Chapter 6
Survey & Results

6.1 Introduction to the surveys
The aim of this thesis is to develop a series of questionnaires to be used in courses. The questionnaires were a part of the teaching development and the teachers can choose the most suitable questionnaires to be used in their courses. Two kinds of surveys were created to be used in courses: a pre-course survey in the beginning of a course and a feedback survey at the end of a course. Surveys were also made about the use of the VLE and the students' learning styles. The VLE used in this thesis was Moodle.

The course and Moodle surveys were built with Form which is one of Moodle's tools to create questionnaires. The Form tool was selected because it was the clearest and easiest way to create the surveys. The questions used in the surveys were of choice and multiple choice types. The students had only one chance to answer the survey.

The VLE survey was to gather information about students' attitudes and opinions on Moodle and its use. Thereby the obtained information was used to improve the RGI-Moodle to be more student/study friendly. With the course surveys students' data, expectations and feedback about courses were gathered. A briefing of the surveys was put in the Moodle first page to inform students about the upcoming changes.

6.2 VLE surveys
The survey on Moodle's usability was constructed of two questionnaires. One in the beginning of fall term 2006 and the other in the end of the fall term 2006. The meaning was to find out how students felt Moodle's usability change during the fall term. The surveys were presented in the front page of RGI-Moodle so every student using the VLE could answer the questionnaire. A briefing about the questionnaires was send to several courses in the Moodle and that way students received an email about the existence of the questionnaire.
6.2.1 Pre-survey on VLE

The full survey that was made in the beginning of the fall term can be found from Appendix 1. There were altogether 15 questions about Moodle's usability and students' expectations based on the use of Moodle before.

Questions 1-3 were about students' prior use and experience and expectations on virtual learning environments. Students' use of the virtual environment was asked in Moodle-specific Questions 4-7. These questions were asked to find out students' attitudes and preconceptions about virtual learning environment and especially about Moodle.

Learning styles were asked in Questions 8-9. With the questionnaire students could find out their preferred learning style (visual, auditory, kinesthetic). The next questions were about how one's learning style fits the VLE. With these questions it was found that the general variation between the learning styles among students and how students felt compatibility between their learning style and VLE. Finding out the major preferred learning style the teacher could change his/her teaching to better suit the students' learning.

Question 10 was about where the students use a computer (and in that way also VLE). This was asked to find out if the place was important of how the usability of VLE was experienced. Questions 11-13 were about Moodle's features and activities and their usefulness. Question 14 about using anonym user login was asked to find out if some people would like to comment in conversations as an anonym user. In the end there was an open form for other comments and questions.

6.2.2 Feedback survey on VLE

The survey on Moodle was changed in the second questionnaire and only 9 questions were asked. This was because the desired information was different than in the beginning of the fall term. The questions concentrated more to Moodle's usability issues and its suitability to learning. The questionnaire can be found in Appendix 2.

The first three questions were about VLE's usability during the fall term. It was asked if the course pages were well organized and information was easily found. On the basis on the answers the usability of the VLE course pages can be improved. Question 4 was about needed guidance using VLE. Should there be many students who need guidance, it should be provided. With Question 5 about group working information was gathered if the existing group working methods in the VLE were good enough. Questions 6-8 were to
define the usefulness of the features (for example forums, exercises, and quizzes) and therefore their use could be either increased or decreased. Question 9 was the same as in the pre-survey about where the students mostly use computer.

6.2.3 Course surveys
The surveys about courses were carried out in two parts. First there was a survey before the course had started and then a survey after the course which acts as a feedback questionnaire.

Precourse survey
The pre-survey was made to obtain the basic information about students, their studying habits and expectations about the course. The questionnaire consisted of 16 questions in total where the first six questions considered general information about the students; gender, program and year of study, major and minors. The following ten questions were about the course itself. This survey can be found in Appendix 3.

The questions about learners' readiness for online learning, access and familiarity with the technology and individual learning style are key figures when considering learners' needs on a course. Based on the results of these kinds of questions actions to support students in their learning process can be made. [Online learning; Hughes, J. Supporting the online learner]

The first five questions were about students' general information which was interesting for teacher to know. With the information for example study program the teacher could focus the course's main ideas according to the majority of students. Question 6 was about students' Internet connection at home. This was interesting because there could be some difference between the answers of the students who have an Internet connection (and connection to VLE) at home and of those who have not.

Students' reasons for participating the course was asked in Question 7. With this question the basic motivation for entering the course was found out. Question 8 about prerequisite courses was asked to know if there was any need for rehearsal if the majority of the students hadn't studied them. The next two questions were about students' interest about the subject and their goals and expectations about the course. These aspects showed students' inner motivation towards the course. If there were a major lack of interest, the teacher should pay attention to motivate the students.
Question 11 was about the kind of information students prefer to know before the course starts. Alternatives were lecture and practice schedules, way of performing the course, persons in charge, course materials and other. The next question was if the students would like to know the course arrangements before the course. If the majority of students would prefer having some of the information the teacher should pay attention to that in the next course. Questions 13-15 were about learning style and VLE. In the end there was an open form for other comments and questions.

6.3 Feedback survey

The post-survey about the course was to obtain feedback from students. It consisted of 37 questions which were divided into six categories:

1. Learning (12 questions)
2. Course arrangement (4 questions)
3. Lectures (3 questions)
4. Exercises/ Exercise work/ Seminar (9 questions)
5. Evaluation/ feedback (2 questions)
6. Moodle (7 questions)

The questions about Moodle in the part six were concentrated in the use of Moodle in the particular course. The previous survey on Moodle was concentrated in Moodle as a whole, not to certain courses. The questions are found in Appendix 4.

The first 12 questions were about learning. It asked if students felt that they had learned what was meant to learn in the course, if the work load in the course was suitable compared to the credits and if the share of web based learning was suitable. With these questions the teacher can concentrate on developing the course in the way that it serves students better. Students' investment of energy and their attendance in the lectures and exercises was asked. These answers can be compared for example with the learning results. The following issues were asked: which were the reasons hindering students' learning during the course and why they didn't attend classes/exercises. This was asked to see if the reasons were something that the teacher could have an impact on and that in that way improve the course. The question about sufficiency of guidance was made to see if there was a need for more guidance in the course. Two questions about learning styles were also asked. The first was about students' learning style (visual, auditory, kinesthetic) and where
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a student based his/her answer (the test result from the given learning style survey, intuition about my learning styles or some other test). The second learning style question was about how well one's learning style fitted the course.

Questions 13-16 were about course arrangements. The general grade for the course, the course level of difficulty, the course forming a clear ensemble and the accessibility of the learning materials were asked. These questions were formed to measure the quality of the course. The next three questions were about lectures and their elucidation methods. The questions about exercises covered matters about overlapping between lectures and exercises and the general usefulness of them. In case of dissatisfaction about the previous subjects the teacher or exercise tutor can make changes to the lectures and exercises. Questions 29 and 30 were about course evaluation and the purpose was to see if it was suitable for the course and if the feedback was sufficient. On the basis of the answers the evaluation of the course could be improved. The last seven questions were about the VLE, basically the same questions as in the Moodle survey but they were about using VLE in the course in question.

6.4 Learning style survey

The aim of the learning style survey was to build a questionnaire which acts as a tool for teachers to define students' learning styles. By getting the information about the variety of the students' learning styles, the teacher can develop the course to fit different learning styles. By introducing the questionnaire to the students they get information about learning styles. The students become more aware of their learning style and can develop their own learning. Because the point was not to gather a large range of answers on learning styles but to test the created questionnaire on students, it was carried out only on two courses.

The learning style survey was carried out in spring 2008 on two courses. The first was a Physiology course (LTT-1010) which is an elementary course on Biomedical Engineering. There were students from many different study programs. The course is lectured in Finnish and the survey was made in the same language. The second course was Medical Device Regulations (LTT-1500) which is also lectured in Finnish. In the beginning of the survey there was a short introduction about learning styles and links to the learning styles tests. The survey is in Appendix 5.
The survey gives information about students' interest of learning styles and what learning methods they prefer to support their learning style. One aim of this survey was to study how students with different learning styles perceive existing studying methods. A list of alternative studying/learning methods was introduced to get opinions on which to use in the upcoming courses.

Two tests were introduced to the students. Kolb's learning style test (http://www.dlc.fi/%7Etienvertist/oppimistyylit.htm) and observation channel model test (http://www.dlc.fi/~tenivesti/miellejarjestelmat.htm). Both tests are in Finnish. These questionnaires were chosen because they are both easily accessible in the Internet and also because they are in Finnish. The questionnaire was created in Finnish because the majority of the students in the two courses were Finns. It is easier to understand and answer the questions when they are in one's own language.

This survey was built with Quiz module in Moodle. Because this survey was done a year after the first two surveys the RGI Moodle was no longer in use and the survey was carried out in TUT Moodle. The Quiz tool was named as an Exam activity in TUT Moodle.

The Quiz tool is very handy in making questionnaires. The order of the questions can be changed easily and questions once made could be used in multiple surveys/exams. The question types were: calculation, description, essay, compatible answers, fill in tasks, multiple choice, short answer, numeric, randomized compatible short answers and true/false. The ones used in this survey were multiple choice and essay. In multiple choice questions one could choose to have only one answer, the same function as 'Radio buttons' in Questionnaire and Form modules, or multiple answers which is the same function with 'Check boxes'.

6.5 Testing / validation of the model

For testing and validation of proposed model of e-learning, a detailed questionnaire had been conducted consisting of following questions of different categories.

For the e-Learning environment:

1. Did you ever hear about E-Learning systems? (Yes / No)
2. Does your college or university use E-Learning any kind of e-learning system or software? (Yes / No)
3. Does your college affiliated University support E-Learning? (Yes / No)

4. Are the programs offered by your college / university is NBA Accredited? (Yes / No)

5. Are the programs offered by your college / university is as per Washington Accord? (Yes / No)

6. Does your University is running any E-Learning courses? (Yes/No)

7. Do you think E-Learning based teaching and ICT based education is going to take over India in a big way? (Yes/No)

8. Do you think, it is possible to replace a conventional teacher offering classroom teaching fully with ICT based education tools? (Yes/No)

9. Did you ever attend a Video Conference lectures? (Yes/No)

10. Did you ever deliver a Video Conference based lectures? (Yes/No)

11. Does video conferences are conducted in your college or university on regular basis? (Yes/No)

12. Does your college or university organize any video conference during your service? (Yes/No)

13. Did you know about Webinar and ever attend a Webinar? (Yes/No)

14. Did you ever deliver a webinar based training lectures? (Yes/No)

15. Did you know about while board system and used white board system? (Yes/No)

16. Did you ever use simulations software and techniques in your teaching courses? (Yes/No)

17. Did you know about mind mapping tools and ever used any mind mapping tools? (Yes/No)

18. Did you ever create blog of your own? (Yes/No)

19. Did you ever see any ones’ blog? (Yes/No)

20. Did you ever comment any ones blog? (Yes/No)

21. Did you ever attend a podcast? (Yes/No)

22. Did you ever deliver a podcast? (Yes/No)

23. Do you maintain your lectures in online mode? (Yes/No)

24. Do you have your own website i.e. home page for uploading and downloading of notes and assignments for the students in online mode? (Yes/No)

25. Do you have your teaching courses hosted in your Institutes main domain / Intranet Website? (Yes/No)
26. Have you ever completed any course online or E-Learning manner? (Yes/No)
27. Do you think normal degrees and distance or E-learning based courses are same when it comes to their standards as compared to degree earned by learning in full time mode at colleges and universities? (Yes/No)
28. Do you know about M-Learning and used M-learning? (Yes/No)
29. Did you use power point slides or other presentation tools in your lectures? (Yes/No)
30. How many lectures of yours will be using PPTs or presentation material? (Please Tick)
   1  2  3  4  5  6  7  8  9  10
   10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
31. Do you accept that the students are serious in studies while they are in higher secondary studies as compared to Engineering or any other professional degree? (Yes/No)
32. Do you think that Junior faculty are using ICT based tools in their teaching compared to senior faculty? (Yes/No)
33. Do your students like presentations using PPTs and others? (Yes/No)
34. How much percentage of your faculty use PPTs or other presentation means?
   1  2  3  4  5  6  7  8  9  10
   10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
35. How much percentage of your colleagues uses E-Learning resources in their lectures?
   (Please Tick)
   1  2  3  4  5  6  7  8  9  10
   10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
36. How much percentage of your colleagues use Video Lectures in their classes. (Please Tick)
   1  2  3  4  5  6  7  8  9  10
   10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
37. Have you ever completed any online course offered by any university or colleges? (Yes / No)
38. Do you think that courses organized by government department using EDUSAT Technology can create same impact as per traditional courses organized through c-learning method. (Yes / No)
39. How many courses you have completed (attended) online?
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1  2  3  4  5  6  7  8  9  10
10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

40. For how many students you have recommended online E-Learning courses.
   1  2  3  4  5  6  7  8  9  10
   10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

41. Does your college/university conduct any workshop/conferences on E-Learning? (Yes / No)

42. Does your college conduct any seminars on E-Learning? (Yes / No)

43. Does your college conduct any national or international conferences on E-Learning? (Yes / No)

44. Did you attend any conference or workshop on E-Learning? (Yes / No)

45. How many conferences or workshops have conducted at your college related to E-Learning?

46. What is impending factor for you to develop your courses as E-Learning courses. (Choose one)
   • I don't know how to do
   • I need training
   • My college does not encourage
   • Students are not enthusiastic about such experiments
   • I don’t believe in E-Learning

47. How many conferences you have attended which are related to E-Learning? (Check appropriate column)

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48. Have you heard about virtual university? (Yes / No)

49. Do you see any great market in E-Learning based solutions? (Yes / No)

50. Do you think E-Learning allows students to listen to experts independent of their geographical location? (Yes / No)
51. Select the reason which makes you to recommend E-Learning to your students. (Check one or more)

- They can learn on their own any number of times
- They can practice with simulations
- Concepts can be explained more vividly

**Surveys to the teachers**: Questionnaire of Moodle for the Teachers

1. How many virtual courses have you made of a virtual learning environment (VLE)?
   a) 0
   b) 1-2
   c) 3-4
   d) more than 4

2. How would you describe your teaching skill level of a VLE? [Korhonen]
   a) Experienced teacher of VLE
   b) Self-educated
   c) Experimenter
   d) Novice

3. Moodle is a useful part of teaching.
   a) strongly agree
   b) mostly agree
   c) no opinion
   d) mostly disagree
   e) strongly disagree

4. Moodle is a good environment for interaction between students and teacher. (a-e)

5. Moodle is easy to use. (a-e)

6. Which is more time consuming traditional, contact teaching or teaching with learning environment?
   a) traditional contact teaching
b) teaching with learning environment

c) no opinion

Why?

a) Open form

7. Would you like to have more guidance in using the Moodle?

a) No

b) Yes. How? About which features?

8. Which activities have you added to the courses?

  g) Lesson
  h) Forums
  i) resources
  j) assignment
  k) calendar
  l) Quizzes
9. Which features did you find unnecessary?
a) Open form

10. What extra features would you add to Moodle?
a) Open form

**Questionnaire in the end of a course to teachers**

**General**

11. How much time did the following parts of teaching take in this course? Choose in numerical order, 1 being the most time consuming part.
   a) Preparing the course material
   b) Preparing the Moodle site for the course
   c) Updating the Moodle site
   d) Giving lectures
   e) Giving exercises

**Interaction skills**

12. Do you have training for teaching?
a) I have taken a degree in teaching
b) I have taken some courses of teaching
c) Self-educated
d) No training
e) Other (specify)

13. How much do you know about teaching/pedagogy?
   a) a lot
   b) some
   c) not much
   d) nothing

14. What is good about your interaction skills?
a) Open field

15. What would you like to improve in your interaction skills?
a) Open field

**Content of the course**

16. Did you have enough time to prepare the course material and lectures?
17. In your opinion, were you successful in presenting the main things of the course?

Learning guidance
18. Did you have enough time to guide the students?
19. Which methods did you use to guide the students (tutoring hours, after lessons, etc.)?

Presentation methods of the content of the course
20. Which methods of presenting the course material did you use (powerpoint-slides, transparencies)?
20. Was the method(s) the best and/or effective for this course?
21. How would you change the use of presentation methods in this course?

Moodle for Teachers
23. How many virtual courses have you made of a virtual learning environment before this course?
   a) 0
   b) 1-2
   c) 3-4
   d) more than 4
24. Which activities of the Moodle did you use to present the course material?
   a) Lesson
   b) Presentation
   c) Book
   d) Resource
25. Which features of the Moodle did you use to present the exercises/ exercise work/ seminar?
   a) Forum
   b) Questionnaire
   c) Assignment
   d) Choice
   e) Quiz
   f) Workshop
   g) Wiki
26. Did you use Moodle to do exercises/exams during and after the course (which)?
27. What kind of different activities would you have added to this course's Moodle environment besides the existing ones?

Learning evaluation

28. Did you use exams/quizzes (e.g. in the beginning or the end of a lesson) during the course?
29. How did the exams/quizzes affect the learning results of the students?
30. Which methods did you use to follow/control students' learning (exam/learning diary/seminar/work/etc.)?
31. Was the previous choice adequate for this course?
   o If not, why and how would you improve it next year?

Summary of the student’s feedback

Learning

1. I learned what it was meant to in this course.
   a) strongly agree
   b) mostly agree
   c) I don't know
   d) mostly disagree
   e) strongly disagree

2. The work amount of the course compared to the credits was...
   a) Too high.
   b) Suitable.
   c) Too low.

3. I invested energy in learning...
   a) Very much
   b) Normal
   c) Not much

4. My attendance to the lectures.
   a) 0-30%
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5. My attendance to the exercises.
   a) 0-30%
   b) 30-60%
   c) 60-100%

6. The share of web-based learning in this course was.
   a) Too high
   b) Suitable
   c) Too little

7. What hindered your learning the most in the course?
   a) the topic was too difficult
   b) the course material was poor or inadequate
   c) the quality of teaching was too low
   d) lack of time
   e) lack of interest
   f) disorganized instructions
   g) disorganized Moodle site
   h) too much work load in the course
   i) health reasons
   j) other (specify)

8. If you didn't attend to the classes/exercises, why?
   a) lack of time due to study or work schedule
   b) lack of time due to other reasons
   c) lack of interest
   d) too much work load
   e) health reasons
   f) I prefer independent studying
   g) other (specify)

9. I got enough guidance from the course personnel (a-e)

10. Which things remained unclear?
    a) open field
11. Choose from the following which are the best learning styles for you?
   a) Learning by listening (Auditve)
   b) Learning by seeing (Visual)
   c) Learning by experimenting and feeling (Kinesthetic)
12. How did your learning style fit into learning in this course?
   a) Very well
   b) Somewhat
   c) I don't know
   d) Not very well
   e) Not at all

Course arrangements
13. General grade for the course. 1-5
14. The course formed a clear ensemble. (a-e)
15. How would you evaluate courses level of difficulty?
   a) easy
   b) medium
   c) hard
16. Did you get the learning material (handouts, books, articles) without problems/on time?
   a) yes
   b) no (where were the problems?)

Lectures
17. General grade for teaching. (1-5)
18. Which of the elucidation methods (powerpoint slides, transparencies, etc.) were good and helpful in learning?
   a) Open field
19. What other elucidation methods would you have needed or changed? a) Open field
Exercises/ Exercise work/ Seminar
20. The exercises covered basically the same things as in the lectures. (a-e)
21. The lectures previous to the exercise gave me ability to answer the exercise questions. (a-e)
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22. Participating in the exercises supported my learning. (a-e)
If there was an exercise work in this course, please answer the following three questions:
23. Work instructions were clear and functional. (a-e)
24. The exercise work was very well suited to this course. (a-e)
25. The exercise work was useful and I learned a lot. (a-e)
If there was a seminar in this course, please answer the following question:
26. The seminar was useful and I learned a lot. (a-e)
27. What was good about the exercises/ exercise work/ seminar? a) Open field
28. What went wrong in the exercises/ exercise work/ seminar? a) Open field

Evaluation/feedback
29. The evaluation methods were suitable for this course. (a-e)
30. Was the feedback you got sufficient?
   a) Yes
   b) Somewhat
   c) No

Moodle for students
31. Which activities did you use in this course?
   a) forums
   b) assignment
   c) calendar
   d) quizzes
   e) chat
   f) other (specify)
32. Which activities did you find useful?
33. Which activities did you find irrelevant?
34. Did you find all the information what you wanted from the courses Moodle site?
   a) Yes
   b) No (what things you didn't find?)
35. Was the course's Moodle site clear and functional?
   a) Yes
b) No (where were the problems?)

36. Other comments about Moodle. a) Open form

37. Was this questionnaire clear and easy to fill?
   a) Yes
   b) no

**Pre-survey of VLE**

1. Have you used some other learning environments (e.g. WebCT, etc.) than Moodle before?
   a) Yes (specify which ones)
   b) No

2. What kind of image do you have about learning environments?
   a) they are helpful in learning
   b) they are not helpful in learning
   c) I have no image about learning environments
   d) other (specify)

3. What expectations do you have about using Moodle?
   a) to get the course material
   b) to participate in forum conversations
   c) make contact with teacher
   d) make contact with other students
   e) other (specify)

4. Moodle is very useful.
   a) strongly agree
   b) mostly agree
   c) no opinion
   d) mostly disagree
   e) strongly disagree

5. Moodle is easy to use.
   a) strongly agree - e) strongly disagree

6. The learning materials have been easy to use.
   a) strongly agree - e) strongly disagree
7. What different activities have you used?
   a) forums
   b) exercises
   c) calendar
   d) quizzes
   e) other (specify)
8. What is your best learning style?
   Test yourself with the following test:
   http://www.metamath.com/multiple/multiple_choice_questions.html
   a) Learning by listening (Auditory)
   b) Learning by seeing (Visual)
   c) Learning by experimenting and feeling (Kinesthetic)
9. How well has your learning style fit into learning in Moodle in past courses?
   a) Very well
   b) Somewhat
   c) I don't know
   d) Not very well
   e) Not at all
10. Where do you use Moodle the most?
    a) at school's computer
    b) at home computer
    c) at friend's home computer
    d) at some other public computer
    e) other (specify)
11. What extra features would you like to have added to Moodle?
    a) open field
12. Which features/activities have you found useful (why)?
    a) forums
    b) exercises
    c) calendar
    d) quizzes
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e) other (specify)

13. Which features/activities have you found irrelevant (why)?
   a) forums
   b) exercises
   c) calendar
   d) quizzes
   e) other (specify)

14. Would you like to use Anonym user (e.g. Teemu Teekkari) to login into Moodle to ask "stupid questions"?
   a) yes
   b) no opinion
   c) no

15. Other comments about Moodle open field
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Feedback survey of VLE

1. I felt Moodle was very useful in supporting learning.
   a) strongly agree
   b) mostly agree
   c) no opinion
   d) mostly disagree
   e) strongly disagree
2. I felt Moodle course pages were well-organized.
   a) strongly agree - e) strongly disagree
3. I found enough/easily information of the subject (lectures, exercises) that I was looking for.
   a) strongly agree - e) strongly disagree
4. I would have needed more guidance in using Moodle.
   a) strongly agree - e) strongly disagree
5. Moodle suited very well group working.
   a) strongly agree - e) strongly disagree
6. Which features did you find the most useful/important?
7. Which features did you find unnecessary?
8. What extra features would you add to Moodle?
9. Where do you use Moodle the most?
   a) at school's computer
   b) at work computer
   c) at home computer
   d) at friend's home computer
   e) at some other public computer
   f) other (specify)
Pre-course survey

General questions
1. Gender
   a) Male
   b) Female
2. What is your program of study?
   a) Architecture
   b) Automation Engineering
   c) Biotechnology
   d) Civil Engineering
   e) Communications and Electronics
   f) Electrical Engineering
   g) Environmental and Energy Technology
   h) Industrial Engineering and Management
   i) Information and Knowledge Management
   j) Information Technology
   k) Materials Engineering
   l) Mechanical Engineering
   m) Science and Engineering
   n) Fibre, Textile and Clothing Science
3. What is your year?
   a) 1st - g) nth
4. What is your major?
   a) Biomedical engineering
   b) Electronics
   c) Signal processing
   d) Software systems
   e) Biomaterials
   f) Other (specify)
   g) Not chosen yet
5. Which are your minors?
   a) Digital and computer systems
   b) Signal processing
   c) Software systems
d) Electronics  
e) Biomedical engineering  
f) Biomaterials  
g) Measurement and information technology  
h) Physics  
i) Power engineering  
j) Automation and control  
k) Power electronics  
l) Communication engineering  
m) Other (specify)  
n) Not chosen yet

6. Do you have computer with internet connection at home?

Questions about the course
7. I'm participating to this course because it is:
   c) compulsory  
   d) elective  
   e) interesting  
   f) recommended by a friend  
   g) easy credit units  
   h) other (specify)  

8. Have you studied prerequisite courses demanded? - List of the courses -
   i) Yes (all of them)  
   j) Yes (some of them)  
   k) No  
   l) There are no prerequisite courses

9. How much does this subject interest you?
   a) Very much  
   b) Somewhat  
   c) Neutral  
   d) Not very much  
   e) Not at all

10. What goals and expectations do you have for this course?
    a) to pass the course and get the credit units.  
    b) to understand the basic concepts of the course.  
    c) to learn profound things about the subject.
d) to be able to apply learned things into practice.

e) other (specify)

11. What information would you like to know about course arrangements before the course?

a) lecture and practice schedules.
b) way of performing the course.
c) persons in charge.
d) course materials.
e) other (specify)

12. How important it is to you to know the course arrangements well before the beginning of the course?

a) very important
b) important
c) no opinion
d) not so important
e) not important

13. What is your best learning style?

Test yourself with the following test:
http://www.metamath.com/multiple/multiple_choice_questions.html

d) Learning by listening (Auditory)
e) Learning by seeing (Visual)
f) Learning by experimenting and feeling (Kinesthetic)

14. Have you used Moodle learning environment before?

a) Yes
b) No (skip the last question)

15. How would you like to have the Moodle to be used in this course?

a) delivering the course material
b) using forums to discussions
c) using it to return exercises
d) other (specify)

Open form (comments)
**General Questionnaire on online learning course:**

**Q1** How much experience do you have using online learning resources?
- □ None
- □ Little
- □ Some
- □ Much

Comments ________________________________________________________________

**Q2** Are you comfortable learning new course material via the Web?
- □ Not at all
- □ Not very
- □ Quite
- □ Very

Comments ________________________________________________________________

**Q3** How much experience in SQL did you have before commencing the Online SQL Course?
- □ None
- □ Little
- □ Some
- □ Much

Comments ________________________________________________________________

**Q4** After completing the initial online questionnaire, approximately how many times did you rebuild the course?
- □ 1-2
- □ 3-4
- □ 5-6
- □ 6+

Comments ________________________________________________________________

**Q5** Were the objectives of the generated course(s) clear to you?
- □ Never
- □ Rarely
- □ Usually
- □ Always

Comments ________________________________________________________________

**Q6** Did the course(s) generated by the system reflect the answers you gave in the online course questionnaire?
- □ Never
- □ Rarely
- □ Usually
- □ Always

Comments ________________________________________________________________

**Q7** Did the course(s) generated by the system reflect the course(s) you wanted?
- □ Never
- □ Rarely
- □ Usually
- □ Always

Comments ________________________________________________________________
Q8 Upon completion of the online course did you feel you had completed the objectives?

□ Yes □ No  
Comments ______________________________

Q9 Please rate the following aspects of rebuilding the course for usefulness (1-5; 1 = not useful, 5 = very useful).

- Ability to modify the amount of content in the course
- Ability to adjust the scope (number of sections) of the course
- Availability of the Case Study in all courses
- Maintenance of familiar link structure and layout
- Availability of the Example Database for querying in all courses

Comments ______________________________

Q10 Were the courses generated easy to navigate?

□ Never □ Rarely □ Usually □ Always

Comments ______________________________

Q11 Did the course content of the generated course(s) appear disjoint?

□ Never □ Rarely □ Usually □ Always

Comments ______________________________

Q12 Would you have liked more control on the content included in the customized courses?

□ Never □ Rarely □ Usually □ Always

Comments ______________________________

Q13 Did the course sections contain the content you expected?

□ Never □ Rarely □ Usually □ Always

Comments ______________________________
Q14 Was the quantity of content on each page satisfactory?

□ Never □ Rarely □ Usually □ Always

Comments ____________________________________________________________

Q15 Would you have liked a greater level of control as to how the content was structured? (i.e. the ability to place content in difference sections)

□ Never □ Rarely □ Usually □ Always

Comments ____________________________________________________________

Q16 Would you have found the ability to modify the web interface beneficial? (i.e. placement of buttons, number and type of hyperlinks)

□ Never □ Rarely □ Usually □ Always

Comments ____________________________________________________________

Q17 Please rate the course sections on how effectively you felt they represented the subject matter (1-5; 1 = not at all, 5 = completely).

- Database Concepts
- Creating a Database
- Populating a Database
- Database Retrieval
- Database Applications

Comments ____________________________________________________________

Q18 Please rate the course features on how useful you found them (1-5; 1 = not useful, 5 = very useful).

- Query Example Database
- Example Project Solution
- Case Study

Comments ____________________________________________________________

Q19 Are there any additional features you would like to see in the course?

□ Yes □ No

Comments ____________________________________________________________

Q20 Did you experience any technical difficulties with the course?

□ Yes □ No

Comments ____________________________________________________________

Survey for decision makers (Management of the Higher Education Institutes)
Survey & Results

Questionnaire also designed and conducted for anyone involved in decision making relating to ICT and change in a higher education institution. The questionnaire consists of approx. 40 & more questions of different sections and needs on an average about 30 minutes to fill in the questionnaire.

When you are finished with the questionnaire and press "Submit" button on the screen and on successful submission, you will see your answers as submitted in our database.

Due to poor internet connections some times, many computers have a function that automatically breaks the internet connection when you stay on one web page for a longer time. So, please login again and refresh this web page when you are filling out the questionnaire.

**Personal Information**

- Please fill in the name of your institution:
- Indicate the city and country of your institution:
- What is your position within your institution?
- Central-level decision maker (Member of Academic board, Rector, Academician Director, Vice chancellor, Dean of faculty, Head of school (Principal) / Institute / Head of department , Support or advisor / consultant to decision maker authority or Other) Please specify:
- Please fill in the name of the faculty/department or unit in which you are working:

**Goal / Mission / Vision and general ICT aspects**

1. Indicate in your view how important the following aspects are in the mission (statement) of your institution: (on the scale of 1 to 10)

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Low (1-3)</th>
<th>Moderate (4-7)</th>
<th>High(8-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching 18-26 year old students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Providing continuing education (or &quot;lifelong learning&quot;) to persons in the workforce</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching international students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation in teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. In your view, to what extent do the following aspects contribute to good education in your institution?

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Low (1-3)</th>
<th>Moderate (4-7)</th>
<th>High (8-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face to face contact</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate use of ICT for teaching and learning support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individualization for different student characteristics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time and place independent learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication among students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedagogy related to group work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact with the instructor when needed by the students</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. In your opinion, what is the current balance in your institution between "face-to-face" and "via the Internet" with respect to administrative procedures for students?

<table>
<thead>
<tr>
<th>Balance</th>
<th>only face-to-face</th>
<th>balanced, both in use</th>
<th>only via the Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Survey & Results

4. To what extent do you consider your institution as being successful with regard to the overall use of ICT?

<table>
<thead>
<tr>
<th>Weak</th>
<th>Average</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What is your impression of the percentage of your institution's annual budget that is spent on ICT?

<table>
<thead>
<tr>
<th>&lt;1%</th>
<th>1-5%</th>
<th>5-10%</th>
<th>10-15%</th>
<th>&gt;15%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Policy and leadership processes

6. Which group of authorities has the primary formal responsibility for the ICT-related policy in your institution (including decisions on budget expenditures)?

- Central-level decision maker (Member of Academic board, Rector, Academician Director, Vice chancellor, Dean of faculty, Head of school (Principal) / Institute / Head of department, Support or advisor/consultant to decision maker authority or Other) Please specify:

7. Which of the following best describes the formally stated policy with respect to ICT in your institution?

- There is none
- Perhaps there is policy but I am not aware of it
- Bottom-up: faculty or department-level policies with no link to institutional-level decision-making
- Combined: institutional-wide policy serving as a framework for faculty-specific plans
- Top-down: institutional-wide policy to be implemented in all faculties
8. To what extent is each of the following an objective of ICT-related policy in your institution?

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Low (1-3)</th>
<th>Moderate (4-7)</th>
<th>High(8-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing the quality of teaching and learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing flexibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing cost-Effectiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generating institutional Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating more opportunities for continuing education (lifelong) learners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating more opportunities for international students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widening access to the traditional (18-24 year-old) student base</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing competitiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing the status and reputation of the institution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. Which of the following groups of actors do you consider of most importance with respect to the ongoing implementation of the ICT-related policy in your institution?

Central-level decision maker (Member of Academic board, Rector, Academician Director, Vice chancellor, Dean of faculty, Head of school (Principal) / Institute / Head of
department, Support or advisor / consultant to decision maker authority or Other) Please specify:

10. Which of the following policy instruments are used for the implementation of ICT-related policy in your institution? (indicate as many as are relevant)

- Financial instruments
- Regulation
- Information
- Organisational instruments

11. Which of the following aspects are problems confronting the implementation of ICT-related policy in your institution? (indicate as many as are relevant)

- Not enough financial resources
- Inadequate national regulations
- Not enough internal support
- Lack of skilled staff

12. In your view, how much leadership do the following groups of actors show in the process of developing and implementing ICT-related policy in your institution?

<table>
<thead>
<tr>
<th>Authority</th>
<th>low</th>
<th>Moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rector / president / executive board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deans of faculties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heads of school / institutes / departments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support centre for ICT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual professors or Instructors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Which one of the following is the most common communication mechanism for discussing ICT-related policy issues in your institution?

- Minimally active, ad hoc committee(s)
Survey & Results

- Minimally active, standing committee(s)
- Regularly active, ad hoc committee(s)
- Regularly active, standing committee(s)
- Very active, ad hoc committee(s)
- Very active standing committee(s)

14. Which of the following groups of actors are involved in the most common communication mechanism? (indicate as many as are relevant)

- Rector, (vice) president, executive board
- Dean of faculty
- Head of school / institute / department
- Support centre for ICT
- Individual professor or instructor
- Students

Student aspects

15. With regard to undergraduate (or initial degree) programmes in your institution, which of the following best describes the current amount of choice available to students?

- Programmes are fully planned, little or no individual choices for students once they choose a programme
- Programmes are fully planned, but some individual choices for students once they choose a programme
- Programmes are fully planned, but many choices for students once they choose a programme
- Programmes are flexible, students can choose from a range of combinations
- Programmes are highly flexible, students can more or less choose their own combinations

16. In your opinion, to what extent is your institution's current ICT-related policy affected by student demands in the following areas?

<table>
<thead>
<tr>
<th>Policy</th>
<th>Very little</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand for more/wider access to traditional campus-based education</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Survey & Results**

| Demand for continuing education (lifelong learning) |  |
| Demand from international students |  |
| Demand for more flexibility in locations of learning |  |
| Demand for more flexibility in times of learning events |  |
| Demand for more flexibility in pace of learning |  |

**Staff aspects**

17. In your view which of the following best describes the experience of instructors in your institution with respect to the use of ICT in their teaching?

- In general, a very low level of experience
- In general, a minimal level but with occasional pioneers
- In general, instructors make occasional experiments
- In general, instructors are regular users of standard applications
- In general, instructors are regular users of standard applications and also pioneers with new applications

18. How would you describe the climate for change among instructors in your institution when it comes to the use of ICT in teaching?

<table>
<thead>
<tr>
<th>Very negative</th>
<th>Neutral</th>
<th>Very positive</th>
</tr>
</thead>
</table>

19. To what extent does ICT play a role in the following aspects of your institution's personnel policy?
### Technology aspects

20. To what extent do the following technologies influence general teaching practice in your institution?

<table>
<thead>
<tr>
<th>Policy</th>
<th>Not at all</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT use in education counts towards promotion and tenure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT use in education is an integral part of regular staff assessments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT use in education is part of regular external quality assurance exercises</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT competencies are systematic criteria for selection and recruitment of new staff</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professionalization of staff in ICT competencies is mandatory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial incentives to individual staff are provided for development of ICT use in education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT use in education is mandatory</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Survey & Results

<table>
<thead>
<tr>
<th>Name of Technology</th>
<th>Very little</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireless solutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web-based course management systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning tools, such as network-accessible agendas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externally available courses or modules, accessible via the Web(Video) conferencing tools</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

21. Indicate in your view the extent to which the following aspects involve the use of ICT in your institution?

<table>
<thead>
<tr>
<th>Aspects</th>
<th>low</th>
<th>Moderate</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching 18-24 year-old students</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Providing continuing education (or &quot;lifelong learning&quot;) to persons in the workforce</td>
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<td></td>
</tr>
<tr>
<td>Teaching international students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation in teaching and learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internally funded research</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
22. In your opinion, to what extent has competition from each of the following entities changed compared to five years ago?

<table>
<thead>
<tr>
<th>entities</th>
<th>Strongly decreased</th>
<th>Stable</th>
<th>Strongly increased</th>
</tr>
</thead>
<tbody>
<tr>
<td>National higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. In your opinion, how much does competition from each of the following entities currently influence the ICT-related policy in your institution?

<table>
<thead>
<tr>
<th>entities</th>
<th>Not at all</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>National higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
24. In your opinion, to what extent does your institution cooperate with the following external partners with respect to ICT-related activities?

<table>
<thead>
<tr>
<th>External Partners</th>
<th>Not at all</th>
<th>Some</th>
<th>Intensively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other national higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National business and industry or other for-profit organizations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign business and industry or other for-profit organizations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

25. In ICT matters, which of the following do you consider to be the most successful form of cooperation for your institution?

- Bilateral cooperation with other national higher education institutions
- Bilateral cooperation with foreign higher education institutions
- Multilateral cooperation with other national higher education institutions (national consortium)
- Multilateral cooperation with other foreign higher education institutions (international consortium)
- Cooperation with national business and industry or for-profit organisations
- Cooperation with international business and industry or for-profit organisations

Why do you consider this as the most successful form of cooperation?

**Perceived impact of technology use**

<table>
<thead>
<tr>
<th>Impact</th>
<th>very unimportant</th>
<th>neutral</th>
<th>very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. How important in your view is the use of ICT for the strategic position of your institution?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
27. In your view, to what extent is the use of ICT important for the quality of education programmes and services in your institution?

<table>
<thead>
<tr>
<th>Impact</th>
<th>Very unimportant</th>
<th>neutral</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. In your view, to what extent is the use of ICT important for the quality of education programmes and services in your institution?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

28. In your view, the impact of ICT on the efficiency of teaching activities in your institution is...

<table>
<thead>
<tr>
<th>Impact</th>
<th>Very negative</th>
<th>neutral</th>
<th>Very positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>28. In your view, the impact of ICT on the efficiency of teaching activities in your institution is...?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Predictions for the year 2012**

29. In your view, to what extent will the following aspects involve the use of ICT in your institution in the year 2012?

<table>
<thead>
<tr>
<th>Aspects in Use of ICT</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching 18-24 year old students</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Providing continuing education (or &quot;lifelong learning&quot;) to persons in the workforce</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Innovation in teaching and learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internally funded research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externally funded research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction with business and industry</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

30. With regard to undergraduate (or initial degree) programmes in your institution, which of the following do you predict will best describe the amount of choice available to students in the year 2012?
- Survey & Result -

- Programmes are fully planned, little or no individual choices for students once they choose a programme
- Programmes are fully planned, but some individual choices for students once they choose a programme
- Programmes are fully planned, but many choices for students once they choose a programme

31. In your view, to what extent will your institution's ICT-related policy be affected by the following types of student demands in the year 2012?

<table>
<thead>
<tr>
<th>Demand</th>
<th>Very Little</th>
<th>Some</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand for more/wider access to traditional campus-based education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand for continuing education (lifelong learning)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand from international students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand for more flexibility in locations of learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand for more flexibility in times of learning events</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand for more flexibility in pace of learning</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

32. In your view, to what extent will each of the following be a typical learning setting in your institution in the year 2012?

<table>
<thead>
<tr>
<th>Learning Setting</th>
<th>Very unlikely</th>
<th>Some</th>
<th>Very likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-campus settings for course activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many variations in where and how students participate in courses, but campus-based settings remain the basis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many students are attending at a distance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students use the</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
33. In your opinion, which of the following policy instruments will be used for the implementation of ICT-related policy in your institution in the year 2012? (indicate as many as are relevant)

- Financial instruments
- Regulation Information
- Organizational instruments

34. Which of the following aspects do you predict will be problems confronting the implementation of ICT-related policy in your institution in the year 2012? (indicate as many as are relevant)

- Not enough financial resources
- Inadequate national regulations
- Not enough internal support
- Lack of skilled staff

35. In your opinion, to what extent will each of the following actors influence ICT-relate policy in your institution in the year 2012?

<table>
<thead>
<tr>
<th>ICT Relate Policy</th>
<th>Not at all</th>
<th>Some</th>
<th>Very Much</th>
</tr>
</thead>
<tbody>
<tr>
<td>National higher education Institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign higher Institutions education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign commercial providers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36. In your opinion to what extent will each of the following be a major objective in ICT-relate policy in your institution in the year 2012?

<table>
<thead>
<tr>
<th>Objective of ICT Relate Policy</th>
<th>None / low</th>
<th>Moderate</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing efficiency</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing the quality of teaching and learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Enhancing flexibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing cost-effectiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generating institutional income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating more opportunities for continuing education (lifelong) learners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating more opportunities for international students</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Widening access to the traditional (18-24 year-old) student base</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing competitiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhancing the status an reputation of the institution</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37. In your opinion, to what extent will the following forms of external cooperation influence the success of your institution in the area of ICT in the year 2012?

<table>
<thead>
<tr>
<th>Forms of External Cooperations</th>
<th>Not at all</th>
<th>Some</th>
<th>Intensively</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other national higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign higher education institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National business an industry or other for-profit organizations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign business an industry or other for-profit organizations</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6.6 Summary & Conclusion

Soul of the human society, which always looking for new tools and methods of education to adopt them to its system and to improve the learning process. One of those tools more outposts is the electronic learning.

Generally, Internet is new means that have extended and popularized in the years 90, in which it emphasizes eLearning like a very recent and important tool. Now many
educative centers (especially in the universities, great companies and organisms) foment eLearning like means of flexible education and at a distance.

The first definitions use the term for the learning based on computer (CBT: Computer Based Training) and characterizes by the technique (multimedia) and the used support (Web or CD-ROM). Nevertheless, now eLearning is conceived as the acquisition and use of knowledge in form of courses and objects for the learning distributed and obtained through electronic means.

eLearning is a concept that arose in the last decade of the century last, in the educative scope, like a new method for education, using didactic supports based on the new technologies, and that some are considered like an electronic version of education to distance.

Simply, we can consider eLearning in our Thesis like an umbrella that covers the learning almost at any time, anywhere, (asynchronous) in a computer, connected generally with a network.

At the moment, eLearning has become something fundamental at our time, especially for the universities, since with eLearning the education has a strategic importance in our society, especially for the universities in two slopes:

- Organization of the own University changing of traditional to virtual or Opened models
- Facilities in the process of learning of the student (pursuit, customized aid, adjustment to the schedule, etc.)

In the future the society will use eLearning of natural form, and will stop being something specific and separated of the traditional education. eLearning doesn’t wants to replace all the present system of learning, but to be a part of it.

In order to be successful, eLearning needs many requirements and conditions, some are requisite technicians and others are not technicians, for example: requirements of: organization, humans (expert, professors, and students), etc...
In the reality, eLearning is an interactive sector and an intersection with other sectors, for example IM, km, LMS/CMS, cooperative learning and has two ways: synchronous and asynchronous, each way has its advantages and disadvantages. The universities almost need the asynchronous way more than the synchronous one.

In fact, the complexity of the management of the information as much of the courses as of the students has demanded specific systems for the management of eLearning, denominated LMS/CWSs (Learning/Course Management Systems) with commercial products (WebCT, Lotus, BlackBoard, etc...) and of license GPL (Moodle, Illias, etc...). Nevertheless, improvements are due to develop that foment the collaborative learning (CSCL), the management of the knowledge and its semantic representation, the adaptation to the user, etc...

The LMSs/CMSs is the heart of the solutions of eLearning, are software that automate the administration of the events of the education. There are two concepts: vestibule of education and LCMS are very similar to the LMS concept, but they have some differences.

In general, all the LMSs manage the connection of registered users, catalogues of the course, they follow activities of nascent and the results, and provide intelligence data for the administration, whereas some LMSs can include additional functions like for example: responsibility of contents, direction of education of classroom, instructors and tools of collaboration to the student (to char it, groups of discussion, etc...).

At the present time, there is a great amount of software that is used as it leaves from eLearning (there are almost 200 LMS), but most necessary they are studies than they allow to improve those systems, specially the based ones on OSS to favor its implantation in universities. Nevertheless, great part of the studies compared and evaluated between LMSs is only centered in analyzing services available, but it does not analyze the behavior and functionality.

After this analysis of LMSs/CMSs one has identified those platforms OSS that can be used candidates to their evaluation and like support to the development, since the use
of platforms is considered more advisable that have a development community that supports it (to create a new one). Once identified, we have analyzed those tools (based on the management of the knowledge and collaborative work) that would be necessary to give an effective support eLearning to present/display a flexible LMS.

Previously, the objectives of the three evaluation of LMSs are leaving from a robust LMS based on Open Source to make an analysis of their characteristics and proposing the incorporation of characteristics that we considered specially important like they are the management of the knowledge and the collaborative learning, that is as a rule not contemplated in these products. The proposal of a flexible system of management of eLearning is directed to incorporate these mechanisms on a platform OSS.

We presented/displayed the system that will be designed specially to satisfy the requirements with form of the open and traditional learning using the tools of eLearning in forms asynchronous. We presented/displayed detailed information more on the tools of the system, that support open and traditional learning.

Moodle is the LMS of OSS that reunites a series of interesting characteristics and flexible has been chosen to present/display a LMS that it has in addition to the MOODLE characteristics, some interesting tools, that is to say, the flexible system of management of eLearning is MOODLE Os-LMSs with (some characteristics of km and some tools of the cooperative learning).

These tools are:

- Systems of recommendation.
- Generation of structure of the knowledge.
- Tools of standardization.
- Services of groupware.
- The tools of markers.
- Private email (and mail).
- Share / Reuse the content.
- The construction of community.
Survey & Result

- Shared spaces.
- Pursuit of the groups.
- Tools of personalization.
- System of evaluation.

6.7 Future aspect of pedagogy for e-Learning

We expect that in the future in combination with technological advances e-Learning will move from formal learning to informal learning. Learning will be directly embedded in everyday tasks and include communication and collaboration or interaction with other people because the new devices will support ubiquitous information and communication access and collaborative working for everyone. That way learning will not only be provided to a single person but to a group or team of people. With this new concept a team of people will be more efficient in doing certain things than a sum of knowledgeable individuals. This kind of group learning will also require new learning models. The Reusability of learning objects can become successful if these standards are combined with standards for learning design (pedagogical & didactic as well as graphical design) and are extended with adaptive technologies to customize learning objects dynamically to user preferences and the intentions of trainers or coaches. Further enhancements would be the support of a finer granularity of reusable information chunks which could be more universally reused and adapted.

6.8 Applicability of e-learning

Every intention has a perfect motive behind it, so as the e-learning. The need for e-learning stems from the demand within education and government to make better use of computing and to better apply computer technology to improve education standards, processes and knowledge delivery from the knowledge sellers to knowledge buyers. Economic and marketing forces and digital convergence have influenced the e-learning. Now industries are repositioning themselves to take advantage of new opportunities, including the creation of entirely new services and software, delivery channels for training courses, development of new tutorial products and development of self learning based software for the online environment.
Various applications of e-learning are continually affecting trends and prospects for learning over the internet. The application of e-learning in India is measured by the respondents who are using internet and using e-learning tools in partial or whole through a separate questionnaire method. The answers received from the respondents were further analyzed and interpreted in the form of tables and graphs on the basis of following points. e-Learning and its technological basis - e-Learning environments - proved to be an appropriate tool which can support the learning process efficiently, effectively and satisfactorily. In the future e-learning will open up to us new dimensions in the world of learning we never experienced before. With their help the right knowledge will be learnt at the right time, by the right person, in the right context – a life long leaning.