Students’ experiences on eMesimi; an e-learning system in University of Prishtina, Kosova

Erdelina Kurti
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ABSTRACT

Nowadays many universities in the world apply technology enhanced learning in order to help students. Due to potentials that technology enhanced learning offers, nowadays education in all contexts is using it and universities in particular are trying to apply it. One such case is the University of Prishtina in Kosova that is subject of this thesis.

University of Prishtina as the only public university in Kosova faces challenges when it comes to introduction of technology enhanced learning. Such a case is an initiative of one of the teachers that is called eMesimi. eMesimi is an e-learning system based on Moodle software that is used for offering courses for students in University of Prishtina since 2005. The idea of this research is to investigate students’ experiences using this system, combined with teachers’ opinion regarding the implementation of full scale e-learning system.

For this purpose the research was led using the octagonal theoretical model for e-learning. The eight factors in this model have then been grouped in three major domains: educational, technological and organizational.

This theoretical model was followed with empirical study using a questionnaire and mail interviews as data collection techniques. The questionnaire data have been collected from 60 students and have targeted issues regarding the educational and technology domain. The mail interviews where conducted with two teachers and addressed all domains, but the technological domain was addressed more from an attitude and requirements perspective. This approach was needed because none of the interviewed teachers have had previous experience with an e-learning system.

The analysis of the data shows generally positive attitude among students for an e-learning system, while teachers’ answers raise some important issues that should be taken into consideration while implementing e-learning system.
ACKNOWLEDGMENT

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Thanks to my husband Arianit for his moral support and encouragement and to my little son Enkel.
Content

ABSTRACT ..................................................................................................................................................... II

ACKNOWLEDGMENT ........................................................................................................................................... III

LIST OF FIGURES AND TABLES .................................................................................................................... V

1. INTRODUCTION ........................................................................................................................................ 1
   1.1 INTRODUCTION TO E-LEARNING ........................................................................................................... 1
   1.2 GENERAL INFORMATION ABOUT KOSOVA ....................................................................................... 2
   1.3 BACKGROUND OF UNIVERSITY OF PRISHTINA .............................................................................. 2
   1.4 DESCRIPTION OF EMESIMI .................................................................................................................. 3
      1.4.1 Architecture ................................................................................................................................. 3
      1.4.2 Administration and users access levels ..................................................................................... 5
      1.4.3 Learning resources and activities ............................................................................................. 6
   1.5 PURPOSE AND RESEARCH QUESTIONS ............................................................................................. 7
   1.6 DELIMITATIONS ............................................................................................................................... 7

2. THEORY .................................................................................................................................................... 8
   2.1 EDUCATIONAL DOMAIN .................................................................................................................. 11
   2.2 TECHNOLOGICAL DOMAIN ............................................................................................................ 12
   2.3 ORGANIZATIONAL DOMAIN .......................................................................................................... 12

3. METHOD .................................................................................................................................................. 14
   3.1 DATA GATHERING TECHNIQUES ...................................................................................................... 15
   3.2 DATA ANALYSIS ............................................................................................................................... 18

4. EMPIRICAL STUDY ................................................................................................................................ 19
   4.1 QUESTIONNAIRE ............................................................................................................................... 19
      4.1.1 Educational domain .................................................................................................................. 19
      4.1.2 Technological domain ............................................................................................................. 20
   4.2 MAIL INTERVIEWS ........................................................................................................................... 21
      4.2.1 Educational domain .................................................................................................................. 21
      4.2.2 Technological domain ............................................................................................................. 22
      4.2.3 Organizational domain ........................................................................................................... 22

5. ANALYSIS .............................................................................................................................................. 25
   5.1 EDUCATIONAL DOMAIN .................................................................................................................. 25
   5.2 TECHNOLOGICAL DOMAIN ............................................................................................................ 26
   5.3 ORGANIZATIONAL DOMAIN .......................................................................................................... 27

6. CONCLUSION .......................................................................................................................................... 28
   6.1 OWN REFLECTIONS .......................................................................................................................... 29
   6.2 FUTURE WORK ................................................................................................................................. 29

7. REFERENCES ........................................................................................................................................... 30

APPENDIX A – QUESTIONS OF THE QUESTIONNAIRE WITH STUDENTS ........................................... 32
APPENDIX B – MAIL INTERVIEW QUESTIONS WITH TEACHERS .................................................. 34
LIST OF FIGURES AND TABLES

Figure 1: eMesimi-Architecture and organization ................................................................. 4
Figure 2: Elements of a learning model (Oliver et al. 2002) .................................................... 9
Figure 3: Octagonal model of e-learning (Khan 2005) .......................................................... 22

Table 1: eMesimi-user roles descriptions .................................................................................5
Table 2: e-learning factors .........................................................................................................10
Table 3: Educational domain ................................................................................................... 11
Table 4: Technology domain .....................................................................................................12
Table 5: Organizational domain ............................................................................................... 13
Table 6: Relevant situations for different research strategies Yin (1994) .................................. 14
Table 7: Detailed view of the data gathering techniques .......................................................... 17
Table 8: Breakdown of students’ answers regarding educational domain ............................. 20
Table 9: Breakdown of students’ answers regarding technological domain .......................... 21
1. Introduction

This chapter presents an introduction to e-learning in general and continues with general information on Kosovo, followed with a background of the University of Prishtina, its current situation, opportunities and challenges in terms of introducing e-learning system. Moreover this chapter provides a description of an e-learning system based on Moodle software that is currently being used in the University of Prishtina.

1.1 Introduction to e-learning

Introduction of computer based information systems always tend towards facilitating human activities. One of the oldest human activities that were also subject of changes due to technology evolution was learning. The idea to use computers in order to facilitate the process of learning has evolved with the development of first computers. Internet facilitated the design and development of web based learning.

Many universities in the world apply technology enhanced learning in order to help students. In this domain technology as the main tool should be studied how it works in order to understand how it can help the learning process. Due to potentials that technology enhanced learning offers, nowadays education in all contexts is using it and universities in particular are trying to apply it.

One of the many forms of technology enhanced learning is called e-learning. In this context “e” stands for electronic that tends to represent the technology as mediator in the learning process. Different authors have given definitions about e-learning. For instance one of the definitions is “E-learning system is defined as the entire technological, organizational and management system that facilitated and enables students learning via the internet” (Levy & Murphy, 2002). Piskurich in his work published on 2003 defines e-learning as: “Learning that uses computer networks or webs as the delivery or mediation mechanism”. While Shepherd (2003) defines e-learning as: “E-learning utilizes computers and computer networks as an additional and complementary channel of communication; connecting learners with learning media, with other people (fellow learners, sources, facilitators), with data (about learning, about media, about people) and with processing power”. As it can be noticed definitions of e-learning varies from too broad (including the entire organization infrastructure as a part of it) to narrow view of e-learning simply as mediator and a delivery mechanism.

Introduction of World Wide Web offered different communication media for interactions between learners. These new interaction modes have been considered as an added value by many authors (Levy, 2006) (Piskurich, 2003). Based on the interaction modes e-learning is categorized in roughly two categories: synchronous and asynchronous e-learning. All e-learning applications that allow real time communications (video and audio conferences, chat) between teachers and students are regarded as synchronous e-learning. While the applications that do not support these real time interactions are considered as asynchronous e-learning. In many of today’s e-learning applications, features of systems from both categories are used.
Many universities consider e-learning applications as an extension to their regular infrastructure. This is quite common in almost all universities in developed countries. Universities in developing countries are still lacking visions for increasing their services by using technology. Such an example is University of Prishtina in Kosova.

1.2 General information about Kosova

Kosova is a country that is located in South East Europe covering 10 887 km² and it has 2,100,000 inhabitants (2007 estimate). It is a post conflict country that recently gained independence on February 17, 2008. According to Statistical Office of Kosova (2005) it is estimated that, 88% of the population is Albanian, 7% Serbs and 5% others. Kosova is one of the poorest economies in Europe, with per capita income of an estimated 1118€ per annum according to the World Bank in 2006. Unemployment is over 60%. Over 50% of the population is under the age of 25. In these disfavored circumstances many young people consider education as an opportunity for a better future.

1.3 Background of University of Prishtina

Kosova has only one public university that is called University of Prishtina and it is located in Prishtina (the capital of Kosova) that is relatively new, established in 1970. Initially, following its establishment the University of Prishtina consisted of four schools, and the lectures were not provided in Albanian language since at that time there was a shortage of Albanian teaching staff. Since 1991 until after the war in 1999, due to political reasons it was closed for Albanian students. The teaching process was held outside legal premises and private properties such as houses and even shops were improvised and used as classrooms. In order to facilitate the studies for students, many teachers compiled their text-books. However, in these circumstances despite the hard work and enthusiasm of teachers and students the results of the studies in terms of quality were not at a normal level. This had a major impact in the teaching process and the consequences of that gap are still present.

The University of Prishtina currently has 17 educational centers distributed in seven different cities throughout Kosova. According to the university statistics of 2005 (Halimi 2005), there are 28 832 students. In year 2000 its development phase began by later embracing the Bologna process. The teaching process is mainly based on traditional teaching methods and teachers use blackboards and chalks to deliver their lectures. Only in rare cases the lectures are provided in power point presentations with projectors. The University has only a limited number of computer labs. Also the offices of teachers are not equipped with computers and they can only use their own computers in their offices. Students lack an access to literature, especially in their native language and there is no updated library where they can borrow books that are relevant to their courses. Also the exams are mainly conducted in a traditional form, and the results of the exams are still placed in the notice board. Based on my experience as a former student of the University of Prishtina, there is a generation gap between senior (older than 55) and junior teaching staff. Senior teachers comprise the majority of teaching staff estimated around 65% (there is no official statistic available).
This University does not have an internal computer based information system. The communication between different centers is done primarily through phone and regular mail. E-mail is not yet considered as an important communication tool especially by senior teaching staff members. As far as the student-teacher communication is concerned, it should be noticed that only the junior teaching personnel uses email to communicate with their students, while for the other senior teaching staff students should go to the University and meet them in person.

With the lack of IT infrastructure and relatively old teaching personnel, the University of Prishtina potentially has difficulties offering qualitative education especially in fast changing fields. In these circumstances some of the teachers introduced different tools primarily based on the web for communication with their students. Such a case is the site of eMesimi (eMesimi, 2005). The eMesimi is an initiative of one of the teachers of the University of Prishtina to offer online support for his courses, due to his inability to be physically present. This website uses open source Course Management System (CMS) called Moodle. eMesimi means e-learning in Albanian.

1.4 Description of eMesimi

Originally eMesimi initiative started on summer 2005 as a web based CMS. At that time this system was used for the course offered in the Prishtina International Summer University in 2005. Since then eMesimi was used as an e-learning system for 8 courses mainly in the computer science area. Since 2005 in this system have been registered 746 students in different courses. In November 2005 through eMesimi the teacher started to offer audio lectures that students could play/download. On March 2006 on the website of eMesimi video lectures were available, mainly as short tutorial sessions and streamed through YouTube and GoogleVideo servers. Currently on this system, each semester there are two actively running courses.

1.4.1 Architecture

The eMesimi site is based on the Moodle software. Moodle is a CMS that is free and open source software designed to be used as an online learning system. It has been created by Martin Dougiamas a WebCT administrator in the Curtin University of Technology in Australia, who decided to make a simpler model as a result of dissatisfaction with the commercial software that were used there. The word Moodle stands for Modular Object-Oriented Dynamic Learning Environment. Moodle 1.0 was released in 2002, and since then it has been developed by adding new features in order to have better performance. Today, there are 43,828 (as of May 22, 2008) sites that use this software (Moodle, 2008). As an open source software Moodle has a large community of developers that provide different modules and plug-ins for enhanced functionalities. Today the latest stable version is Moodle 1.9 and the version 2.0 is under development and in beta phase.

Moodle is a typical database driven web application, which does not require a client to be installed since it only uses web browser for displaying the information. The Moodle is developed in PHP and MySQL environment. PHP stands for “Hypertext Preprocessor” and is a server side scripting language that is typically used for developing dynamic web applications. MySQL is “an Open Source Software relational database management system
that uses SQL (Structured Query Language). The Moodle architecture is organized from two basic components: PHP engine and mySQL database. The database is used for storing all the content that needs to be provided through the online platform. The PHP engine is responsible for activity creation and administration of the online courses as well as manipulating with content available on the database. Moreover the PHP engine is the interface for using the Moodle system. Both, PHP engine and the database reside on the web server, thus eliminating need for any client install.

The basic setup for using eMesimi site requires that users have access to an Internet connected computer and they have an installed web browser (such as: Internet Explorer, Firefox, Safari etc.). Entire teaching is conducted online and for getting access to learning materials students need to login with their username and password. After they login all the activities and work of the students is traceable via server log files. The Moodle system is the communication tool between teachers and students. The complete architecture and the ways of interaction with the eMesimi system are illustrated in figure 1.

Figure 1. eMesimi – Architecture and Organization
1.4.2 Administration and users access levels

The administration of the course in eMesimi is done by the teachers of that specific course. According to the software implementation that Moodle uses, there are six categories of users: administrators, course creators, teacher, non-editing teacher, student and guest. These different user categories offer high scalability and flexibility for managing and offering online courses. Detailed description for each of user categories and description of their access levels is presented in table 1.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description of users access levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>Administrators can usually do anything on the site, in all courses.</td>
</tr>
<tr>
<td>Course creator</td>
<td>Course creators can create new courses and teach in them.</td>
</tr>
<tr>
<td>Teacher</td>
<td>Teachers can do anything within a course, including changing the activities and grading students.</td>
</tr>
<tr>
<td>Non-editing teacher</td>
<td>Non-editing teachers can teach in courses and grade students, but may not alter activities.</td>
</tr>
<tr>
<td>Student</td>
<td>Students generally have fewer privileges within a course.</td>
</tr>
<tr>
<td>Guest</td>
<td>Guests have minimal privileges and usually can not enter text anywhere.</td>
</tr>
</tbody>
</table>

Table 1. eMesimi– User roles descriptions

Such granularity of user access levels offers possibilities for best organization of courses, especially when teaching of a course is shared between two or more teachers. Registration of users can be done in a centralized way (if the university applies to have uniform student’s usernames) or by self-registration when students can freely choose their username. The first registration option is better because the institution can have full control over the registration process but it requires more human resources to handle the registration process. The self-registration process is less convenient because the students choose their usernames themselves, but in the same time it is an easier process since it does not require the institution’s intervention in the registration.

The courses in the eMesimi site can be organized in the topical or weekly format. The choice is fully flexible and teacher can easily change between weekly and topical format layout of a course. The topical format is more useful when a course does not have a fixed cycle schedule so the teacher can choose where to publish a certain lecture. The weekly format is more useful when the course has a cyclic schedule (such as, every Monday from 10-12). One topic usually includes lecture slides, audio lecture, discussion forum, assignment and reading material. Any user that has teacher (or above) access level can create learning activities for students. Students need to login in order to have access into the learning material. When they are logged in they can view lecture slides, read/download materials, submit the assignments and post comments in the forums.
1.4.3 Learning resources and activities

The eMesimi offers a large set of possibilities when it comes to learning resources and activities. Currently in the standard installation the teacher can create and link to resources using text or a web page, link to a file or external web page, display a directory of files and add a content package that makes possible to use materials in standard format and that can be reused in different formats without having to convert materials in new format. The resources are typically used for learning related materials such as lecture slides, reading materials, audio lectures etc. These resources are more one-way communication and do not require collaboration between users.

For offering collaboration activities there are plenty of activity modules available. In eMesimi there are a large number of already installed activity modules in which students can be engaged in the online learning system. These by default installed modules include:

- Assignments where students submit the assignments either as single or multiple files
- Chat where students can have real time chat communication with teachers and other students
- Choice where students can answer to quick poll concerning a certain issue
- Database activity that enables the users to enter data in a predefined form. The database enables entries to be sorted, searched etc. Moreover it can contain different types of information such as texts, images etc.
- Forum that is a typical collaborative asynchronous activity that can serve for moderating the discussion on certain topic
- Glossary that allows a dictionary or list of definitions to be maintained
- Lesson that is an activity that enables content to be provided in flexible and interesting way. It usually contains multiple pages, each of them ending with a question. Depending on the answer students can proceed further, stay in that page or going back to another page
- Quiz which is an activity module that enable question with multiple answers to be created
- SCORM/AICC (Shareable Content Object Reference Model/Aviation Industry CBT [Computer-Based Training] Committee) is an activity module that enables loading and playing SCORM compliant content packages
- Survey that is an activity module that provides a number of verified survey instruments that have been found useful in assessing and stimulating learning in online environments
- Wiki that is a module that enables users to work together on web pages to add, expand and change the content

Besides these basic modules and activities available on standard installations, eMesimi can be expanded with other modules and plugins that are developed by members of Moodle large community. These modules and plugins can help the teacher to design new learning activities or to customize the existing ones.
1.5 Purpose and research questions

As stated in the previous section, eMesimi represents an individual initiative for implementing e-learning in the University of Prishtina. Implementing a full scale e-learning system in a university requires much more than individual initiative. Therefore the purpose of this research is to investigate challenges and possibilities for implementing e-learning system in the University of Prishtina. For accomplishing this research, eMesimi infrastructure will be used in order to conduct a survey with students. Additional data will be collected by using mail interviews with teachers.

In order to achieve this, the following questions should be answered:

1. What are the experiences of students using eMesimi in the University of Prishtina?
2. What is the opinion of teachers for applying e-learning system in the University of Prishtina?

1.6 Delimitations

This research is based on the eMesimi, hence this research is focused on this specific system and not e-learning system in general. One practical limitation of this research is the fact that it targets different stakeholders but considering administrative borders Ministry of Education of Kosova and Board of the University of Prishtina have been excluded from this research.
2. Theory

This chapter provides the octagonal model for e-learning suggested by Khan (2005). The eight factors that this model comprises have been grouped into three domains: educational, technological and organizational. Each of these factors address issues that need to be considered when designing an e-learning system.

Theory in a research area is usually described as a set of hypotheses that covers all the aspects of a specific natural or social phenomenon. In this sense theory offers the guidelines for evaluating practice and in the same time it uses the practice results for its improvements and adjustments. Finding a proper theory as a reference is always a challenge for the practitioners in leading their research. In this aspect defining a proper theory for e-learning systems is a very complex task, largely because the learning process is a complex phenomenon (Shull, 1995).

The e-learning theories as any other theory should offer a consistent set of variables and relationships among them that impact the learning process (Garrison, 2000). But according to Mayes and Freitas (2004) "there are really no models of e-learning per se – only e-enhancements of models of learning". In this aspect the e-learning theories have mainly build upon different models that have been derived form learning theories. These models usually describe the possibilities how technology could support learning. The descriptions of the models are given at the level of pedagogical variables and at the level of detailed practice in implementing those principles. From pedagogical perspective the e-learning models have been inspired from Constructivist Learning Environments theories (Duffy & Cunningham, 1996) and Activity Systems (Jonassen, 2000). Most of e-learning models are based on the features from more than one pedagogical perspective. Some of the models tend to have a very broad teaching framework while some of them are more technically oriented with primary focus on tools. Based on this different authors have suggested models and the set of variables that should be considered when designing e-learning systems.

One of the initial attempts of using different criteria for designing technology enhanced learning activities was proposed by Oliver (1999). This attempt was followed by Oliver et al. (2002) work that continued with a model of learning designs based on the three critical elements: learning tasks, learning resources and learning supports, as presented in figure 2.
This model according to authors is an attempt to use various forms of generic learning design to extend based on the range of problem-types as described by Jonassen (2000). For example one instance of instructional learning design was LISP TUTOR (Anderson & Reiser 1985) that primarily targeted the teaching and was based on the idea that “knowledge is build from the instructions”. On the other hand there is also another model developed by Britain and Liber (1999) that was based on the conversation model. These models has been primarily evolved based on the learning theories and later adapted to the technology change happened as a result of technology enhanced learning.

The learning design model offers interesting perspective in terms of describing learning activities using tasks, resources and supports. According to the authors of the model, these formal descriptions “would provide the means to more easily guide the instructional design process and will also provide some means for institutions to provide supports and structures for teachers wishing to employ them”. Based on this it could be considered that the characteristics of this model are firmly rooted in the learning science perspective. This model was used to explore strategies by which nature and scope of the forms of learning designs can be formalized using information and communication technologies (Oliver et al. 2002).

Having in mind that the aim of this thesis, is primarily to investigate e-learning from the system perspective, the learning design model might not be the appropriate choice. Moreover, the learning design model seems a bit difficult to be adopted for identifications of the variables that could be used as guidance for eventual implementation of e-learning systems. From system perspective point of view, a comprehensive analysis of all the aspects and stakeholders need to be taken into consideration. Based on the literature review regarding the subject area, one of the most comprehensive theoretical models that somehow fulfill the systemic perspective is the e-learning model proposed by Khan (2005). Beside that it offers comprehensive view on the relevant factors in the e-learning systems that can be used as measuring variables for e-learning effects and implementation.
This model is built upon octagonal structure for the e-learning system that according to Khan (2005) also is grouped in the three major domains. This model, including its factors is illustrated in figure 3.

![Octagonal model of e-learning (Khan, 2005)](image)

**Figure 3.** Octagonal model of e-learning (Khan, 2005)

As it can be noticed this model represents 8 factors that should be considered when designing an e-learning system. These factors cover all the aspects of the e-learning and this is considered to be a very suitable model for the subject of this research. Since the University of Prishtina currently lacks an official e-learning system, it is important to identify all the factors that would determine the successfulness of e-learning. These factors are grouped in three major domains: educational, technological, and managerial. Moreover each of the factors can be dissected in a set of issues that need to be addressed. The educational domain is consisted of: pedagogical, ethical and evaluation factors. The technological domain is consisted of technology and interface design factors. And the organizational domain is consisted of institutional, resource support and managerial factors. The breakdown of these factors according to three main domains is presented in table 2.

<table>
<thead>
<tr>
<th>Educational domain</th>
<th>Technological domain</th>
<th>Organizational domain</th>
</tr>
</thead>
</table>
| **e-learning factors** | 1. Pedagogical  
2. Ethical  
3. Evaluation | 1. Technology  
2. Interface design | 1. Institutional  
2. Resource support  
3. Management |

**Table 2.** e-learning factors
Based on the model and this tabular breakdown of factors affecting e-learning it is obvious that design and development of sustainable e-learning system is a multidisciplinary effort. This basically implies that in the design and development of the e-learning systems, the educational, technological and organizational factors should be taken into consideration.

2.1 Educational domain

Table 3 presents the breakdown of the educational domain into composing factors and issues that need to be addressed. According to the table the educational domain is consisted of pedagogical, ethical and evaluation factors. These factors have issues that need to be addressed. The main purpose of this domain is to ensure the educational benefit of the e-learning system.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Issues to be addressed</th>
</tr>
</thead>
</table>
| Pedagogical factors | • Content provided  
                             • Learning strategy |
| Ethical factors  | • Geographical diversity  
                             • Etiquette  
                             • Legal issues |
| Evaluation       | • Quality of the learning content  
                             • Students performance |

Table 3. Educational domain

For the educational domain the first factor to be considered is the pedagogical factor. According to Khan (2005) the pedagogical factor should reflect information and guidelines concerning the content of the courseware offered and the learning strategies needed to be used in an e-learning system. This is especially important since e-learning offers new possibilities for digital learning content to be used. The use of digital learning content offers new possibilities and therefore potentially it will present a need for a change in the learning strategy for teaching.

The second factor of the educational domain is ethical factor. This factor is important to be investigated and taken into consideration especially since e-learning systems creates a “gap” between the teachers and students. Thus in this way opening possibilities for unethical conduct from students while performing the learning activities within the system. Therefore it is extremely important to investigate the eventual threats that e-learning might present for institutions where the overall academic culture of the students is low.

The third factor of this domain is evaluation. The evaluation is closely related with the previous two factors. Especially in terms of the quality of the learning content provided and eventual possibilities for students cheating. Identifying proper evaluation methods should also be in line with the learning strategy chosen.
2.2 Technological domain

The technological domain is another part of the octagonal model. Moreover, the technological component is a part of other e-learning models proposed by other authors. This domain primarily addresses the issues of the technological infrastructure needed to be used for the development of e-learning system and the issues of the interface design of the software solutions used. In this aspect the issues that need to be addressed when dealing with technology is the hardware and software used for building the e-learning system. As the second factor of the technology domain is the interface design. The main issues that should be addressed according to Khan (2005) when investigating the interface design of the e-learning systems are: page and site design, navigation, accessibility and usability. All these issues directly affect the overall benefits of the e-learning systems. The breakdown of the issues to be addressed when analyzing technological component is presented in table 4.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Issues to be addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology factor</td>
<td>• Hardware</td>
</tr>
<tr>
<td></td>
<td>• Software</td>
</tr>
<tr>
<td></td>
<td>• Infrastructure</td>
</tr>
<tr>
<td>Interface design factor</td>
<td>• Page and site design</td>
</tr>
<tr>
<td></td>
<td>• Navigation</td>
</tr>
<tr>
<td></td>
<td>• Accessibility</td>
</tr>
<tr>
<td></td>
<td>• Usability</td>
</tr>
</tbody>
</table>

Table 4. Technology domain

2.3 Organizational domain

The organizational domain is the last domain that comprises the e-learning model. This domain is also very important for the successful implementation of the e-learning systems. According to Khan (2005) this domain is comprised from institutional, resource support and managerial factor. In the institutional factor the main issues that need to be addressed are: the needs assessment issue in order to identify if e-learning is suitable for the institution, return of investment if implementing an e-learning system and organizational changes that might occur in order to accommodate the e-learning.

In the resource support factor the following issues should be addressed: the offered support for users of such system, should it be both online and offline resources available for such support.

In the managerial factor the issues that should be addressed are: human resources for the e-learning system, team management. The breakdown of the issues to be addressed when analyzing organizational domain is presented in table 5.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Issues to be addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional factor</td>
<td>• Needs assessments</td>
</tr>
<tr>
<td></td>
<td>• Return of investments (ROI)</td>
</tr>
<tr>
<td></td>
<td>• Organizational change</td>
</tr>
<tr>
<td>Resource support factor</td>
<td>• Support provided</td>
</tr>
<tr>
<td></td>
<td>• Online/Offline support</td>
</tr>
<tr>
<td>Managerial factor</td>
<td>• Human resources</td>
</tr>
<tr>
<td></td>
<td>• Team management</td>
</tr>
</tbody>
</table>

**Table 5. Organizational domain**

Decomposition of e-learning model into domains, factors and issues was a way to make the identification of the challenges that are faced during the e-learning system implementation easier. These challenges will help to create a clear picture of different stakeholders in the e-learning system. Moreover this decomposition will also be beneficial in methodological terms in order to dissect the main variables that are going to be measured and analyzed using different data gathering techniques.
3. Method

This chapter presents the scientific method that is used in this thesis. Choice of method is based on the theoretical model presented in the previous chapter. Based on the research questions investigated, exploratory research method has been used. This method is implemented using empirical data gathering techniques. Moreover in this section a detailed plan of using a questionnaire and mail interviews is provided as guidance for measuring the issues extracted from the theory model. Description of the data analysis strategy is the concluding section of this chapter.

According to Marczyk et al. (2005) “science can be defined as a methodological and systematic approach to the acquisition of new knowledge”. Based on this for a proper findings and scientific value of a research work the method is crucial. Nowadays every field of science relies on the contributions made by systematic research (Marczyk et al. 2005). The choice of methods should be affected by the problem and the theory model used. For a successful research the first step is identification of specific question that needs to be answered. Moreover based on the question a set of operational variables in form of hypothesis or theoretical model should be identified. The final step for valid research then would be designing the proper method that would in reliable way measure the changes in the identified variables in the problem statement. According to Hedrick et al. (1993) a basic categorization scheme is based on the type of the research questions. This categorization scheme is presented in the first column of the table 6 that was suggested by Yin (1994). Main idea of the categorization of the research strategies was to offer guidance what kind of research activities could be used based on the type of the research question. The breakdown of the relevant situations for different research strategies is presented in the table 6.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Form of research question</th>
<th>Requires control over behavioral events?</th>
<th>Focuses on contemporary events?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment</td>
<td>How, why</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Survey</td>
<td>Who, what, where, How many, How much</td>
<td>no</td>
<td>yes</td>
</tr>
<tr>
<td>Archival analysis</td>
<td>Who, what, where, How many, How much</td>
<td>no</td>
<td>yes/no</td>
</tr>
<tr>
<td>History</td>
<td>How, why</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Case study</td>
<td>How, why</td>
<td>no</td>
<td>yes</td>
</tr>
</tbody>
</table>

Table 6. Relevant situations for different research strategies Yin (1994)

According to Yin (1994) the “what” questions for this thesis are either exploratory or prevalence (widespread) studies. According to Marczyk et al. (2005) the exploratory method is typically used when “we know little or nothing about a certain subject”. Exploratory research studies are aimed at discovering interesting relationships that may obtain in a set of data (Schwab, 2005). Typically, exploratory research is advised in cases when an interesting issue has not been subject to prior theory or empirical research (Colman, 2001). Investigation of the student experiences regarding eMesimi and teachers opinion for applying e-learning system in University of Prishtina, fulfills these initial criteria for applying exploratory research. For none of the research questions that are
investigated in this thesis prior there has not been an empirical or theoretical research. Therefore applying exploratory research might be useful. Moreover, applying exploratory research in this case is supported by Yin (1994) and his categorization of the research questions based on the table 6. Since the aim of this research is basically exploration of students’ experiences using eMesimi and teachers’ opinion on adopting e-learning system in their teaching; therefore an exploratory method would best fit.

The measurements of the factors are based on empirical research methods primarily questionnaires and interviews. According to Kazdin (2003) empirical research is usually based upon measurement. Measurement could be regarded as the base of scientific inquiry, and therefore the choice of proper measurement techniques and strategies are an essential component of research methodology (Marczyk et al. 2005). Since this research has also elements of a case study, therefore it will be very important to identify the stakeholders. The importance of identification of stakeholders is mentioned by different authors like Yin (1994) and Kazdin (1982).

With the reference to the research problem, the main stakeholders are: students, teachers, the Board of the University of Prishtina and Ministry of Education. These stakeholders have a direct impact on each factor of the theoretical octagonal model presented in the previous chapter. The students as stakeholders will provide a valuable input regarding the usefulness of using e-learning system since they are the end users of such system. In this aspect they are the primary stakeholders in almost all the factors of the octagonal theoretical model. Teachers are also a very important stakeholder in the process of e-learning system adoption since they will be content providers in such systems. The other two stakeholders (Board of University of Prishtina and Ministry of Education) are mainly important for the organizational domain since they are not direct users or content providers in the e-learning system.

3.1 Data gathering techniques

This research relies upon collection of empirical data based on the predefined model/theory with an aim to explore students’ experience on eMesimi and teachers opinion on applying e-learning system. From this perspective it can be said that this is an inductive research method. Typically inductive method implies drawing of general conclusions based on the empirical data. The empirical base for inductive method will be the measurement of the stakeholders’ impact in different factors for implementing e-learning. Measurement in most of the cases is regarded as fundament of the scientific inquires therefore the measurement techniques and procedures are viewed as essential component of the research method (Marczyk et al. 2005). The most widely used data gathering technique for metric data are questionnaires while for non-metric data are interviews. For successful accomplishment of this thesis two data gathering techniques are used in order to create the empirical base that could offer some indications.

In this case the focus is on two data gathering techniques: questionnaires and mail interviews. The questions of the questionnaire presented in the Appendix A are used for data collection from students. This questionnaire is designed with predefined answers and also has some open questions for general reflection. The questions try to address the issues identified in table 7. The questionnaires are done with 112 students enrolled in one course
Questions in the questionnaire with students explicitly target issues dissected from 5 factors grouped into educational and technological domain. Questions regarding the organizational domain are left out of the questionnaire because in University of Prishtina students are not involved in these issues.

Mail interviews are done with two teachers. The interview questions address issues from all 3 domains. These teachers currently are not involved in providing online lectures. Therefore the interview questions will not deal with detail issues of technological factor and interface design factor. Question regarding this domain will only deal with their technology attitude and requirements. Selection of the teachers has been done having in mind generation gap that exists among staff members of the University of Prishtina. One of the teachers is selected from the majority senior generation while the second one is a representative of junior generation. Therefore the age factor will also be a subject of analysis. Mail interviews are structured which means that they will get a set of questions and they will answer. There will not be any follow up questions. The data collected in this manner potentially offers more insight concerning issues related but not limited to: pedagogical, evaluation, resource support.

In table 7, a detailed plan regarding areas of importance is addressed as the breakdown in factors. Furthermore it shows the connection to different stakeholders and the data gathering techniques. ME is an abbreviation for the Ministry of Education of Kosova and UPB is an abbreviation for the University of Prishtina Board.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Issues to be addressed</th>
<th>Primary stakeholder</th>
<th>Other stakeholders</th>
<th>Data gathering technique used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedagogical</td>
<td>Content provided</td>
<td>Students, Teachers</td>
<td>UPB, ME</td>
<td>Questionnaire and mail interview</td>
</tr>
<tr>
<td></td>
<td>Learning strategy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethical</td>
<td>Geographical diversity</td>
<td>Students, Teachers</td>
<td>ME, UPB</td>
<td>Questionnaire and mail interview</td>
</tr>
<tr>
<td></td>
<td>Etiquette</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Legal issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaluation</td>
<td>Quality of the learning content</td>
<td>Students, Teachers</td>
<td>UPB, ME</td>
<td>Questionnaire</td>
</tr>
<tr>
<td></td>
<td>Students performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Hardware</td>
<td>Students, Teachers</td>
<td>UPB, ME</td>
<td>Mail interview and questionnaire</td>
</tr>
<tr>
<td></td>
<td>Software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interface design</td>
<td>Page and site design</td>
<td>Students</td>
<td>Teachers, UPB, ME</td>
<td>Questionnaire</td>
</tr>
<tr>
<td></td>
<td>Navigation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accessibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Usability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>Needs assessments</td>
<td>Teachers</td>
<td>Students ME, UPB</td>
<td>Mail interview</td>
</tr>
<tr>
<td></td>
<td>Return of investments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organizational change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource support</td>
<td>Support provided</td>
<td>Teachers</td>
<td>UPB, ME, students</td>
<td>Mail interview</td>
</tr>
<tr>
<td></td>
<td>Online/Offline support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>Human resources</td>
<td>Teachers</td>
<td>Students, ME, UPB</td>
<td>Mail interview</td>
</tr>
<tr>
<td></td>
<td>Management teams</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 7. Detailed view of the data gathering techniques*
3.2 Data analysis

Data analysis is one of the most important aspects of the research work. According to Marczyk et al. (2005) “in most types of research studies, the process of data analysis involves the following three steps: (1) preparing the data for analysis, (2) analyzing the data, and (3) interpreting the data”.

The first step of data preparation basically means grouping and preparing data for the next steps. In this thesis this step will be covered in the “Empirical study” chapter. The data in this section will be both “quantitative” (from questionnaire with students) and “qualitative” from mail interviews with teachers. The “quantitative” data will be transformed into percentage representation while “qualitative” data from mail interviews will be used as guide for analysis. The presentation of data will be according to the eight factors of the theoretical model. Moreover this presentation template will follow also in data analysis and data interpretation.

The next step is analyzing the data and it is the most important step in empirical studies. The data analysis can be divided into two major areas: descriptive and inferential (Marczyk et al. 2005). In cases of descriptive statistics data analysis main aim is data description and examination of relationships among data. In inferential statistic data analysis the main aim is to examine causal data relationships. Based on the problem under research and type of the questions in questionnaire and mail interviews, this research is more descriptive in nature. Since the main idea is to investigate the main factors that effect the implementation of e-learning system in the University of Prishtina, descriptive statistical analysis of the data seems to be good path to follow. The data analysis step described here is covered in “Analysis” section of the thesis.

The last and most important step of data analysis is interpretation of data that will be covered in the “Conclusion” section. The data interpretation will be closely related to the data analysis.
4. Empirical study

This chapter presents the information and data that has been collected using the questionnaire with students and mail interviews with teachers. The questionnaire data has been collected from 60 students and addresses the educational and technological domain. Mail interviews with teachers where conducted with two teachers and address all domains, but the focus of the technological domain was more on their attitude and requirements perspective. This approach was taken because none of the teachers that have been interviewed have had previous experience with e-learning system. The data collected from the questionnaire is presented in the tabular form, while mail interviews are presented as a transcript.

4.1 Questionnaire

The questionnaire has been conducted with students attending an “Information system” course. These students are in their 3rd year of studies in the faculty of Business Applied Sciences in the University of Prishtina and this course is given online only. The questionnaire has been online in eMesimi site for two weeks from April 14 until April 28. In this course are enrolled 112 students, out of which 12 have not been active into the eMesimi site the last three weeks. The questionnaire included 39 questions. 32 questions were formulated with predefined answers and for each factor students had open questions to reflect upon something that was not covered with predefined answers. In total 60 students answered the questionnaire questions. Since the questionnaire has been conducted using web based system all the questions with predefined answers were mandatory for the students to answer, while the open once were not mandatory. The complete answers are presented with the breakdown according to the component which is displayed in percentage.

4.1.1 Educational domain

The first domain addressed in the questionnaire is educational domain. In this section of the questionnaire issues regarding pedagogical, ethical and evaluation have been addressed. The main idea of this group of questions was to identify aspects related to: content provided, learning strategies, legal issues and students’ performance. The breakdown of the answers from students is presented in the table 8.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Agree to some extent</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The content of the course is accurate compared to relevant literature</td>
<td>88%</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>The course content is regularly updated according to the curriculum</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>eMesimi is a good way of delivering course materials</td>
<td>77%</td>
<td>22%</td>
<td>1%</td>
</tr>
<tr>
<td>The chat tutorial meetings provided are helpful</td>
<td>83%</td>
<td>16%</td>
<td>1%</td>
</tr>
<tr>
<td>The online discussion forums offered are effective for learning</td>
<td>78%</td>
<td>22%</td>
<td>0%</td>
</tr>
<tr>
<td>Internet connection fees are a disadvantage for eMesimi</td>
<td>30%</td>
<td>47%</td>
<td>23%</td>
</tr>
<tr>
<td>Question</td>
<td>Agree</td>
<td>Agree to some extent</td>
<td>Disagree</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------</td>
<td>----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>The course provides enough information on how to behave towards each other</td>
<td>52%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>The course informs students about the consequences concerning any form of plagiarism</td>
<td>58%</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>Prohibition of two exam sessions of the course is a fair punishment for plagiarism</td>
<td>57%</td>
<td>17%</td>
<td>26%</td>
</tr>
<tr>
<td>You have experienced any form of cheating while having this online course</td>
<td>10%</td>
<td>5%</td>
<td>85%</td>
</tr>
<tr>
<td>The quality of the lectures provided through eMesimi fulfills the needs for knowledge in the respective domain</td>
<td>60%</td>
<td>35%</td>
<td>5%</td>
</tr>
<tr>
<td>The continuous examination used in eMesimi, offers motivation for you to work harder</td>
<td>87%</td>
<td>12%</td>
<td>1%</td>
</tr>
<tr>
<td>Making your contribution on the assignments, forum posts etc, viewable by other students motivates you to try harder</td>
<td>60%</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td>You sometimes feel uncomfortable as other students can read your posts and assignments</td>
<td>42%</td>
<td>28%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Table 8. Breakdown of students answers regarding educational domain

Also regarding the educational domain the questionnaire included four open questions, related to pedagogical, ethical and evaluation factors. In the question regarding the opinion about teachers’ ability to use eMesimi in the future only 2 students answered that they doubt in the ability of senior teachers to use eMesimi in the future. In the question “do you consider that sitting in front of the computer is more challenging than learning in the classroom” there were three answers from students. One considers that it is more challenging; the other student says that it depends from the course and the last one says that it is more attractive than the classroom. About the best ways to reduce cheating four out of five answered that is punishment while the fifth one answered that he doesn’t know. In the last question about this domain which was “elaborate what you think needs to be improved in order to better fulfill your needs” five students answered that more lectures should be included.

4.1.2 Technological domain

The other domain that is addressed in the questionnaire is technological domain. Technology infrastructure such as hardware, software and interface design that includes page and site design, navigation, accessibility and usability has been addressed. The breakdown of the answers from students is presented in the table below.

<table>
<thead>
<tr>
<th>Question</th>
<th>Agree</th>
<th>Agree to some extent</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting up computers for using eMesimi platform is very easy</td>
<td>77%</td>
<td>23%</td>
<td>0%</td>
</tr>
<tr>
<td>You think that the Institution should have an orientation program that provides technical training to students before starting the course</td>
<td>87%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>The registration instruction given to you have been adequate for you to complete the registration</td>
<td>87%</td>
<td>12%</td>
<td>1%</td>
</tr>
<tr>
<td>The server where the eMesimi was hosted was available all the time when you needed to access it</td>
<td>80%</td>
<td>20%</td>
<td>0%</td>
</tr>
<tr>
<td>Question</td>
<td>Agree</td>
<td>Agree to some extent</td>
<td>Disagree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------</td>
<td>----------------------</td>
<td>----------</td>
</tr>
<tr>
<td>The minimum requirements for using eMesimi can be easily matched by all the computers that you have access to</td>
<td>80%</td>
<td>15%</td>
<td>5%</td>
</tr>
<tr>
<td>The hardware requirements have been clearly stated in the beginning of the course</td>
<td>78%</td>
<td>22%</td>
<td>0%</td>
</tr>
<tr>
<td>Offering videoconferencing lectures is a good way of providing educational materials</td>
<td>77%</td>
<td>18%</td>
<td>5%</td>
</tr>
<tr>
<td>You prefer audio lectures compared to video</td>
<td>37%</td>
<td>35%</td>
<td>28%</td>
</tr>
<tr>
<td>Internet speed presents a problem while using eMesimi to its fullest</td>
<td>37%</td>
<td>38%</td>
<td>25%</td>
</tr>
<tr>
<td>The course provides links to the necessary software needed to access all course content</td>
<td>73%</td>
<td>27%</td>
<td>0%</td>
</tr>
<tr>
<td>The most often used communication tool with the teacher is:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-mail 55%, internal eMesimi messages 27%, chat online 12%, forum posts 7%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The page design of the eMesimi is attractive to use</td>
<td>77%</td>
<td>20%</td>
<td>3%</td>
</tr>
<tr>
<td>The way the course material is organized with topics headlines makes it easily to navigate</td>
<td>72%</td>
<td>28%</td>
<td>0%</td>
</tr>
<tr>
<td>The search engine within the site is meeting your requirements</td>
<td>57%</td>
<td>30%</td>
<td>13%</td>
</tr>
<tr>
<td>The login procedure in eMesimi is simple</td>
<td>92%</td>
<td>8%</td>
<td>0%</td>
</tr>
<tr>
<td>The labeling system of eMesimi is very clear</td>
<td>85%</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>eMesimi uses an easy-to-understand terminology concerning learning resources and activities</td>
<td>85%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>The site is designed that you can easily get to a specific piece of content (in no more than 3 clicks)</td>
<td>83%</td>
<td>15%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Table 9. Breakdown of students answers regarding technological domain

The questionnaire included two open questions related to the technological domain. For the question “can you envision other technological devises that could be included in eMesimi” only two students answered, and both of them suggest that videoconferencing lectures should be included. About students’ suggestions on what would they change in the current design of eMesimi interface there were only three answers that for the time being they like it as it currently is. In the last question of the questionnaire “please add any comment regarding eMesimi that you feel the questionnaire haven’t addressed” there was not any feedback provided from the students.

4.2 Mail Interviews

This research also includes interviews with two teachers. Due to geographic distances these interviews were impossible to be done in person; therefore they have been conducted via email. The respondents are from two different age groups; young and old generation. The interviews included the presentation of the researcher and the research, the purpose of the interview, followed by the interview questions.

The first teacher is a 30 year junior teacher in the faculty of Business Applied Sciences in the University of Prishtina since 2003. The second teacher is a 60 year senior teacher in the Faculty of Education since 1980. The selection was made primarily because in the University of Prishtina, age of the teachers, affects their attitude toward technological solutions to enhance learning.
4.2.1 Educational domain
The first domain addressed in this mail interview is educational domain. Questions regarding pedagogical and ethical issues are included.

1. What do you consider as the main pedagogical challenges in e-learning systems?
   **Junior teacher:** I don’t see any crucial pedagogical challenges in adapting e-learning systems besides those of getting familiar with an appropriate IT setting.
   **Senior teacher:** Certainly there are challenges. In Kosovo is still present the idea of the teacher standing in front of the students, students talking notes, etc. Implementation of e-learning would change this, and completely learning style and new pedagogical approaches should be adopted.

2. What efforts would you be willing to take (in terms of time for training etc) in order to change your current style of teaching?
   **Junior teacher:** If I decide to change my style of teaching than I would be willing to undertake everything what is needed
   **Senior teacher:** First of all it is difficult for me to change the teaching style that I have used for 30 years. Actually the style of teaching has already changed with the university adopting bologna process, in terms of the year of studies, how the exams are organized, but the traditional teaching method is mainly present still.

3. Do you consider that e-learning system increases the possibilities for plagiarism?
   **Junior teacher:** I think that the issue of plagiarism depends on how the teacher manages the class and it is not related to whether the teacher uses on sight teaching or e-learning systems.
   **Senior teacher:** Of course it does. I think that with no direct supervision there will be forms of plagiarism. The e-learning increases the distance between teachers and students and thus potentially increases the possibility of plagiarism.

4.2.2 Technological domain
Another component that was included was the technology component. Since none of the teachers have had close encounter with eMesimi, the questions here are more general in nature.

4. What technology do you use in your teaching?
   **Junior teacher:** Personal lap top and LCD which I use for power point presentation, and most likely I will use them for presenting video clips related to the course
   **Senior teacher:** I don’t use any kind of technology, only in rare occasions I use overhead.

4.2.3 Organizational domain
Organizational domain addresses issues like needs assessment, return of investment, organizational change and management issues.
5. What would be your requirements for the e-learning system in order to offer your course online?

**Junior teacher:** A short training on IT field in order to get familiar with technological requirements of e-learning system.

**Senior teacher:** I don’t think that I can really answer to this question since I don’t think that I could be able to provide an online course.

6. Implementing e-learning requires a lot of investment from setting up the infrastructure to training staff and students for using it. Do you consider that if e-learning is to be implemented in the University level there would be a return of investment?

**Junior teacher:** I don’t know. The accurate answer in this question necessitates a comprehensive research. For more on this check my additional comment under question 12

**Senior teacher:** Maybe it would in the near future. Currently I don’t think that there would be a return of investment because it is difficult for me and also for my colleagues to start to use the technology, it would require a lot of training in the IT field, English language courses. Thus a lot of extra cost would be involved in implementing such systems, and I don’t see which would be clear benefits of it.

7. Are you ready for the organization changes that e-learning could bring?

**Junior teacher:** It depends what you imply with organization changes (structural, formal, informal…or teaching methods, interactions with students, grading and exams…) however if I apply e learning system than it is understandable that I will easily accept any “organizational change” and try to adopt as much as possible. So the answer is more or less YES

**Senior teacher:** It will definitively require an organizational change. Currently the “learning cycle” is comprised by teachers and students and this would be change with introduction of technology. And in my case, beside technology, the new “learning cycle” would involve IT personal as well.

8. Do you think that institution should organize a survey with both staff and students to evaluate their readiness for online learning?

**Junior teacher:** Absolutely YES. But before doing that, a proper explanation should be given to both staff and students on what is an in fact e-learning system and which are the pro’s and con’s of setting up this system. In this manner a survey could provide more reliable results.

**Senior teacher:** Yes. The institution should definitely conduct a survey with teachers and students. They should particularly explain thoroughly to the teaching staff what e-learning is because most of the teachers are not familiar with this concept.

9. What kind of support would you need for providing an online course?

**Junior teacher:** Potentially I would need a support from IT personnel, at least in the initial stages of the course.

**Senior teacher:** I can’t talk about the support needed since I don’t think that I could be able to provide an online course.
10. In your opinion, does the institution have adequate human resources to support the e-learning initiative?

**Junior teacher:** If your question is related to University of Prishtina than my answer is - PROBABLY NOT -. In case of the institution that I teach than the answer is DEFINITELY NOT. However I think that different faculties within UP have different capabilities to support the e-learning initiative.

**Senior teacher:** No, I don’t think that there are human resources to support this initiative. Maybe some faculties that are more oriented toward technology are able to support some online course, but in general I think that our university currently does not have resources to support such initiative.

11. Do you consider that teachers could manage courses themselves or there should be a special unit at the institutional level for managerial purposes?

**Junior teacher:** Good Question! Clearly it depends from the teacher itself, however an IT personnel (not necessarily entire unit) within particular faculty, should always be available.

**Senior teacher:** I think that if e-learning is to be implemented there should be staff available in order to help. In my particular case I would definitively need somebody else helping to manage an online course.

12. Can you suggest any other issues that need to be taken into consideration when implementing e-Learning in the University of Prishtina, which was not addressed in this mail interview?

**Junior teacher:** Implementing the e-learning in the University of Prishtina should be considered as particular project proposal. Therefore it should undergo in depth analyses within the Project Management framework. For example an appropriate feasibility study should be performed in order to study the benefits of it before the system is implemented. Teacher’s skills capabilities and resistance to change should also be taken into account. Most important without a doubt is the readiness of the student to accept this kind of learning and to see a benefit from it. Instead of running to implement something which is world trend, the contextual, cultural, professional (capabilities) and financial aspects should be analyzed previous to initiating any steps toward implementation.

**Senior teacher:** I think that in general implementing an e-learning system in University of Prishtina might be a positive initiative, but I think that in depth study should be made prior its implementation. Particularly having in mind the changes that this system would require from the staff and especially having in mind that over 65% of the University of Prishtina staff is over 55 years old.
5. Analysis

This section provides an analysis of the data collected using the questionnaire and mail interviews and relate them to the domains of the theoretical model. This analysis is based on the idea of correlation of students and teachers opinions about the issues represented in the model. The analysis includes three main sections such as: educational domain, technological domain and organizational domain.

5.1 Educational domain

In this section the analysis is focused on discussion of the pedagogical, ethical and evaluation issues. The students’ opinions might be affected by the existing e-learning system that they use, while the teachers’ opinion is not affected since none of them was using eMesimi. In students answers in the questionnaire there is a positive attitude toward e-learning in general and eMesimi in particular. This attitude can be verified in the highly positive answers in question about: eMesimi as a way for delivering materials (77% agreed, 22% agreed somewhat and only 1% disagreed). Even high percentage (88%) responded that they think that chat tutorial meetings were helpful.

When it comes to teachers there is a different picture. The junior teacher seems to have more open attitude toward the challenges that e-learning will present and is more willing to undergo eventual changes in teaching style. The senior teacher despite having a positive attitude in her answers there is a resistance toward eventual change. This is evident from the answer “First of all it is difficult for me to change the teaching style that I have used for 30 years...”.

When it comes to plagiarism there is a different situation. The students mainly agree (85%) that there is no plagiarism in the e-learning system while teachers have a different opinion. The junior teacher does not regard the technology as eventual catalyst for plagiarism. While the senior teacher thinks that the distance created by the technology usage increases the possibility for plagiarism. This disagreement between the answers of the teachers is mainly as a result of their attitudes toward technology; the senior teacher considers that technology creates the distance between them and students. This is described in her answer: “The e-learning increases the distance between teachers and students and thus potentially increases the possibility of plagiarism”. This could be expected because there is potential gap between junior and senior staff member usage of technology in learning. Also some students in an open question in the questionnaire suggested that only junior teaching staff is capable to actively use the e-learning system while with senior ones it is going to be extremely difficult.

An interesting answer was the one regarding the evaluation. Large majority of the students (87%) regarded the continuous examination used in eMesimi as a positive thing. Moreover, 60% regarded that possibility that their work is viewable by other students motivates them to try even harder. This shows that for the students e-learning system should have a continuous examination procedure because in this way they could even try to improve the final grade during the course. Please note that for most of the course in University of Prishtina there is only one examination seminar or exam in the end of the course. Based on that seminar/exam the final grade is decided.
5.2 Technological domain

Data collected from the questionnaire with students and mail interviews with teachers also addressed the technological domain described in the theoretical model. In this aspect issues regarding the technological infrastructure and interface design have been addressed. With students these questions are mainly related to the eMesimi case while with teachers are more oriented on their attitude towards the use of technology and their requirements concerning e-learning system.

In these answers it is clear that the students are positive towards e-learning system. Majority of them (77%) consider that setting up the computer was very easy. But on the contrary to this, majority of them (87%) thinks that institution should have an orientation program providing technical training before the course. This suggests that despite students having basic IT proficiency when it comes to performing learning activities they ask for official support from institution. Concerning the infrastructure, 80% of the students consider that minimum requirements for eMesimi can easily be matched. An interesting fact is when it comes to preferring audio over video lectures. In this question the answers were equally distributed (37% agreed to prefer audio over video lectures, 35% agreed to some extent while 28% disagree). This attitude potentially suggests that they perceive audio lectures to be more usable then video. This can be connected to their answers when it comes to internet speed and the Internet connection cost. Almost the same distribution of answers was in the question regarding the connection of the Internet speed with eMesimi usage to its fullest potential (37% agreed, 38% agreed to some extent and 25% disagreed). Similar distribution of answers was for Internet connection fees as disadvantage for eMesimi (30% agreed, 47% agreed to some extent and 23% disagreed). The interesting change is that email was considered as main tool for communication with teacher.

Regarding the usability of the current design of the eMesimi students were in general very positive. A reason for this positive attitude is mainly as a result that they didn’t have any prior experiences with similar e-learning systems. Therefore when it comes to interface design issues these data should be taken into consideration with caution.

Regarding teachers the situation is different and the questions mainly where related to their attitude toward use of technology. The thing that becomes evident is that age of the teacher affects their attitude toward usage of technology in teaching. The junior teacher seems to have more experience and used variety of tools in teaching. This is evident based on his answer: “Personal laptop and LCD which I use for power point presentation, and most likely I will use them for presenting video clips related to the course”. The senior teacher uses technology in very rare occasions. When it comes to requirements the junior teacher is willing to undergo training in order to get familiar with technology while the senior one has a skeptical stand toward technology enhanced learning. Overall with senior teachers it seems that there is a potential “resistance for change” when it comes to adopting and using technology enhanced learning. This potentially raises issues for management and the way how courses are organized.
5.3 Organizational domain

The organizational domain is the last domain of the theoretical model and was addressed with teachers’ mail interviews only. The issues that were discussed in this domain address problems related to institutional, resource support and management.

Regarding the investments needed for implementing the e-learning system teachers have different opinions. The junior teacher suggests a comprehensive research in the issue while the senior teacher emphasizes on the expenses and suggests that there is no clear benefits of e-learning systems. From both of these answers the common thing is the fact that there is a need for detailed investigation and clear presentation of the drawbacks and the benefits of e-learning to both staff and students.

When it comes to the organizational change that an e-learning system would present, there is an agreement between both teachers. The junior teacher regards this change as a part of adoption he would need to do while the senior teacher considers this change as more substantial as a change of the "learning cycle".

The issue of the resources was another topic raised in these interviews and both teachers agree that potentially there is a lack of resources when it comes to implementing such system. Teachers have different opinions regarding the resources for managing an online course. This could be explained from their IT proficiency level and their willingness for change.
6. Conclusion

In general the empirical data collected in this exploratory study represents an overview of the current situation among students and teachers when it comes to implementation of the e-learning system. The most evident patterns that could be identified from the data can be summarized as follows:

- Students in general are overwhelming in favor of implementing e-learning system.
- Teachers have a more careful opinion about such implementation.
- There is potential “resistance for change” among senior staff members.
- In-depth investigation is preferable before implementation of e-learning systems.

Combining these general patterns identified from analysis of empirical data with the theoretical model chosen, suggests that deployment and implementation of the e-learning system is a complex process. In this process issues from eight factors should definitively be taken into consideration. The eMesimi case that was initially considered in this thesis proved to be a starting point for an e-learning system, but the empirical data collected suggest that there is a lot to be improved and enhanced.

Research question 1: *What are the experiences of students using eMesimi in the University of Prishtina?*

This thesis showed that in general students expressed positively regarding their experiences with eMesimi. Inclusion of the communication tools like forums, online chats, browsing etc. into learning activities could be important for students’ fast and successful adoption to an e-learning system. Therefore this fact shows that potentially for future implementation of full scale e-learning system students would easily adapt.

Research question 2: *What is the opinion of teachers for applying e-learning system in the University of Prishtina?*

Regarding this question this thesis shows that there is a slightly different situation with teachers. It seems that a generation gap among the staff of the University of Prishtina might present a problem for implementation. This generation gap potentially affects the teachers’ attitude toward the new eventual e-learning system. Nevertheless both teachers that were interviewed show “positive neutrality” when it comes to introducing e-learning system but in some of the answers there was clear skepticism present. If this skepticism is not handled properly, it might easily lead toward “resistance for change” from the teachers. Especially this should be taken into consideration when dealing with senior teachers that comprise the majority of staff in the University of Prishtina.
6.1 Own Reflections

Writing this thesis was an interesting experience especially since I am a former student of the University of Prishtina. This research started by setting up the research questions, finding the appropriate theoretical model, applying exploratory research method, collection of empirical data, and finally closing with analysis the conclusion. Having in mind my previous experience as a student at the University of Prishtina in this section I will provide some own reflection upon this research.

By being familiar with infrastructure and teachers at the University of Prishtina I consider that e-learning system should establish procedures to enable teachers to convert their content into proper format for e-learning system. Moreover this was also suggested in a way by both teachers interviewed.

University of Prishtina as a public university in a post conflict country with vulnerable economy still lacks the basic technological infrastructure for learning. Some of its institutions still lack proper computer labs with internet connectivity. Therefore implementing a university network infrastructure with broadband internet is a prerequisite for successful implementation of an e-learning system. Lack of ICT (Information Communication Technology) infrastructure was reflected also in the technological proficiency of the teaching staff. With students it is a different situation especially because of the “internet culture” that currently exists among youth population in Kosova.

In order to ease the transition towards the e-learning system, there should be an appropriate pedagogical training with teachers. This training should focus on issues regarding the formulation and design of the assignments/exams for new learning environment, especially having in mind teachers’ skepticism regarding the ethical misconduct of students (mainly concerning plagiarism). This issue was evident in the answers of the senior teacher. Moreover in order to avoid the situations where the technology could potentially increase distance between teachers and students, e-learning system should include videoconference capabilities. This was also suggested by students’ in the questionnaire where 77% of them agreed that videoconference is a good way of providing learning materials.

Successful implementation of full scale e-learning system in the University of Prishtina will require a lot of resources for training and maintenance. Hence a detailed economical feasibility study for implementing an e-learning system will be needed, especially because most likely the supporting cost (staff training, maintenance etc.) will be more expensive then system implementation itself.

6.2 Future work

For future research it would be interesting to have feedback from students using different e-learning systems and being able to compare. The comparison of different e-learning systems would potentially provide a better insight regarding the interface design issues. Inclusion in the research of teachers who already have experience in the e-learning systems would be another interesting aspect for further investigation.
7. References


Appendix A – Questions of the questionnaire with students

EDUCATIONAL DOMAIN

PEDAGOGICAL FACTOR
Content provided
1. The content of the course is accurate compared to the relevant literature
2. The course content is regularly updated according to the curriculum
3. eMesimi is a good way of delivering course materials
4. Do you have an opinion about the teachers’ ability to use eMesimi in the future?...

Learning strategy
5. The chat tutorial meetings provided are helpful
6. The online discussion forums offered are effective for learning
7. Do you consider that sitting in front of the computer is more challenging than learning in the classroom?

ETHICAL FACTOR

Geographical diversity
8. Internet connection fees are a disadvantage for eMesimi

Etiquette
9. The course provides enough information on how to behave towards each other

Legal Issues
10. The course informs students about the consequences concerning any form of plagiarism
11. Prohibition of two exam sessions of the course is a fair punishment for plagiarism
12. You have experienced any form of cheating while having this online course
13. According to you what are the best ways to reduce cheating? ...

EVALUATION FACTOR

Quality of the learning content
14. The quality of the lectures provided through eMesimi fulfills the needs for knowledge in the respective domain

Students’ performance
15. The continuous examination used in eMesimi, offers motivation for you to work harder
16. Making your contribution on the assignments, forum posts etc, viewable by other students motivates you to try harder
17. You sometimes feel uncomfortable as other students can read your posts and assignments

18. Elaborate what you think needs to be improved in order to better fulfill your needs? …

TECHNOLOGICAL DOMAIN

TECHNOLOGY FACTOR
Technology Infrastructure
19. Setting up computers for using eMesimi platform is very easy
20. You think that the Institution should have an orientation program that provides technical training to students before starting the course
21. The registration instruction given to you have been adequate for you to complete the registration
22. The server where the eMesimi was hosted was available all the time when you needed to access it
23. The minimum requirements for using eMesimi can be easily matched by all the computers that you have access to
Hardware
24. The hardware requirements have been clearly stated in the beginning of the course
25. Offering videoconferencing lectures is a good way of providing educational materials
26. You prefer audio lectures compared to video
27. Internet speed presents a problem while using eMesimi to its fullest potential

Software
28. The course provides links to the necessary software needed to access all course content
29. The most often used communication tool with the teacher is:
   • Online chat
   • Email
   • Internal eMesimi messages
   • Forum posts
30. Can you envision other technological devices that could be included in eMesimi?...

INTERFACE DESIGNFACTOR
Page and site design
31. The page design of the eMesimi.org is attractive to use

Navigation
32. The way the course material is organized with topics headlines makes it easily to navigate
33. The search engine within the site is meeting your requirements

Accessibility
34. The login procedure in eMesimi is simple

Usability
35. The labeling system of eMesimi is clear
36. eMesimi uses an easy-to-understand terminology concerning learning resources and activities
37. The site is designed that you can easily get to a specific piece of content (in no more than 3 clicks)
38. What would you change in current design of eMesimi interface? …

39. Thank you for participating and please add here any comments regarding eMesimi you feel the questionnaire have not addressed:
Appendix B – Mail interview questions with teachers

EDUCATIONAL DOMAIN
PEDAGOGICAL FACTOR
1. What do you consider as the main pedagogical challenges in e-learning systems?
2. What efforts would you be willing to take (in terms of time for training etc) in order to change your current style of teaching?

ETHICAL FACTOR
Legal issues
3. Do you consider that e-learning system increases the possibilities for plagiarism?

TECHNOLOGICAL DOMAIN
TECHNOLOGY FACTOR
4. What technology do you use in your teaching?

ORGANIZATIONAL DOMAIN
INSTITUTIONAL FACTOR
Needs assessment
5. What would be your requirements for the e-learning system in order to offer your course online?

Return of investment
6. Implementing e-learning requires a lot of investment from setting up the infrastructure to training staff and students for using it. Do you consider that if e-learning is to be implemented in the University level there would be a return of investment?

Organizational change
7. Are you ready for the organization changes that e-learning could bring?

RESOURCE SUPPORT FACTOR
Online/Offline support
8. Do you think that institution should organize a survey with both staff and students to evaluate their readiness for online learning?

Support provided
9. What kind of support would you need for providing an online course?

MANAGEMENT FACTOR
Human resources
10. In your opinion, does the institution have adequate human resources to support the e-learning initiative?

Management team
11. Do you consider that teachers could manage courses themselves or there should be a special unit at the institutional level for managerial purposes?

12. Can you suggest any other issues that need to be taken into consideration when implementing e-Learning in the University of Prishtina, which was not addressed in this mail interview?