target Universities have, let's say 'generation Y', and the possibility web 2.0 gives to shape the communication and its level of interactivity as desired by the audience.

To reach this aim, after a brief review of the literature on the relationship between the communication mix and the users' perception of the quality of service, we constructed a questionnaire to survey students of the 'Tuscia' University, Viterbo.

Keywords: on line communication, perceived quality of the service, university, faculty, students, communication strategies.

1. Introduction and objectives

Especially in today's digital era communication plays an ever increasing role in shaping the relationships between universities and students. Progress in information technology allows people to become active producers and disseminators of content (Jenkins, 2007; O'Reilly,

2005; Tancer, 2008) or prosumers (Toffler, 1984; van Dijck, 2010), and not only information seekers through the web as in the past.

The continuous changes in on line communication forms and tools have been studied from different points of view, especially seeking to understand how colleges can use them to improve an on-going relationship with students. In fact, universities are aware of the major role new digital communication tools can play in fostering and continuously improving relationships with their students and that it's necessary to study the right mix to better satisfy information and contact needs expressed by their primary target (Aquilani and Lovari 2008; Marchione, Martino, Pattuglia and Scioli, 2009; Aquilani and Lovari, 2009). Moreover, the increasing weight of digital communication tools is driven by communication budget cuts and the specific target universities have: the so-called 'net generation or generation Y' (Tapscott, 2009) or 'digital natives' (Presky, 2001), made up of very young people who 'grow-up digital' (Tapscott, 2009) and whose media consumption patterns have been deeply influenced by ever new digital technologies (Censis, 2009; Istat, 2009).

This scenario clarifies how strategic on line communication tools could be used to create and better manage the relationship between universities and students (Kang and Norton, 2006) and also facilitate participation, build loyalty, improve satisfaction and reputation (Abrahamson, 2000; Gordon and Berhow, 2009; Kent, Taylor and White, 2003; McAllister-Spooner, 2008).

Although, in recent times, many scholars have studied how students and more generally young people use ICTs (Cotten, 2008; Jones and Fox, 2009; Lenhart, Arafeh, Smith and Macgill, 2008; Pasek, More and Hargittai, 2009; Roberts and Foher, 2008), some tools and their effects (Fox and Madden, 2005; Horrigan and Rainie, 2005; Jones and Madden, 2002; Jones and Fox, 2009; Junco and Mastrodicasa, 2007; Rainie and Tancer, 2007) and also the impact of this usage on student outcomes (Pasek, More and Hargittai, 2009; Junco and Cotten, 2010). Less research has been done specifically on the relationship between on line communication and university students' perception of the service offered by the faculty. For these reasons the aim of the paper is to focus attention on this relationship and on how faculties can use on line communication to improve student perception of the quality of service and 'customer satisfaction'.

2. Literature review and research model

Student-faculty interactions have been studied over the past 30-plus years, mostly concentrating on the interaction students have with faculties outside the classroom. What seems clear from the literature is that students do not take full advantage of the opportunities the faculty presence offers: only a few of them have out-of-class faculty contacts and they are sporadic (Cotten and Wilson, 2006; Fusani, 1994; Hagedorn, Maxwell, Rodriguez, Hocevar and Fillpot, 2000; Jaasma and Koper, 1999; Kuh and Hu, 2001; Nadler and Nadler, 2001; Terenzini and Wright, 1987; Volkwein, King and Terenzini, 1986). These few contacts are generally brief and mostly related to course issues (Anaya and Cole, 2001; Cotten and Wilson, 2006, Fusani, 1994; Jaasma and Koper, 1999; Nadler and Nadler, 2001). Students seem ‘not to feel sufficiently comfortable with faculty to actually approach them’, above all because they are not sure whether the faculty is interested in interacting with them (Cotten and Wilson, 2006). However, from the literature it is clear that student-faculty interactions are important for student outcomes and satisfaction.

In this scenario it is clear faculties should enhance student willingness to interact in order to improve their satisfaction and their outcomes. In our opinion on line communication can play an important role in fostering and develop satisfaction and student desire to interact with the faculty, also because the digital tools that faculties can use are interactive by definition (eg. Facebook) and so able to express the willingness of the faculty to keep in touch with students throughout their course.

In this paper we consider faculty interactions at an institutional level, given the specific subject investigated. In particular, we will focus our attention on the relationship between tools and content of on line communication used by the faculty and the satisfaction level they can generate on students’ perception of service.

No previously found contributions have studied this subject in the university or faculty context, so we refer to the literature on customers’ perception of the quality of services delivered through technological interfaces, a part of service management literature (e.g. Berry, Parasuraman, Zeithaml, 1988; 1990; 1991; Rust and Oliver, 1994; Wittreich; 1966).

These studies assert that ‘customer satisfaction [...] is influenced by the service value a customer receives from the service delivery system’ (Ba and Johansson, 2008). In today’s digital scenario many services are delivered through company or institution web sites without any direct contact between the customer and the firm/institution. Thus the ‘website [...]

becomes the service delivery system, which is critical for a company's value creation strategy' (Ba and Johansson, 2008).

The internet service delivery system (eSDS) seems to directly influence customer satisfaction. This is also due to different factors, such as the service value, the perceived ease of use of the website and the perceived control (Ba and Johansson, 2008). Dissatisfactory evaluation of the service in an ICT-based service seems to be explained mostly by process failure and poor process design (Meuter, Ostrom, Roundtree and Bitner, 2000). Perceived ease of use is one of the main factors affecting user acceptance of new technologies (Davis, 1989), and website design, architecture and available tools are predictors of ease of use perceived by customers (Lohse and Spiller, 1998; Palmer, 2002). In order to be perceived as easy to use, a website must be well projected and designed (Chen, Gillenson and Sherrel, 2004). Hui and Bateson (1991) describe perceived control as the control the customer has on the process or the outcome of it. So, perceived control affects customer loyalty and in this way customer satisfaction (Lee and Allaway, 2002), which is very important in a self-service setting (Langeard, Bateson, Lovelock and Eiglier, 1981).

The next factor considered in our model is interactivity. Literature shows that interactivity has been studied for some time through different disciplines: social psychology, computer science, communication, object interaction and marketing (e.g. Blattberg and Deighton, 1991; Cho and Leckenby, 1999; Fortin and Dholakia, 2005; Florenthal and Shoham, 2010; Hoffman and Novak, 1996; McMillan, 2002; McMillan and Hwang, 2002; Rafaeli and Sudweeks, 1997; Simmons, Thomas and Truong, 2010, Wiener, 1950; Wu, 2006). In our opinion, Liu and Shrum (2002, p. 54) best express the different perspectives stating that interactivity is 'the degree to which two or more communication parties can act on each other, on the communication medium, and on the messages and the degree to which such influences are synchronized'. In fact, this definition clarifies the three differentiating dimensions of interactivity, which are active control, two-way communication and synchronicity (McMillan and Hwang, 2002; Liu, 2003; Zhao, Dholakia, 2009). Obviously, interactivity doesn't apply only to the web 2.0 world (e.g. face-to-face interactions), but internet usage has surely modified the way in which it can be viewed and how it affects relationships between people and/or people and firms/institutions.

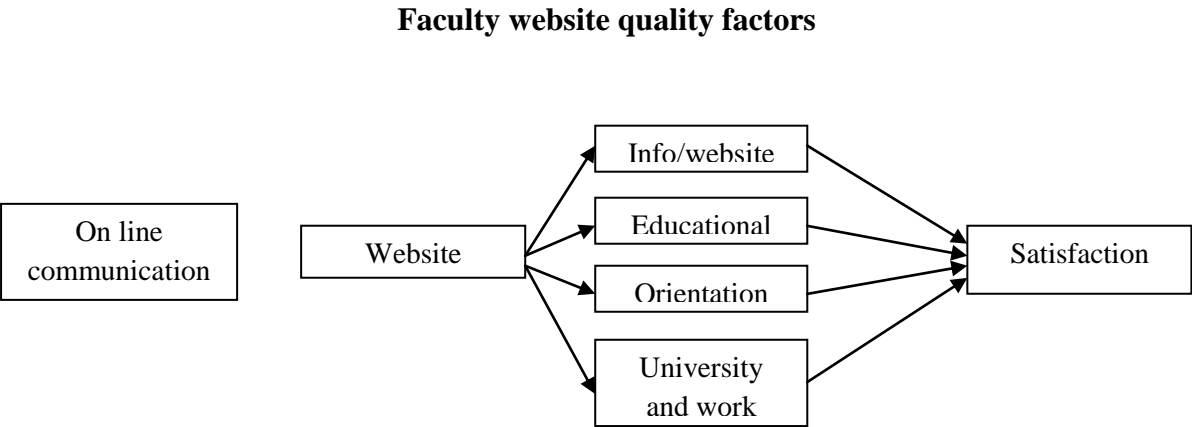
In our specific context, interactivity plays a different role in the relationship between eSDS and customer satisfaction; thus when the interaction needed with the service provided is higher, the satisfaction in using the website as a service delivery system decreases (Ba and

Johansson, 2008). So it seems that the direct interaction required by customers from the firm or institution negatively affects customer satisfaction experimented through the website.

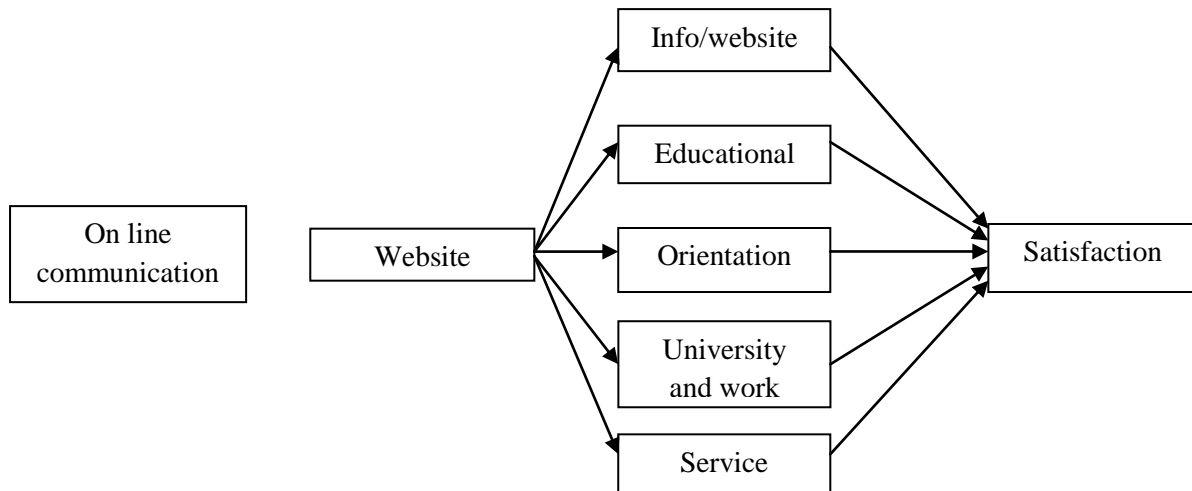
In this domain it is also important to point out that interactivity attributes such as ‘key word search’, ‘navigation’, ‘online ordering system’ and ‘virtual reality display’ are linearly linked with customer satisfaction, but some other attribute relationships are not linear (Zhao, Dholakia, 2009). Thus ‘personalization’ and ‘customer-to-customer communication’ are very attractive to customers who are able to distinguish a web site from those of competitors. These aspects should both be continuously improved, however in a non-linear way (Zhao, Dholakia, 2009).

Thanks to this literature and considering the faculty context in which we move, we formulate our own research model looking at faculty website tools and contents which are divided into different areas, seeking to understand which of them can better explain perceived student satisfaction for the delivered service. In the first part of the figure below (‘faculty website quality factors’) we consider the web site sections and in each of them investigate student quality perception versus expectations. In the second part of the same figure we look at the content of the faculty web site considering the same sections but adding the overall perceived service level.

Figure 1. Website research model

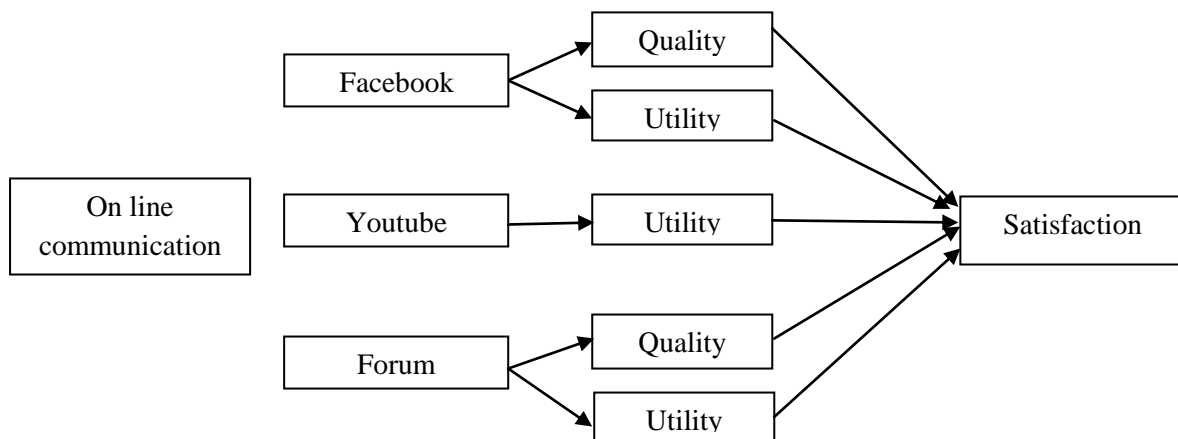


Faculty website contents



Taking into account the interactivity issue found in previous literature, we also try to understand the impact of different on line communication tools with more interactivity from the faculty website such as the Facebook faculty profile, YouTube faculty channel and faculty forum.

Figure 2. Other on line communication tools research model



3. Method

This research was carried out in the Economics Faculty of the Tuscia University during May 2010.

A questionnaire of 35 questions was used within which a measuring scale like the Likert one (Aureli Cutillo, 1997; Blalock, 1984; Brasini, Freo, Tassinari, Tassinari, 2002; Courtenay, 1991; De Luca, 2002; Piccolo, 2000) was included for the 25 closed answer questions, 3 regarding student profile, 9 on the quality of the faculty internet site, 9 regarding the 2.0 web (YouTube, Facebook and forum) and 4 dealing with the relative satisfaction of various communication instruments. We chose a Likert scale from 1 to 6 because the aim of the study was to identify and above all distinguish students with a positive perception from those with a negative one, making sure that students clearly chose one of the two alternatives and didn't remain in the intermediate level of perception, which normally more frequently occurs using a five point scale (Brasini, Freo, Tassinari, Tassinari, 2002).

The following areas were highlighted within the questionnaire :

- *segmentation*. Questions 1-8 (necessary to identify the characteristics of the student interviewed);
- *evaluation of the on line communication instruments used by the Economics Faculty*:
 - internet site, questions 9-17;
 - web 2.0 YouTube, Facebook and forum, questions 21-34;
- a third dealing with student *customer satisfaction* regarding the communication instruments used by the faculty, questions 18-20 and 35.

The ServQual method of questionnaire construction was used to analyze website satisfaction used in quantitative research of other types of business clients in order to reveal their perception of the level of quality supplied and thus their level of satisfaction. Communication instruments fall within the service area and for this reason this method was chosen for our research. The innovative aspect of ServQual is the double series of questions which makes it possible to measure consumer expectations and perceptions separately. In fact the quality of a service is not an absolute value but shows the clients' comparative judgment of their expectations with their perception of what has been supplied. The value of the quality perceived is thus represented by the level and direction of the difference between perception and expectation; the higher the P perception is compared to expectations, the greater is Q the perceived quality and vice versa, etc.

The following subjects have been highlighted within the sections and expanded in further variables :

- general information present on the site;
- information regarding teaching activities;

- information regarding orientation activities;
- information regarding University & Work;
- on line services.

For each of the following factors the interviewees were asked to indicate, on a scale similar to the Likert one, the level of importance they attributed to each one and what was concretely received/perceived and then finally the level of quality expected and perceived/received for each variable.

For web 2.0 we preferred not to use ServQual since it deals with instruments still not widely used by students and as a consequence the comparison between expectations and perceptions didn't appear significant to our study. In this section of the research our objective was to monitor the number of students who know and use the following communication instruments:

- YouTube Channel;
- Economics Faculty Facebook Group;
- Forum;

and to analyze their judgment regarding their usefulness or otherwise, still using a measuring scale similar to Likert.

Finally, questions were included in the questionnaire aimed at measuring the level of student satisfaction regarding all the communication instruments used by the faculty to supply students with information.

With the questionnaire completed, the following phase of the survey was to define and quantify the population to be surveyed and the sample of individuals to be interviewed through the questionnaire. Once the total number of students enrolled in the Economics Faculty for each year of course had been ascertained, the next step was to form a sample group since their great numbers made it impossible to contact them all.

We chose a sample by quota which is a particular type of purposive sampling, realized through convenient organization. In this way the population and the sample have the same composition following the selected criteria (Brasini, Freo, Tassinari, Tassinari, 2002): the percentage of students in each year of the course study.

The consequence of approaching a sample rather than the total number of students is that in the interpretation of the ensuing results it is necessary to take into account a significance index, in our case this was 95%.

Table 1. Synthesis of enrolments in the Economics Faculty A.A. 2009/2010

	Year	Enrolments	Sample
Three year degree	I	303	100
	II	181	60
	III	138	45
Full degree	I	99	33
	II	66	22
Totals		787	260
Significance index			95%

Source: our research

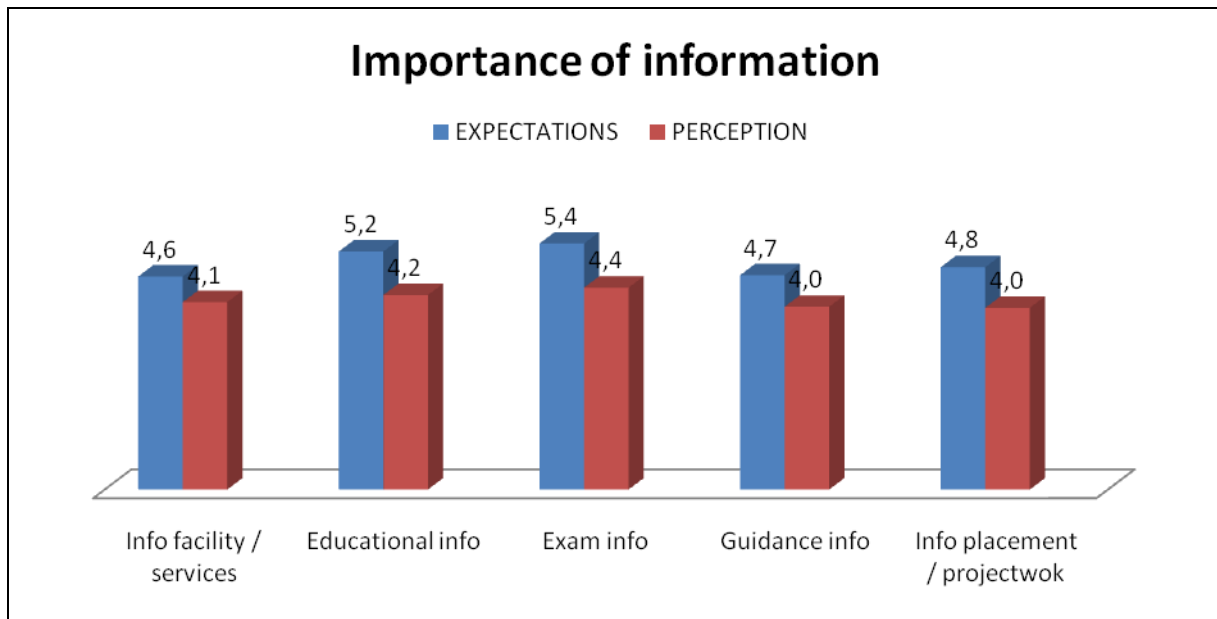
4. Findings

The questionnaire was given to students of the Economics Faculty of the Tuscia University on the basis of the sample taken. From the analysis it emerged that 39% of those interviewed were men whilst 61% were women of whom only 17% were resident in Viterbo, 61% in the Province and the remaining 10% and 12% from Lazio and other regions. 47% declared they used Internet seven days a week while 16% and 14% respectively five and six days, only 13% connected to Internet 1 or 3 days a week. The study of the results shows that only 10% remain connected to Internet for any length of time, while 27% and 24% of those interviewed connect for a short time indicating the points from 3 to 4 on a scale of 1–6. The students were then asked to indicate on a scale similar to Likert from 1-6, what they use mostly on Internet, the web, e-mail, chat or newsgroup. The average obtained shows that the interviewees mostly used newsgroup (average value 4.14), followed by chat (average value 4.12), e-mail (average value 3.79) and lastly the web (average value 3.55).

In the following phase of research, the students were asked specific questions about the importance they give, on a scale from 1 (low) to 6 (high), to the services the faculty supplies to its students through the website and what their level of satisfaction was, based on their perception of quality.

Looking at figure 3 we can see that of all the general information present on the site, that regarding the structures and services is the most complete, unlike those dealing with exams and teaching where the variance between expectations and perceptions is greater. As far as the quality of the site is concerned, updating, completeness of information, ease of navigation and use of the instrument constitute the most important aspects for the users.

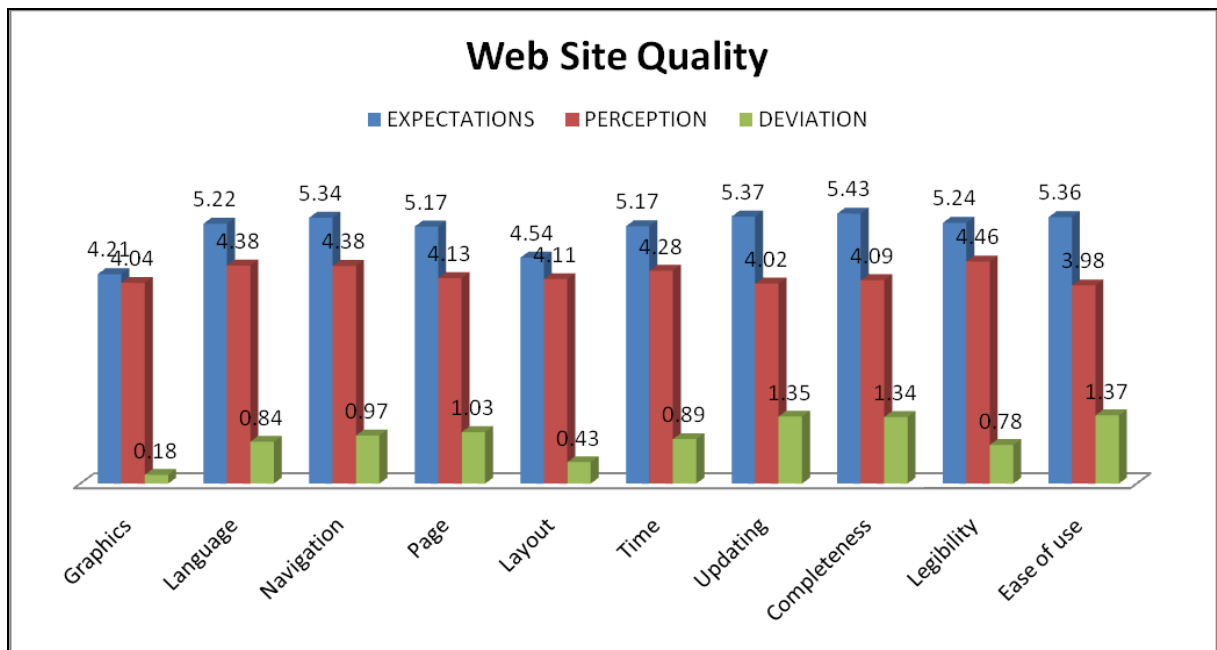
Figure 3 The importance of information



Source: our results

However, students don't seem to be particularly satisfied with the website (the items in this graph identify the different characteristics investigated) given that the variance level for this variable is greater than for the others, as is shown in figure 4.

Figure 4. Website quality



Source: our results

In the teaching area students attribute particular importance to information about exams and teachers whilst paying much less attention to study abroad, seminars/conferences (the items indicated reflect the aspects studied). Also in this case updating is perceived as the most significant factor in order to have correct communication, which however does not seem to give satisfaction. (Fig. 5)

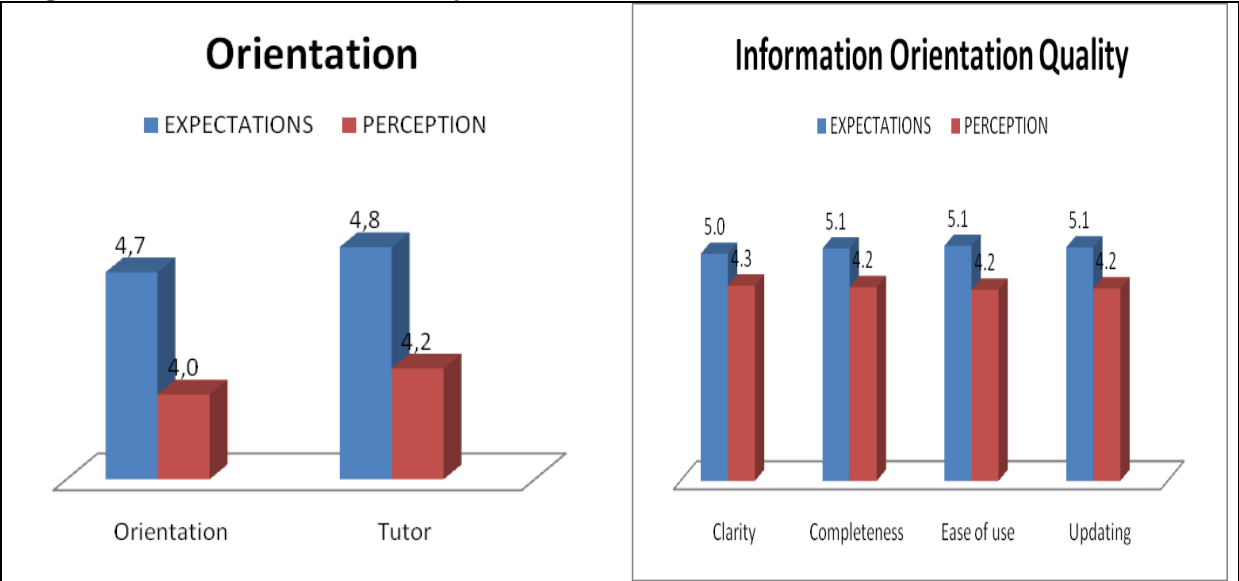
Figure 5. Educational and Quality



Source: our results

Figure 6 shows the results of data concerning orientation and the importance attributed to the following variables: clarity, completeness, ease of use and updating of the information present in this area.

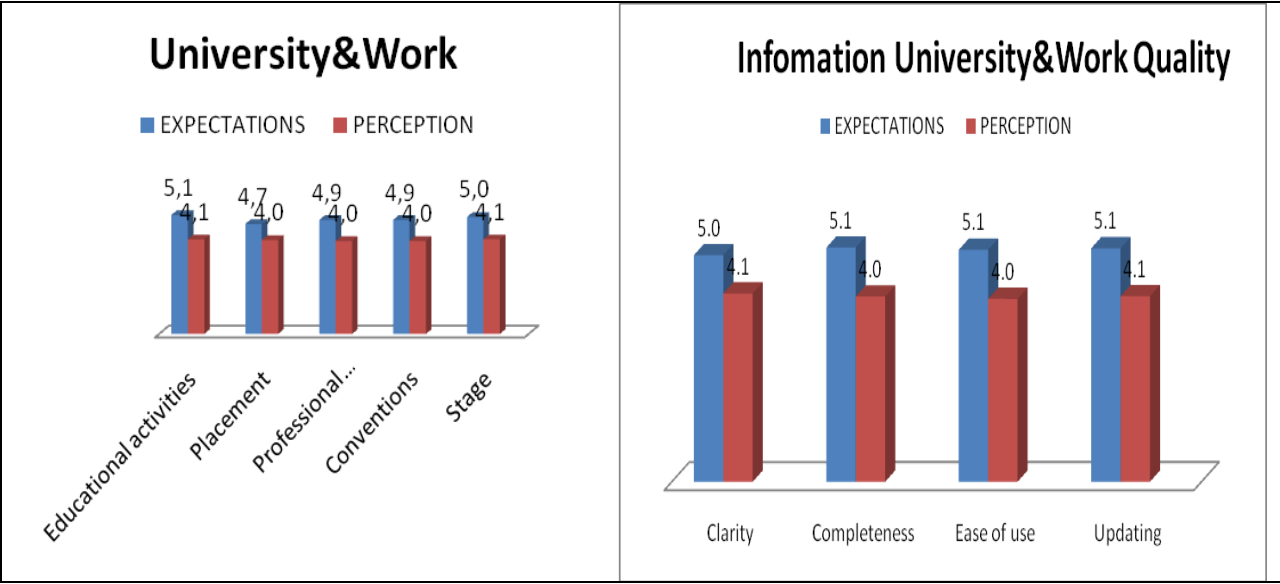
Figure 6 Orientation and Quality



Source: our results

The students, especially those in their last years, seem to pay more attention to the information regarding the relationship between the University and the working world. They considered information about stages, work experience and project work as particularly interesting and also in this case completeness and updating are determining variables for a positive evaluation of the quality of information (Fig. 7)

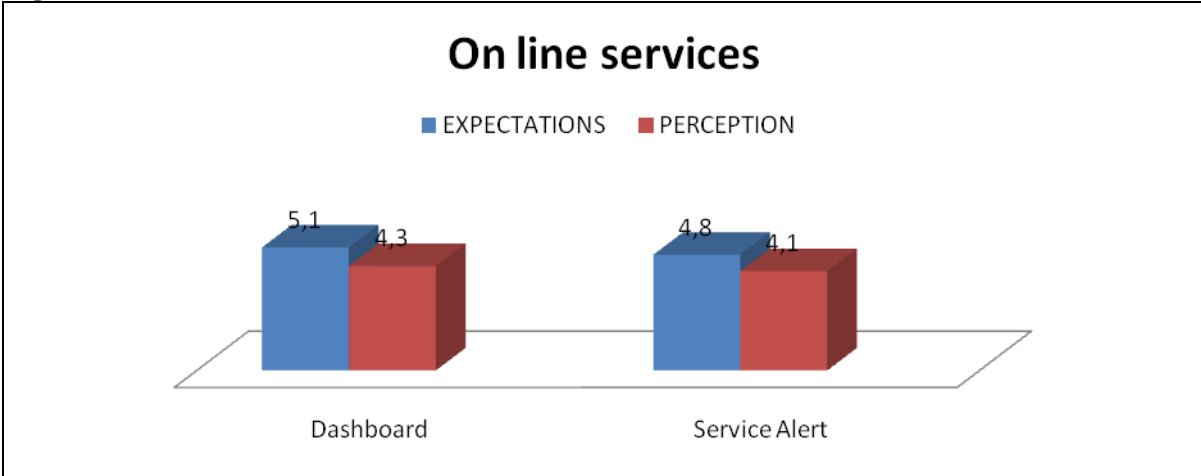
Figure 7. University&Work and Quality of Information



Source: our results

Figure 8, on the other hand, shows the importance of expectations and perceptions regarding on line services supplied by the faculty through the website.

Figura 8 On line services



Source: our results

Ultimately, in order to monitor the perceived quality of the website this research set the objective of measuring the level of student satisfaction for each identified area of the questionnaire (Fig.9)

Figure 9. Satisfaction



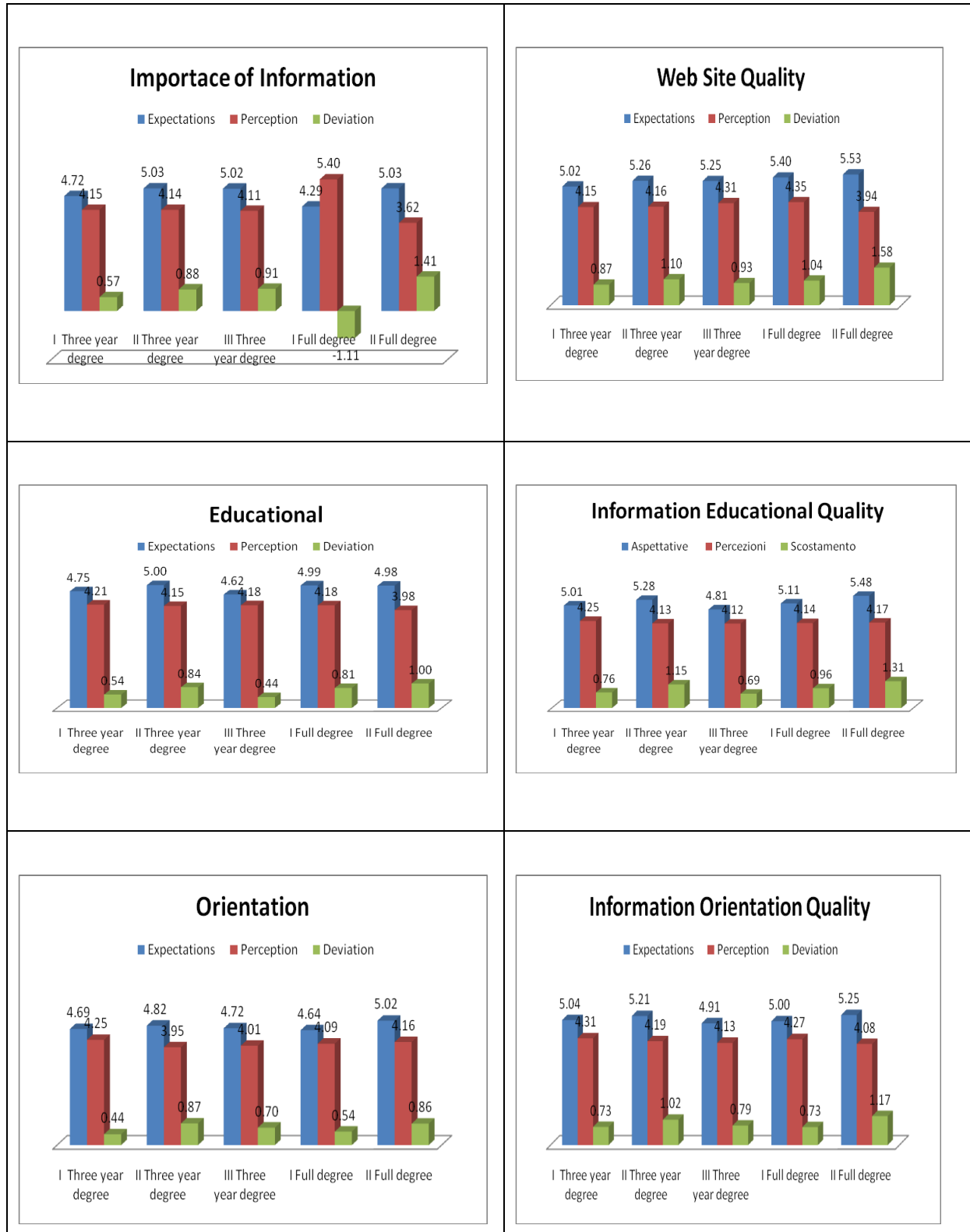
Source: our results

Analysis of the data has not shown a very high level of satisfaction, the values in fact oscillate between a minimum of 3.76 regarding the relationship between the University and the working world, and a maximum of 4.15 of on line services supplied by the faculty. Also the customer satisfaction total is not particularly high, registering a value of 4.18. These results confirm the variance/deviance data; the level of perceived quality compared with expectations in fact has values around 4, with an average variance of 1. The inability of the website to supply students with information equal to their expectations constitutes the main reason for the low level of satisfaction registered.

To have more in depth information about the perceived quality of the web site we did some cross elaborations considering the course year of the interviewed students and the frequency of internet usage (days per week). Due to the large amount of data generated by this operation we synthesized the results using the average value of the different items investigated for each variable considered. This allowed a more immediate benchmark between data.

We first looked at all the variables studied separately above, dividing students by course year as shown in figure 10.

Figure 10 Quality variables divided by student year of course.





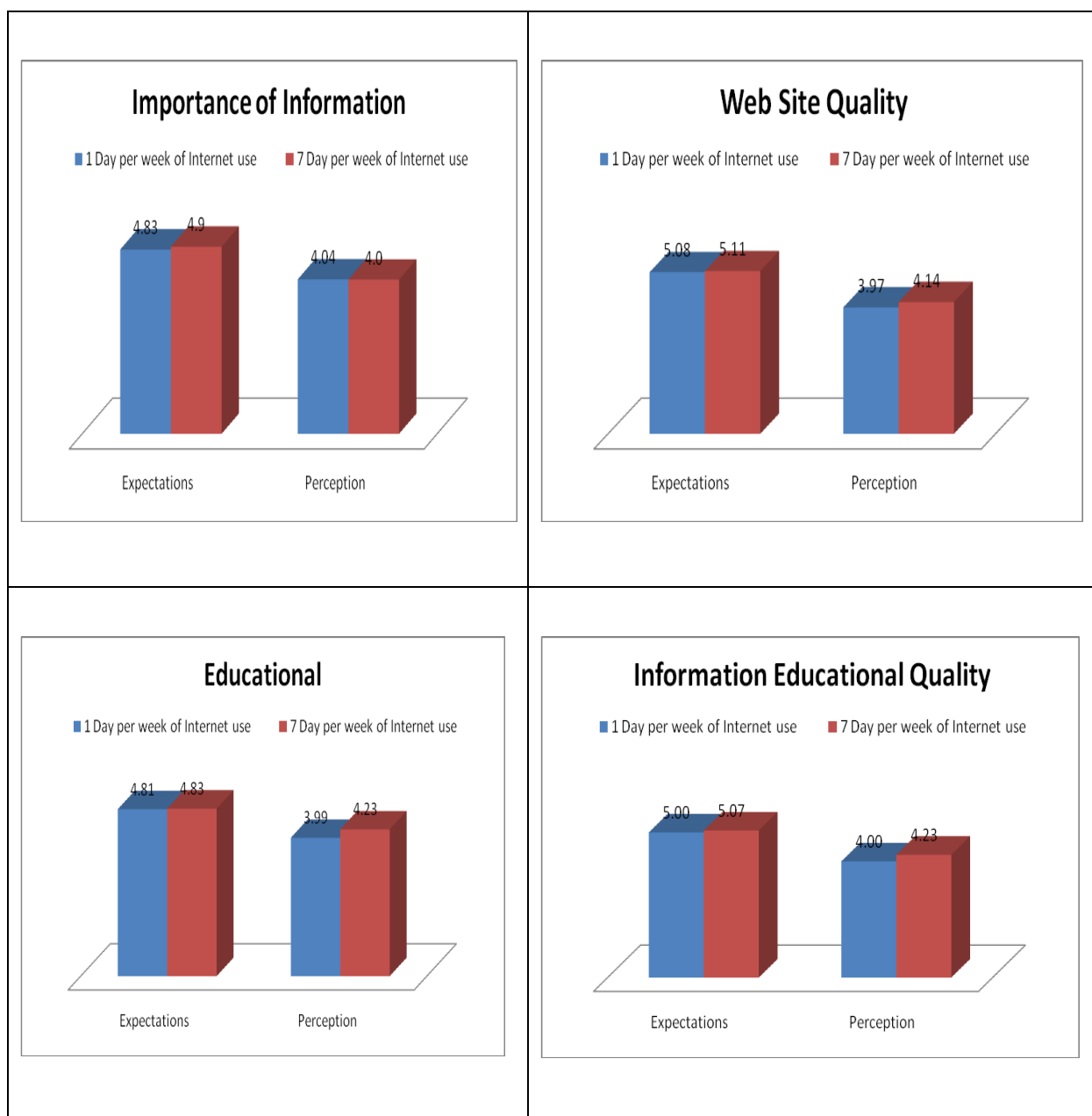
Source: our results

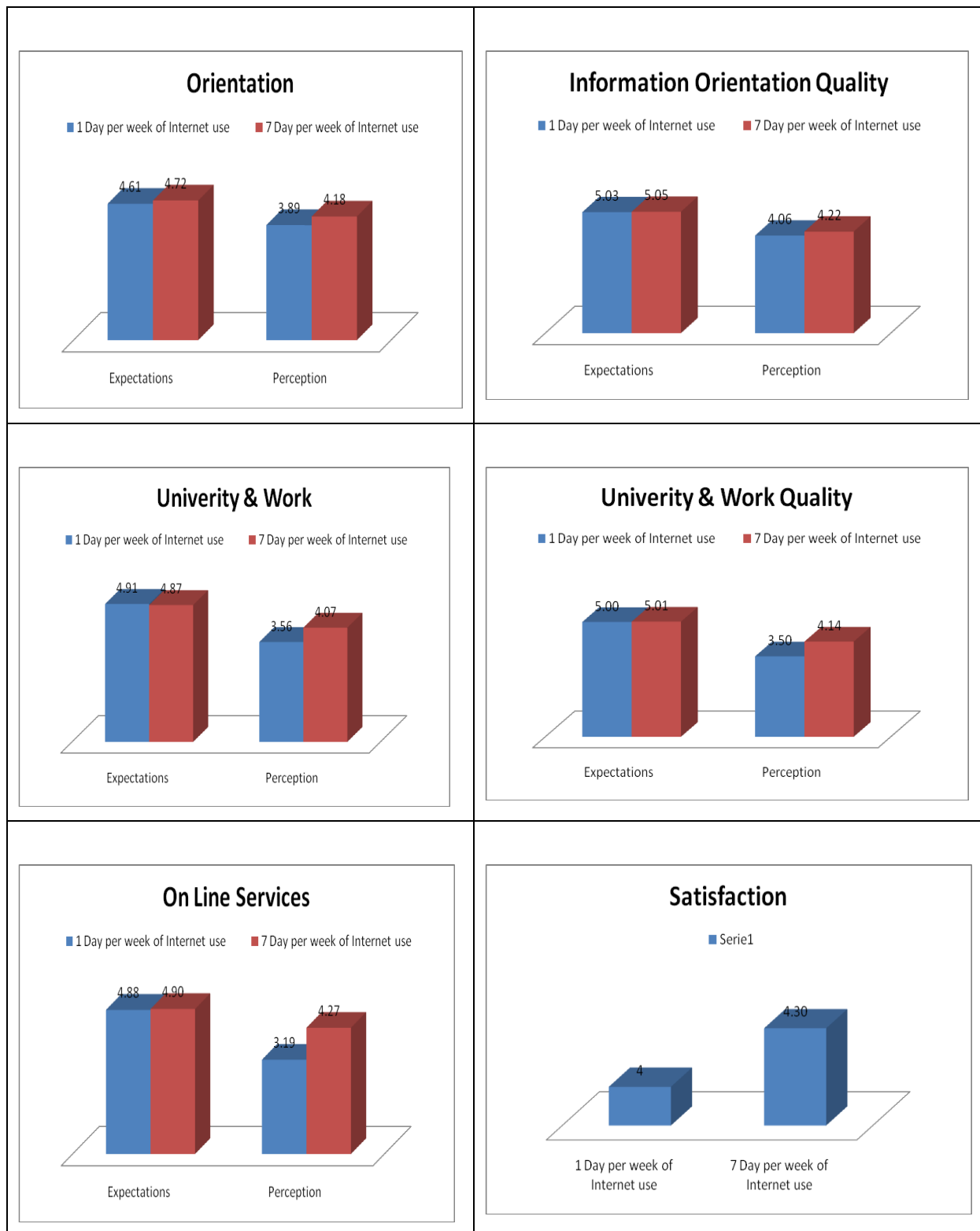
Looking at the figures it appears clear that students in the last year of the full degree course have a worse perception of the quality of the web site, compared to the younger ones. Students in the next year of their course are more aware and have a better knowledge of the information available and the on line services they would like and which are not provided by the web site. This greater knowledge may come from interaction with students from other faculties or to increased experience due to exposure to the faculty, a newly enrolled student still hasn't acquired this. This feel is confirmed by the next graphic above ('satisfaction') where it is clear that students actually enrolled in the full degree course are, in general, less satisfied than students of the three year degree and their customer satisfaction decreases in passing from the first to the second year of the full degree course. In this scenario, it is important to point out that the 'importance of information' graphic shows students enrolled in the first year of the full degree course have a very high perception of the web site quality; expectations for this variable are bypassed by perceptions. 15% of students, in this case, come

from three year degrees in other faculties and so have expectations based on other faculty web site experiences which seem very positive for the faculty web site we investigated (in the second year only 4% of students come from other faculties).

The second cross elaboration we did was based on the time students spend on Internet (days per week). In this case we considered the two extremes (1 day and 7 days), taking into account that people who spend more time on internet should be more aware of the web site quality and of the general services and information they can find and obtain from the web 2.0 (see figure 11).

Figure 11 Quality web site by time spent on internet (1 day or 7 days)





Looking at the figures it appears that the deviation between expected and perceived quality is higher for students who use internet once a week. Students who ‘surf’ the Internet every day have better experience of the average and general quality of the web sites and so have fewer expectations of the faculty one. On the contrary students who spend less time on the Internet

have higher expectations because they don't clearly and deeply understand the opportunities and limitations of this interactive tool. This seems confirmed by the 'satisfaction' graphic which considers all the variables investigated.

On the basis of the previous results we proceeded with the study of correlation, with the aim of identifying the interdependence between quality and satisfaction, examining the intensity of this connection (Tab. 2).

Table 2. The correlation between Customer Satisfaction variable and quality factors – Perception

<i>Correlation between Customer Satisfaction variable and quality factors - Perception (Obs=241)</i>					
	Satisfaction	Info/website	Educational	Orientation	U&W
Satisfaction	1				
Info/website	0.17	1			
Educational	0.47	0.22	1		
Orientation	0.43	0.32	0.70	1	
U&W	0.46	0.24	0.70	0.75	1

Source: our results

The analysis of this data shows the existence of interdependence between satisfaction and quality (clarity, completeness, ease of access to information and updating), the intensity of the link appears greater between customer satisfaction, teaching activities and the University/Work relationship, while general information on the site seems less. The link between teaching, orientation and the working world however is strong. The choice of courses and the basic content of different curriculum are in fact closely tied to the work experience that students will face in the future.

Table 3. Correlation between customer satisfaction and the variables pertinent to the communication instruments – perception

<i>Correlation between customer satisfaction and the variables pertinent to the communication instruments – perception (Obs=233)</i>						
	Satisfaction	Info/website	Educational	Orientation	U&W	Service
Satisfaction	1					
Info/websatie	0.43	1				
Educational	0.48	0.65	1			
Orientation	0.42	0.51	0.62	1		

U&W	0.53	0.59	0.59	0.68	1	
Service	0.49	0.50	0.55	0.60	0.55	1

Source: our results

Table 3 shows the results of the correlation between satisfaction and the quality variables of the content present in various areas of the site. Also in this case the intensity of the interdependence tie is greater for teaching and the University and the working world, followed by on line services; whilst the reciprocal information dependence is less.

Subsequently, regression was analyzed and the results show the existence of a very weak dependence link. The data does not allow us to state that customer satisfaction depends or can be explained by the variability or the quality of information (clarity, completeness, ease of access to information and updating) or the importance of content present in each area of the site. Examining these results it is possible to attribute the lack of dependence to the weakness of the site perceived by the students. The variance registered between the expectations and the perceptions is such that we can state that the quality of the site, the information and the content are not enough to fully satisfy student expectations, annulling the existence of a dependence link between the variables being studied. The completeness and the updating of information significantly affect customer satisfaction and the lack of perception of such qualitative characteristics must have some influence on the dependence ties of the variables, demonstrating the importance that these factors exert on the perception of the quality of services and in the object case of this research, on the perception of the quality of information and services supplied by a website.

The objective of the following phase of the research was the use of the web 2.0 instruments, like forum, YouTube channel and Facebook, new means of communication to facilitate the spread of information within a faculty website.

Table 4 shows the percentage of students with a knowledge of web 2.0 instruments present on the site. The results underline poor knowledge compared to their potential level, given the category of the users to whom they are directed, attributed to a low use of the site due to the poor quality perceived by the students and to not very incisive publicity of this means of communication.

Table 4. Knowledge of web 2.0

	YouTube	Facebook	Forum
Yes	59%	66%	62%
No	41%	34%	38%

Source: our results

Of those with a knowledge of the Facebook group, 72% were members and the remaining 28% were not; among the reasons given, 50% of those interviewed declared they were not registered on Facebook. Only 41% of the students are enrolled in forum and such a low level indicates low student interest in actively participating in the conversations and an equally low perception of the use of the instrument.

The quality of information present on the Facebook page is perceived as better than that of forum, which would further explain the low level of registrations. Nevertheless, the data obtained is not particularly satisfying, given that the average of the values falls between a maximum of 4.36 (updated Facebook information) and a minimum of 3.39 (timely forum information) (Tab.5).

Table 5. Perceived quality of the information present on Facebook and Forum

<i>Scale of measurement 1 low 6 high</i>		
	Facebook	Forum
	Mean	
Useful	4.16	3.56
Reliable	4.22	3.48
Been updated	4.36	3.57
Full	3.96	3.56
Timely	4.08	3.39
Interesting	4.08	3.77

Source: our results

The study of the correlation between satisfaction of the instruments of web 2.0 and the relative factors of quality show that there is an intense interdependence link as we can see from tables 6, 7 and 8.

Table 6. Correlation between Customer Satisfaction variable and quality factors - Facebook

<i>Correlation between Customer Satisfaction variable and quality factors - Facebook (Obs=143)</i>			
	Satisfaction	Quality	Utility
Satisfaction	1		
Quality	0.71	1	
Utility	0.64	0.64	1

Source: our results, Stata9

Table 7. Correlation between Customer Satisfaction variable and quality factors - Forum

<i>Correlation between Customer Satisfaction variable and the quality factors - Forum (Obs=143)</i>			
	Satisfaction	Quality	Utility
Satisfaction	1		
Quality	0.71	1	
Utility	0.44	0.49	1

Source: our results, Stata9

Tab.8 Correlation between Customer Satisfaction variable and quality factors – YouTube channel

<i>Correlation between Customer Satisfaction variable and the quality factors – YouTube channel (Obs=144)</i>		
	Satisfaction	Utility
Satisfaction	1	
Utility	0.30	1

Source: our results, Stata9

The study of regression shows the existence of a dependence link between customer satisfaction and the quality of the communication instruments under study, as is shown in table 9, 10 and 11. The value of the *P-value* in the three models means we can refute the hypothesis HO and can accept the alternative hypothesis HI and thus admit the existence of a predicting link between quality and satisfaction. In particular 56% and 50% of the Customer Satisfaction variable regarding respectively the pages of Facebook and forum, is explained by the variability of the quality and the utility of the information, while only 8% of the satisfaction of the YouTube channel is explained by the utility variable. Nevertheless, the *Ajd R-squared* is an index which measures the goodness of the model in its entirety unlike the *P-*

value and since this assumes a value of 0 in the regression model, a dependence link between the variables exists even for YouTube.

Table 9. Regression - Facebook

<i>Dependent variable Customer Satisfaction – Facebook</i>			
	Coef.	t	P> t
<i>Cost.</i>	0.44	1.58	0.115
Quality	0.59	7.08	0.000
Utility	0.30	4.33	0.000
Obs=143	Adj R-squared= 0.5623		F=92.23

Source: our results, Stata9

Table 10. Regression - Forum

<i>Dependent variable Customer Satisfaction – Forum</i>			
	Coef.	t	P> t
<i>Cost</i>	0.11	0.32	0.751
Quality	0.80	8.47	0.000
Utility	0.12	1.52	0.132
Obs=133	Adj R-squared= 0.5015		F=57.31

Source: our results, Stata9

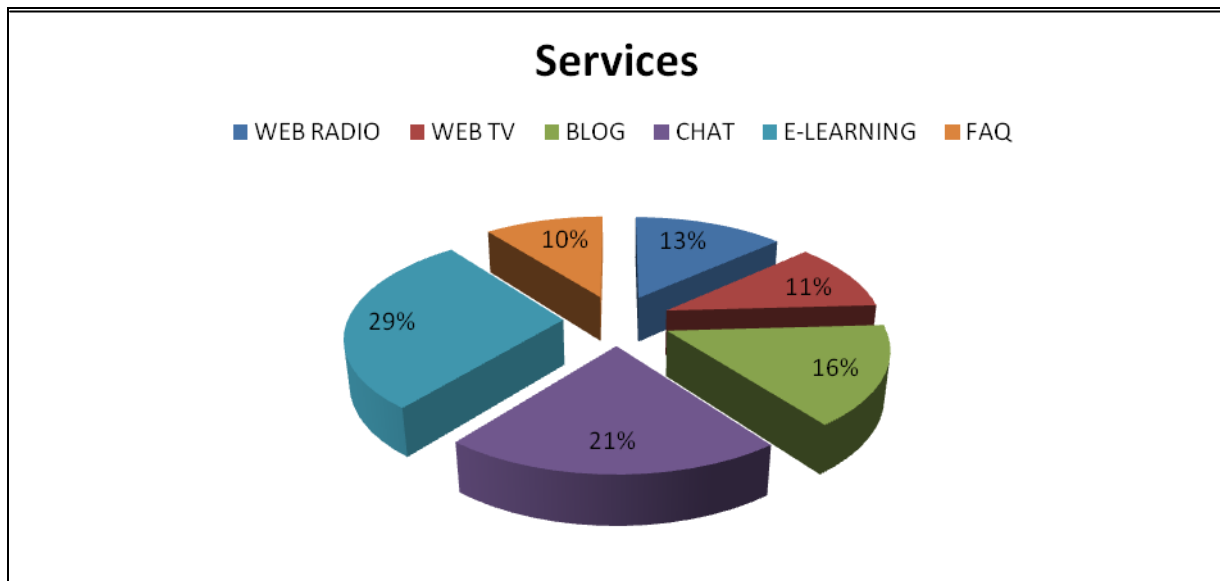
Table 11. Regression – YouTube

<i>Dependent variable Customer Satisfaction – YouTube channel</i>			
	Coef.	t	P> t
<i>Cost.</i>	2.84	14.32	0.000
Utility	0.16	3.81	0.000
Obs=144	Adj R-squared= 0.0865		F=14.55

Source: our results, Stata9

Finally the students were asked what type of service they would like to have available from the faculty. Figure 12 clearly shows that the most requested service is e-learning, followed by chat and blog, confirmation of student desire to use these interactive contact instruments to constantly have updated information and content which gives them better support in the learning process.

Figure 12. Services



Source: our results

5. Discussion

This research has demonstrated the importance of quality (clarity, completeness, ease of access to information and updating) and information content for a positive perception of the service. Comparing expectations and perceptions, the student need to access information they deem important emerged and above all their attention is focused on its quality, especially clarity and constant updating. Demands which don't always seem to be satisfied by the website, certainly a more static and not as interactive instrument as the young require more and more. The validity of the results obtained from the simple average and the cross elaborations which also consider the experience of students 'surfing' on the faculty web site in terms of permanence in the course and time spent on the internet, has also been confirmed through the use of more complex statistics like correlation and regression. The intensity of the interdependence link between satisfaction and quality of communication instruments is weak and the dependence tie is almost nonexistent. Customer satisfaction does not seem to be explained by the quality of the information variable and the main cause lies in the perceived poor capacity of the web site to satisfy student expectations, which encourages the students to use the site only to access certain significantly important information (like exams, courses.....). Students do not consider the web site as a communication instrument able to supply further and better quality information from that available at the front office. Therefore the results would seem to show that the website could be a valid and powerful communication

instrument but it needs to be constantly updated and maintained in every minute detail, improving quality, so that users can easily access all the information they need for their course of studies. A further reason which makes it necessary for the instrument to be well perceived is the type of user to whom it is destined, we are in fact dealing with people of a young age who are used to accessing Internet for all types of information and thus with a rich knowledge base which makes them very critical of the website and any other type of instrument used to spread information. Even though the cross elaborations show that the students' experience on the one hand gives a negative perception of the quality of the web site (if experience is measured in terms of permanence in the faculty) and on the other hand positively, lowering the expectations students have about the faculty web site (if the experience is considered as the general knowledge of internet and the average level of web site quality experienced due to more days 'surfing' during the week). Moreover the limited use and satisfaction experienced through the website can be likened to the 'interactivity' variable studied by other scholars (Ba and Johansson, 2008). In fact, perhaps students would like direct interaction with the faculty more than they openly express and are dissatisfied with the website because this service delivery system doesn't match their expectations, not only because of some website architectural and/or design choices. This seems particularly true in small faculties like the one we studied, where students expect to be in direct touch with the faculty and all its members and find it easier to acquire the information personally, unless they require the most recent updates. In this case the internet plays a major role, because the acquisition of the information is immediate and only in this case does the website appear to satisfy student requests.

Limited use of the site also leads to student lack of knowledge of the instruments of web 2.0 like YouTube, Facebook and forum. The data shows that the percentage of students with a knowledge of such instruments is only a little above 50%, an unsatisfactory value if you consider the type of user who uses this site, young people between 19 and 25 of whom 47% state they use Internet seven days a week. Nevertheless the study of regression has shown the existence of a dependence link between satisfaction and the quality of information supplied through these new means of communication whose intensity has been confirmed by the correlation. This leads us to state that these new means of communication are perceived by the users as instruments able to satisfy their expectations even if the quality of the information is not particularly good. This demonstrates that only the students knowledge of the existence of such means of communication is able to increase customer satisfaction subconsciously. It is

therefore important to develop these instruments, improving the quality of services offered in terms of clarity, updating, completeness of information and to spread greater awareness among students.

6. Conclusions

This paper studies the relationship between on line communication tools and contents and the service quality perceived by students at a faculty level. It highlights the fact that Faculties and not only Universities need to consider how to better manage the opportunities on line communication gives, to enhance student perception of the quality of the service, carefully considering its potential threats. Especially considering the student-faculty interaction scenario, on line communication can be both a powerful instrument to bridge the gap between student and faculties and the basis for reshaping this relationship in a more interactive way. The analysis of the sole faculty website shows in an indirect way that, especially in small contexts like the one in which the study has been carried out, desired personal contact with faculties (in this study at an institutional level and not considering one-to-one interactions between students and teachers) is high and negatively affects the satisfaction experienced on the website. Although just the knowledge of the availability of some other more interactive tools like Facebook, forum or the YouTube channel impacts on the perceived quality of the service positively. It seems clear students link the quality of on line communication to their perception of the quality of service, even if they require ever more interactive tools to continuously keep in touch with their faculty and the use of these tools clearly demonstrates the faculty willingness to interact with them (the main reason why students don't actually interact with the faculty). Moreover frequency and content of student-faculty interactions are important in determining student loyalty and outcome and so should be carefully considered by faculty members at all levels.

However, it must be remembered that on line communication is only one part, even if an increasingly important one, of the whole communication mix making a unique and strategic system for success necessary.

7. Limitations

This study can be considered as a 'first exploratory trial', because this subject has not been found in previous literature and the theoretical basis comes from different streams of research like service management and higher education. For this reason there are still some gaps in the

theoretical framework which has been only partially validated thanks to our research model. Moreover the study has been conducted only in one faculty which is quite small compared with the average Italian faculty and does not consider the impact of subjects studied in this faculty (eg. Engineering, information technology, etc..). Finally it is important to consider that the tools used by this faculty have limited this analysis.

8. Further research

Some further steps of this study are necessary to better validate our results. It would be interesting to compare these findings with those of other different sized Economics faculties, but also compare these results with other types of faculties of the same size, investigating whether subjects studied are relevant in the relationship between on line communication and perceived quality of service. Obviously also a comparison with faculties in other countries, especially the U.S.A. could be interesting, given the great number of studies on student-faculty interactions which have been done in that country. Moreover it would be interesting to complete our research model considering the impact of on line communication on student outcomes, which has not been considered at all in this study, but appears to be really relevant for faculties to be known.

Another subject to investigate could be the impact of a single attribute of the web site upon student perception of quality and the impact different sets of attributes could have on it using the Kano model and compare these results with those found relevant for business customers (Zhao and Dholakia, 2009).

9. Managerial implications

Faculty-student interactions have long been studied, but new digital technology requires further studies. Faculty managers should carefully consider issues related to on line communication and make sure they carefully choose the best architectural and design features to use these tools to foster and increase student loyalty, satisfaction and outcome. In particular it seems relevant to consider that students' perception of the quality of on line service changes overtime and should be 'followed' or guided by the institution they belong to, posing an important managerial challenge. In fact 'as customers gain experience, their expectations change. It implies that differentiated web site designs need to be offered to accommodate the differences in user experience. It also implies continuous tracking of the relationship between attribute interactivity and customer satisfaction since the category changes with both time and

user experience' (Zhao and Dholakia, 2009). This, as we found is also true in student contexts. Even if in our study we also consider that the time spent on the internet has an inverse effect on the perception of the quality of the web site, which suggests students have knowledge of the average quality found on the internet, informing them what the real opportunities and limitations of this media are. Thus faculty managers should take into account these issues in designing web sites and choosing the interactive level coherent with their audience in order to increase service quality perception and overall student satisfaction. Moreover on line communication features and the level of interactivity included in them, together with other communication tools, play a role especially in the Italian panorama in which more and more faculties must match strict requirements and perform well in terms of services delivered and number of students enrolled and graduated. So, even if on line tools and content, especially the more interactive ones, are more and more required by students to get in touch with the University and the faculty, it is important to remember that not all communication can be made through this new media (Joly, 2007; Aquilani and Lovari, 2010). So faculty managers must study the right communication mix and change it over time 'following' student expectations. To implement the right communication strategy to improve student satisfaction, important especially prepared and continuously updated human resources are necessary. Information, tools and features must be managed and continuously renewed making on line communication a real strength in building and maintaining a high student perception of the service in terms of quality, interactivity and immediate daily information increase. Nonetheless it seems important to use these tools and manage them well to bridge the gap with students and better support them throughout their course, not forgetting that students require attention and support not only in a mediated way, but personally, making it clear that the faculty wants direct interaction with them.

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