Relationship between E-Learning Quality and Feedback about Students' Satisfaction

Veneta Aleksieva[1]

Abstract – **This article compares the influence of the service quality on satisfaction of the students, who is participated in E-learning. Essential experiences include opportunities to receive regular feedback about progress and satisfaction, but the goal in this research is to analyze only the feedback about students' satisfaction. I propose that students' feedback is an often-overlooked factor in explaining the relationship between e-Learning quality and students` satisfaction. This article presents how the valuable student's feedback improves it.**

Keywords – **e-learning, feedback process, students' satisfaction**

I. INTRODUCTION

The quality of student' feedback is a critical importance in distance learning. Students studying such courses are geographically far removed from tutors, and limited contact opportunities necessitate a sharp and accurate focus upon aspects of study which link theory, research, practice and written assessment closely together. An understanding of quality of feedback begins with an appreciation of the role of distance learning course tutors and the education role of instructors in the real labs. Quality also relies upon a close evaluation of support students as courses are planned, launched and then monitored through course boards or their equivalent. Essential experiences include opportunities to receive regular feedback about progress. This includes support and guidance that helps students develop a growing awareness of them as learners, and provides opportunities for them to reflect and act upon their strengths and development needs. Different approaches have been proposed to add more educational value to e-Learning, for example many e-Learning Programs emphasize the "e" side, focusing on the learning management system used and searched for new tools to improve distance learning [1], but I think, that these studies are not concerning on the new models for distant learning, which is based on the expectation on students. When the feedback is properly created, then filled from every student and finally analyzed from the instructor/ teacher, which work with them in the real lab, where they were in practice, it will improve this e-Learning service and its quality, and students knowledge and motivation grow up. This article compares the influence of service quality to students' satisfaction in the Technical University of Varna, which is participated in E-learning program in the Cisco Networking Academy from 2006 to 2008 year [3]. It is considered the moderating effect

[1]Veneta P. Aleksieva, Technical University, st."Studentska"1, 9000 Varna, Bulgaria, E-mail: ven7066@abv.bg

of systematic students' feedback and complaint processes.

Essential experiences include opportunities to receive regular feedback about progress and satisfaction [2]. The authors explained that marks and grading do not help students move on in their learning. However, the research has revealed that good-quality feedback/comments result in significant improvement. Good-quality feedback should recognize what has been done well, and provide information on what students need to do to improve. Feedback should always relate to the learning intention and should bridge the gap between present performance and desired goal. Instructors/Teachers need to give their students constructive feedback about the particular qualities of their work, with advice on what they need to improve. To be effective, feedback should cause thinking to take place. It should be focused on:

- what has been done well
- what needs to be improved
- what follow-up work is identified to bridge the gap.

However, it is important, but the goal in this research is to analyze only the feedback about students satisfaction. The students' feedback is an often-overlooked factor in explaining the relationship between e-Learning quality and students' satisfaction. This article presents how the valuable student's feedback improves the service design and delivery.

II. REQUIREMENTS

This research is made on specific e-Learning education - The Cisco CCNA® Exploration curriculum, which provides a comprehensive overview of networking; from fundamentals to advanced applications and services. It is based on a top-down approach to networking that is popular in many colleges and universities. This course emphasizes theoretical concepts and practical application, while providing opportunities for students to gain the skills and hands-on experience needed to design, install, operate, and maintain networks. The curriculum is presented in English, not in local language.[4]

However, this education demands practical skills, which is acquired in real lab from an instructor. In the e-Learning, which is applied in areas with a vital necessity of many practical skills /For example: medicine, military, flying, diving, networking etc. /, it is obligatory to be applied mixed education - with e-Learning theory and on-line tests and with traditional learning in a class room with an instructor about practical skills. The specific on this mixed Learning unites a lot of advantages on traditional education and distance e-learning – for example the accent stays on cognitive learning, namely knowledge assimilation by information adoption and revision, but also controlling and directing acquisition of habits and skills. In contrast to entirely e-learning, in mixed learning are an element of competition with other students and

continuous contact with them, and the instructor keeps a close contact and support. The students' feedback about their view points concerning the strong and weak features of the system and communication is very important to flexibly adoption of the content and the change of pedagogical style of the instructor, which works with them in real labs. In this way it may be analyzed and rejected the omission in strategy of content's presenting in the relationship with target group.

My research aims are presented below:

- To follow the reasons for falling off of participants.
- To follow the development of personal motivation of every participant in course progress – It is controller for maximum participant's motivation and it gives an answer about their needs and demands.
- To direct to decrease the cognitive students' dissonance and increase the study motivation.
- To focus on the student as social person. S/he has to be needs to be a member in the group, to work together with people, which set theirselves the identical task and aims.

III. ANALYSIS AND SOLUTIONS

This research is based on the opinion of students' satisfaction in the Technical University of Varna, Bulgaria which is participated in E-learning program in the Local Cisco Networking Academy from 2006 to 2008 year [3]. They have learned all four modules on Cisco CCNA® Exploration curriculum. Two hundred and forty two students in eight groups have started this program in this period, but until now only one hundred and fifty eight have completely finished all the four modules. It is presented on Figure 1. Seventeen per cents from this people are women. Every student has filled the feedback about satisfaction four times – when s/he finished the current module. It gives six hundred and forty three tables with students' feedbacks. It gives the opportunity to grow up reliability on these results, because it eliminates the influence of different time of filling forms, unusual circumstances in this moment of filling, or the instructor exercise an influence on students' opinion. The Figure 1 shows the falling off of participants from each group. In this moment from this target group is 54%. The reasons for this large number of falling off are different:

- The participant has an insufficient personal level of English about assimilation of the course information
- The participant has a shortage information about this course in advance
- The participant has systematical omissions
- The participant delays to assimilate skills and knowledge in comparison with the middle level of the group
- The participant has a subjective discomfort caused by male, age, personal interests etc.
- The participant has a financial problem.

The opportunities to receive regular feedback about progress and satisfaction give students' opinion, which is presented in Table I. It can be seen, that 10% from the students are in some measure dissatisfied /or neutral/ from this course as a whole, 16% - from on-line curriculum and access to equipment, 17% - from labs and assessments and only 9%

from classroom instructions. These students didn't continue their education in next level of this course.
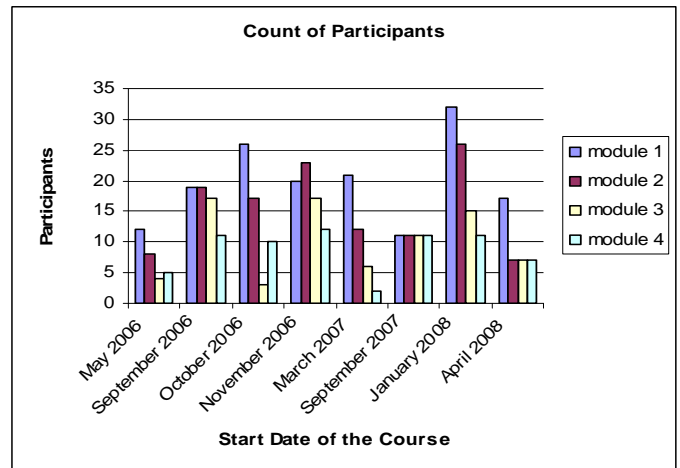

Fig. 1 Participants in Cisco CCNA® Exploration in Local Cisco Networking Academy Technical University Varna – Computer Science Department from 2006 to 2008 year

The reasons are two:
- The participant has a shortage or inaccurately information about this course in advance and their expectation are very dissatisfied and ill-affected to this course.
- The participant has an insufficient personal level of English about assimilation of the course information. They have a dissonance between the right idea of their abilities and course demands.

In the other hand, 90% from the students are satisfied from this learning, 83% like on-line materials and think that access to equipment is enough to normal work, 84% like labs and on-line assessments, 91% like their Instructor. The highest percent is about Classroom instructions, because the students are in their life accustomed with the forms of traditional education. These classroom instructions are an element from mixed learning, which are closer to the traditional education and the Instructor gives explanations in local language, not in English. This close contact gives the students more confidence in their skills and increases the study motivation, because the instructor gives the answers about their needs and demands and helps them to overcome their problems in this education.

In spite of all this isn't enough to compensate dissatisfaction from on-line course content. It is very important to analyze which are the strong and weak features of this content to be possible to overcome in the near future. Here the view point is focused on the feeling and sensation on students again. This students' satisfaction from course materials are presented in Table II. The questions are divided in eight main groups – each of them is about one component of course content. The last two questions are about students' further goals and their recommendations about this course to other people. It makes the impression that around 4% of students prefer not to answer and to check rating quality "Don't know/not applicable". In the other hand from 43% to 46% are agree, that on-line course materials help them to learn and from 37% to 46% are strongly agree with this.

TABLE I
STUDENTS' SATISFACTION IN ALL

Satisfaction:	Rating					Median
	(1) Very Dissatisfied	(2) Dissatisfied	(3) Neutral	(4) Satisfied	(5) Very Satisfied	
This course as a whole:	1%	1%	8%	53%	37%	4,235
On-line Curriculum Materials:	0%	5%	11%	46%	37%	4,152
Labs:	0%	2%	15%	50%	34%	4,153
Access to Equipment / Software:	0%	2%	14%	48%	35%	4,156
Classroom Instruction:	0%	1%	8%	36%	55%	4,431
Assessments (quizzes, chapter exams, and the final exam):	0%	3%	14%	48%	36%	4,159

TABLE II
STUDENTS' SATISFACTION ABOUT COURSE CONTENT

Course Content:	Rating						Median
	(1) Strongly Disagree	(2) Disagree	(3) Neither Agree Nor Disagree	(4) Agree	(5) Strongly Agree	Don't Know / Not Applicable	
The hands-on lab activities helped me to achieve the stated course objectives.	1%	1%	10%	46%	39%	2%	4,237
Simulator activities helped me learn.	0%	2%	11%	46%	37%	4%	4,222
Flash-based interactive activities helped me learn.	0%	2%	15%	43%	35%	4%	4,161
The online chapter quizzes helped to prepare me for the chapter exams.	1%	1%	11%	44%	38%	4%	4,218
The chapter exam scores accurately reflected my understanding of the curriculum.	0%	1%	10%	45%	38%	5%	4,262
Having access to equipment in the classroom helped me learn.	0%	1%	9%	45%	40%	4%	4,277
The course curriculum was technically accurate.	0%	1%	8%	45%	43%	3%	4,343
Overall, the online course materials were of high quality.	0%	2%	7%	43%	46%	3%	4,361
The Cisco Networking Academy Program furthered my goals.	1%	2%	9%	61%	27%	0%	4,114
I would recommend the Cisco Networking Academy Program to others.	0%	2%	8%	52%	38%	0%	4,257

Actually, the median assessment about students' satisfaction about this course content is between "Agree" and "Strongly agree" and about course in all is between "Satisfied" and "Strongly satisfied". This research gives the view point about less strong components of this education.

This course has started before 10 years in Bulgaria only with on-line curriculum and chapter exams and quizzes. During these years the course has been developing with new hands-on labs, Flash-based interactive activities and Simulator activities. Despite of this, now the students /85%/ prefer to work in the classroom and think that the hands-on lab activities help them to achieve the stated course objectives. The same percent is about these students, who think, that is very important to have access to equipment in the classroom. Exactly 83% of the students think, that simulators /as Packet Tracer/ help them to learn and to develop their skills. But only 78% think that flash-based interactive activities help them to learn. This shows that may be improve the course flash-based interactive activities or create a new interactive activities, because students have a little different view about their benefits. Exactly 89% of the students think that on-line

materials as all have a high quality, but 2% of the participants are dissatisfied from them.

Very important question about the quality of this course is the last one: "Would you recommend the Cisco Networking Academy Program to others?", because its answers give indirectly a view point about satisfaction as all. It is shown, that 38% are very satisfied from this course and 52% will recommend it, but 8% are indifferent and 2% is dissatisfied from the Cisco Networking Academy Program. The reasons are again the same, namely:

- The participant has a shortage or inaccurately information about this course in advance and their expectation are not covered from this course.
- The participant has an insufficient personal level of English about assimilation of the course information. This dissonance between the right idea of personal abilities and course demands make this part of students indifferent to this course. They in some case finished the whole course, but didn't recommend it to other people, because they sensed that their opinion isn't exactly competent.
- The participants have a different motivation about this course and they work with different enthusiasm in class.

However, the median assessment about students' satisfaction about this course in all is between "Satisfied" and "Strongly satisfied", but it must be analyzed the personal student's motivation. It is shown in Table III. This research gives three main points.

First of all, participants' motivation to do well in this course shows that more than 76% from the students are very motivated, but 3% are slightly motivated. The reason is that 150 from the students were joined to this course obligatory as part of University education on subject Computer Network.

Next, the participants' level of enthusiasm about the content of this course is 71%, but for 4% of the people aren't interested.

Finally, the personal interest in this course is high about 76% and 4% again aren't interested.

TABLE III
STUDENTS' MOTIVATION, INTERESTS AND ENTHUSIASM IN THE COURSE

Attitudes Towards Course:	Rating					Median
	(1) Not At All Motivated	(2) Slightly Motivated	(3) Motivated	(4) Very Motivated	(5) Completely Motivated	
Please rate your motivation to do well in this course:	1%	2%	22%	44%	32%	4,049
Please indicate how enthusiastic you are about the content of this course and the things you're learning (or have learned):	0%	4%	25%	43%	28%	3,947
Please indicate your interest in this course:	0%	4%	20%	42%	33%	4,033

This Table III gives explanation about some reasons about students' dissatisfaction, but other reasons are in classroom. This is showed on Table IV, which presents students' satisfaction about classroom equipment and access to computers. When the instructor works in small group /12-13 people/, the motivation to do well in this course and satisfaction from access to equipment in labs are higher, then students opinion about the same qualities in large groups /20-32 people/. When the group is large, more than two people configure one router or switch, or this people who think faster create the configuration tasks and the other people don't have access to the equipment. They aren't confident in their knowledge and skills, because they haven't practiced. This is the main reason these students do not continue their education in next level of this course, that they are in some measure dissatisfied /or neutral/ from this course as a whole, from access to equipment, from the labs and the assessments and from the classroom instructions. The instructor in a large group doesn't work individually with every student and gives

tasks on whole group and check decision as a whole. This isn't helping to these students who have problems with their level of English knowledge. S/he don't recognize which participant has systematical omissions or delays to assimilate skills and knowledge in comparison with the middle level of the group. In this case s/he doesn't overcome the problems on this participant, which has a subjective discomfort caused by male, age, personal interests etc. It is logically to reach the conclusion that if every group is small, this number of dissatisfy students will decrease and satisfaction will grow up.

TABLE IV
STUDENTS' SATISFACTION ABOUT CLASSROOM EQUIPMENT

In your Classroom:	Rating			
	I don't have access to a computer in my classroom	I have to share my computer with more than one other person	I share my computer with one other person	I have my own computer to work on during class
Please rate how easy it is to use a computer in your classroom:	0%	7%	38%	55%
Please rate how easy it is to use equipment in your classroom:	1%	21%	47%	31%

IV. CONCLUSION

This research is made on specific e-Learning education, which has on-line components, but has traditional lab practice with instructor in a classroom. It gives the relationship between service quality of e-learning and students' satisfaction. In this paper is presented how to create and analyze tests about students' satisfaction, the possible reasons about student's dissatisfaction, and suggestions to overcome them. As future work, I plan to extend this work as focus on the role of instructor in real lab about students' satisfaction, and relationship between relevant students' goals and motivation to do well in this course.

REFERENCES

[1] D.Garrison, Anderson T.,(2003) E-learning in the 21st Century: A framework for Research and Practice. New York: Routledge/Falmer.
[2] Christopher A. Voss, Aleda V. Roth, A Tale of Two Countries' Conservatism, Service Quality, and Feedback on Customer Satisfaction Voss et al. Journal of Service Research.2004; 6: 212-230 , http://jsr.sagepub.com/cgi/reprint/6/3/212
[3] http://www.cisco.com/web/learning/netacad/index.html
[4] http://ciscoacademy.cs.tu-varna.bg/CCNAexplorationDS.pdf