INTERNATIONAL EDUCATIONAL TECHNOLOGY CONFERENCE

# 10th INTERNATIONAL EDUCATIONAL TECHNOLOGY CONFERENCE

## Proceedings Book
## (Volume II)

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# Acknowledgement

Dear Guests…

Welcome to the 10th International Educational Technology Conference IETC-2010.

"The International Educational Technology Conference (IETC)" series is an international educational activity for academics, teachers and educators. This conference is now a well known educational technology event and the number of paper submissions and attendees increase every year. It promotes the development and dissemination of theoretical knowledge, conceptual research, and professional knowledge through conference activities, the conference proceeding book, and the Turkish Online Journal of Educational Technology (TOJET). Its focus is to create and disseminate knowledge about the use of instructional technology for learning and teaching in education. This year, IETC-2010 received almost 700 applications. The conference academic advisory board accepted 350 applications.

The first of "The International Educational Technology Symposium (IETS)" and the second of "The International Educational Technology Symposium (IETS)" were held at Sakarya University in Turkey in 2001 and 2002. The third one was at Eastern Mediterranean University in the Turkish Republic of Northern Cyprus in 2003, and the fourth one at Sakarya University in Turkey in 2004. The fifth International Educational Technology Conference (IETC) was organized at Sakarya University in Turkey in 2005.The Sixth International Educational Technology conference was held in Turkish Republic of Northern Cyprus. In 2007, the seventh conference was organized at Near East University in the Turkish Republic of Northern Cyprus. After then The 8th International Educational Technology Conference was held at Anadolu University in Turkey in 2008. The 9th International Educational Technology Conference was organized at Hacettepe University in Turkey in 2009. IETC-2010 conference is organized at Bogazici University in 2010. IETC-2011 will be organized at Istanbul University in 2011.

The International Educational Technology Conference aims to diffuse the knowledge and researches among academicians and lead to development in educational technology and instructional technologies.

Without the authors and participants, IETC-2010 would, of course, have been impossible. We would like to sincerely thank all of you for coming, presenting, and joining in the academic activities. We would also like to thank all of those who contributed to the reviewing process of the "IETC - 2010" conference papers, which will be also published in TOJET. And finally, we would like to thank Sakarya University, Bogazici University, organizing team and The Turkish Online Journal of Educational Technology (TOJET) for successfully organizing and hosting "IETC-2010" in Istanbul, Turkey.

We have lots of participants from 19 different countries. These countries are Algeria, Argentina, Australia, Croatia, Cyprus, Georgia, Greece, Hungary, Iran, Italy, Japan, Lithuania, Malaysia, Netherlands, Nigeria, Portugal, Romania, Serbia, Slovakia, Slovenia, South Korea, Spain, Taiwan, The Former Yugoslav Republic of Macedonia, Turkey, Turkish Republic of Northern Cyprus, United Arab Emirates and United States.

Should you have any enquiries regarding IETC conference, please do not hesitate to contact with us for any additional information you may require.

Finally, we would like to wish you all a pleasant stay in Istanbul-Turkey and safe return back home. I hope that IETC-2010 will be a meeting you will pleasantly remember.

I hope we will meet again at the 11th International Educational Technology Conference - IETC-2011.

Thank you...

Prof. Dr. Aytekin İŞMAN

General Coordinator & Founder of IETC

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# PROPER USAGE OF THE TERMS: LMS, CMS and LCMS

**Mutlu Tahsin ÜSTÜNDAĞ [1], Erhan GÜNEŞ [2], Erinç KARATAŞ [3], Serçin KARATAŞ [4], Ebru KILIÇ ÇAKMAK [5], Serdar ÇİFTCİ [6]**

[1] Araş. Gör. Gazi Üni. Gazi Eğitim Fakültesi, Bilgisayar ve Öğretim Tek. Eğitimi, *mutlutahsin@gazi.edu.tr*

[2] Öğr.Gör. Ahi Evran Üni., Mucur MYO, Bilgisayar Programcılığı, *erhan@ahievran.edu.tr*

[3] Okutman Ankara Üni., Uzaktan Eğitim Merkezi, *erinc.karatas@ankara.edu.tr*

[4] Yrd.Doç.Dr. Gazi Üni. Gazi Eğitim Fakültesi, Bilgisayar ve Öğretim Tek. Eğitimi, *sercin@gazi.edu.tr*

[5] Yrd.Doç.Dr. Gazi Üni. Gazi Eğitim Fakültesi, Bilgisayar ve Öğretim Tek. Eğitimi, *ekilic@gazi.edu.tr*

[6] Uzm. Gazi Üni. Bilgi İşlem Dairesi Başkanlığı, *serdar@gazi.edu.tr*

**Abstract**

It is obvious that there is a confusion related with the usages and meanings of Learning Management System (LMS), Content Management System (CMS) and Learning Content Management System (LCMS) terms, which provide distance education processes to be performed, in the literature in Turkey. In this study, it was aimed to present what these terms mean and to point out the differences between them. Survey method and descriptive statistics were used to gather and analyze data. Totally 48 research studies were reached from The Council of Higher Education Dissertation Abstracts Database, Google Scholar and International Educational Technology Conference (IETC) web site. This study was planned to help clarifying the terms for researches, designers, programmers and institutions, which develop or use these systems.

*Keywords:* Learning Management System, Learning Content Management System, Content Management System

## INTRODUCTION

Many of the developed countries have been referring to e-learning in order to fulfill educational demands of their citizens for years. In this context, The Council of Higher Education allowed universities to establish distance education programs by publishing new regulations, in Turkey (Official Gazette, 14 December 1999).

Anadolu University, Sakarya University, Ahmet Yesevi University, Ankara University, and Gazi University can be accepted as leader universities which have been providing e-learning solutions and have been giving associate degree, undergraduate degree and graduate degree diplomas by this way. Also Mersin University, Maltepe University and Süleyman Demirel University are examples for universities having distance education associate degree programs in Turkey. The number of this kind of universities is increasing day by day. Today, there is a growing demand for undergraduate and graduate distance education programs. In addition, in some universities, some courses are given using web based learning environments. For example, Bilkent University has developed an LMS (Learning Management System) in cooperation with Meteksan Sistem Inc. for this purpose. In the development process, manager, teacher and student roles have been mainly taken into consideration. This system includes course plan, resources, course content, homework, notebook, student list, portfolio, blackboard, messages, announcements, chat room and WebQuest sections for learners and teachers (Şengür, 2006). Other universities, mentioned above, also use LMS for distance education. Some of them develop their own LMS and some other buy LMS from different software companies.

An e-learning model consists of some complex and interrelated processes such as course content development, delivery of the content, presentation, evaluation, providing interactions (student-student, student-teacher, student-content and student-interface) and students' learning. It seems to be easy at first glance, however these processes must be systematically planned, implemented and managed to increase the effectiveness of e-learning. Within this plan, managerial decisions about the subjects like course design, technology and learning management must be effective and efficient (Girginer, 2002). For this reason, there is a need for management systems, with a serious groundwork, in order to manage the processes mentioned above.

The term "LMS" is known to be related with CMS (Content Management System) and/or LCMS (Learning Content Management System). For this reason, it can frequently be seen in the literature that they are consciously or unconsciously used together or interchangeably. It is obvious that there is confusion about the usages and meanings of the terms; LMS (Learning Management System), CMS and LCMS, which provide e-learning processes to be performed, in the literature. For example in a thesis in Turkey, *Learning Management System* has been written in the title of the research, on the other hand, there is a keyword of *Education Management System*. Furthermore, you can see a term like *Instruction Management System* inside of the same thesis. Also it can be easily realized that such concepts have not been defined correctly and they have been misused.

In this study, it is tended to clarify what the terms; LMS, CMS, LCMS and some other, which have been being used sometimes instead of these terms and sometimes for different meanings, really stand for and what kind of differences there are between them.

It is seen that, abbreviations of these terms in Turkish and English are widely used in research reports. There is also confusion about the usage of them. For example; Moodle, which is a widely used open source system, defines itself as a CMS *(Course Management System)*, but this abbreviation (CMS) is widely known as *Content Management System.* In addition, in the official web site of Moodle, Moodle is defined as a CMS and also an LMS or a VLE (Virtual Learning Environment).

As mentioned above, at first glance, a confusion of the usages of these terms can be realized in the literature in Turkey. The problem of this research was stated as "Are we using the terms (LMS, CMS and LCMS) properly or not?". This study was planned to help clarifying the terms for researches, designers, programmers and institutions, which develop or use these systems.

## METHOD

In this study, survey method and descriptive statistics were used to gather and analyze data. The Council of Higher Education Dissertation Abstracts Database was scanned using the keywords; LMS, CMS and LCMS and 7 theses were reached. Google Scholar was used to make a scanning with the same keywords and a total number of 25 researches, containing articles and conference papers, were reached. In addition, 10 related conference papers were reached from International Educational Technology Conference (IETC) web site. By this way, totally 42 research studies were collected to be examined. These research studies were examined using a "review form", which was developed by the researchers, in terms of appropriateness of usage the terms (LMS, CMS and LCMS).

### Data Gathering Tools

A "review form" was developed by the researchers, with the help of subject matter experts, in order to examine the collected research studies. This review form was based on generally accepted definitions of the terms. This form was applied on each research study. The review form is given in Table 1.

**Table 1. Review Form**

| Questions | LMS (Learning Management System) | | CMS (Content Management System) | | LCMS (Learning Content Management System) | | Other | |
|---|---|---|---|---|---|---|---|---|
| 1. Which terms are used in the study? | | | | | | | | |
| 2. Is it / Are they used compatible with terms defined as in this study? | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | |
| 3. Are there different definitions for the terms? | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | |
| 4. Were inessential synonymous terms used in the researches? | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | |

Generally accepted definitions of the terms LMS, CMS and LCMS are given in Table 2.

**Table 2. Definitions**

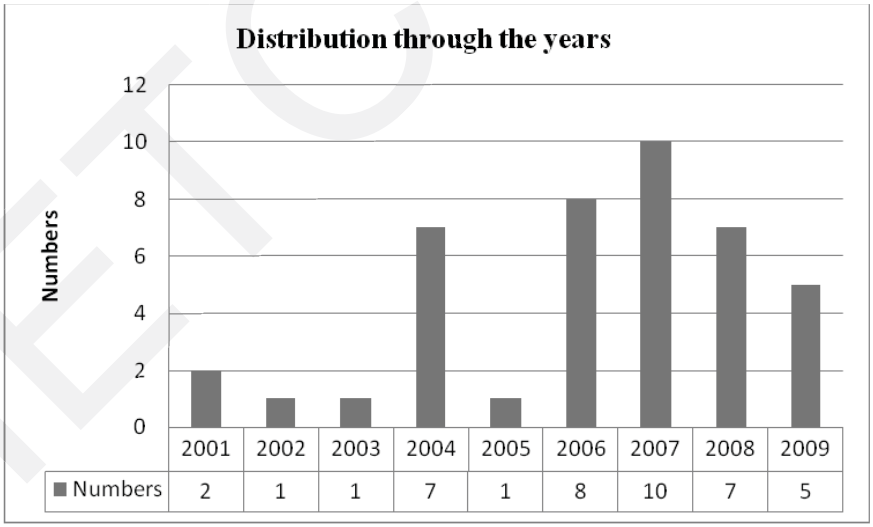
| Term | Definition |
|---|---|
| Learning Management System (LMS) | *A Learning Management System, or LMS, is software that automates the administration of training events. All LMSs manage the log-in and registration of users, manage course catalogs, record data from learners, and provide reports to management. There used to be a distinction between learning management systems and more powerful "integrated" learning management systems. That distinction has now disappeared. The term learning management system is now used to describe a wide range of applications that track student training and may or may not include functions such as* (Hall, 2009):<br>• *Authoring*<br>• *Classroom management*<br>• *Competency management*<br>• *Knowledge management*<br>• *Certification or compliance training*<br>• *Personalization*<br>• *Mentoring*<br>• *Chat*<br>• *Discussion boards* |
| Learning Content Management System (LCMS) | *"LCMSs are structured environments that are specifically designed to help organizations implement better processes and practices as they create an unlimited number of e-learning courses. They make* ***creating content more efficient****, help users avoid redundancy, and help organizations manage the people – professional developers, subject matter experts, or novices – who are creating the content"* (Hall, 2010). |

| | |
|---|---|
| | *"A Learning Content Management System, or LCMS, is an environment where developers can create, store, reuse, manage, and deliver learning content from a central object repository, usually a database. LCMSs generally work with content that is based on a learning object model. These systems usually have good search capabilities, allowing developers to quickly find the text or media needed to build training content. Learning content management systems often strive to achieve a separation of content – which is often tagged in XML – from presentation. This allows many LCMSs to publish to a wide range of formats, platforms, or devices such as print, Web, and even wireless information devices (WID) such as Palm and Windows CE hand-helds, all from the same source material"* (Hall, 2009). |
| Content Management Systems (CMS) | "*Content Management Systems (CMS) are used to store and subsequently find and retrieve large amounts of data. CMSs work by indexing text, audio clips, images, etc., within a database. In addition, CMSs often provide version control and check-in/check out capabilities. Using robust, built-in search capabilities, users can quickly find a piece of content from within a database by typing in keywords, the date the element was created, the name of the author, or other search criteria. Content management systems are often used to create information portals for organizations and can serve as the foundation for the practice of knowledge management. They can also be used to organize documents and media assets. For example, a newspaper agency may use a content management system to provide an archive of every story ever written for the paper. Likewise, they might use the CMS to provide an extensive library of photographs that are reusable for future stories*" (Hall, 2009). |

## RESULTS

The graphic of examined research papers' distribution through the years was given in Figure 1.

**Figure 1. The Graphic of Examined Research Papers' Distribution Through the Years**




According to research papers' distribution through years, it is obvious that there is an increase in the number of researches related to the subject in last four years. Number of research papers written in last four years comprises %71.43 of research papers of last 9 years. This ratio indicates that there is a growing interest in this subject.

Classifications of the examined research papers according to language and publication type are given in Table 3.

**Table 3. Classifications of the Examined Research Papers According to Language and Publication Type**

| | Publication Type | | | | |
|---|---|---|---|---|---|
| **Language** | **Thesis** | **Conference Paper** | **Article** | **Total** | **Percent (%)** |
| **Turkish** | 6 | 25 | 5 | 36 | 86 |
| **English** | 1 | 2 | 3 | 6 | 14 |
| **Total** | 7 (%17) | 27 (%64) | 8 (%19) | 42 (%100) | 100 |

%86 of the research papers were published in Turkish and the rest (%14) in English. Additionally, %17 of them are theses, %64 of them are conference papers and the rest (%19) are articles.

Answers to the 2nd, 3rd and 4th questions of the review form, according to Table 1, were given in Table 4.

**Table 4. Answers to the 2nd, 3rd and 4th Questions of the Review Form**

| **Questions** | **LMS** (Learning Management System) | | **CMS** (Content Management System) | | **LCMS** (Learning Content Management System) | | **Other** | |
|---|---|---|---|---|---|---|---|---|
| Is it / Are they used compatible with terms defined as in this study? | Y | N | Y | N | Y | N | Y | N |
| | 14 | 10 | 11 | 4 | 2 | 0 | 2 | 6 |
| Are there different definitions for the terms? | 17 | | 9 | | 2 | | 3 | |
| Were inessential synonymous terms used in the researches? | Y | N | Y | N | Y | N | Y | N |
| | 5 | 19 | 0 | 15 | 1 | 1 | 3 | 5 |

This research investigated the usage of the terms; LMS, CMS, LCMS and other related ones, in e-learning literature in Turkey. In 42 research papers, one or more of these terms were mentioned totally 49 times. 20 of the terms (%40.82) were found to be used in a different way when compared with the meanings, which are accepted in this study. Consequently, it can be concluded that there is a confusion related with the usage of these terms. In this context, it is important for researches to be aware of differences between these terms in order to overcome this confusion. This confusion is mainly caused by varying Turkish equivalents of the terms. For example; LMS (in 5 research papers), LCMS (once) and others (in 3 research papers) were seen to be called with different abbreviations or names but in the same meanings. In addition, in %18.37 of the examined research papers, same terms could be seen to be used in different names. Furthermore, researchers found 17 different definitions for LMS, 9 for CMS, 2 for LCMS and 3 for other terms within the research papers.

This study tended to place emphasis on awareness of the meanings of the terms, mentioned above, with their differences and similarities. Also, generally accepted and widely used definitions of the terms LMS, CMS, LCMS were given. By this way, the study was planned to be a guide for researches, designers, programmers and institutions, which develop or use these systems.

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# PSYCHOLOGICAL GUIDANCE AND COUNSELING STUDENTS' PERCEPTIONS ON STUDENT CENTERED EDUCATION

Canan Perkan Zeki, Sibel Dinçyürek, Bengi Sonyel, Hamit Caner, Hasan Eriş
Eastern Mediterranean University
canan.perkan@emu.edu.tr sibel.dıncyurek@emu.edu.tr bengi.sonyel@emu.edu.tr hamit.caner@emu.edu.tr hasan.eris@emu.edu.tr

The aim of this study is to examine the perceptions of PGC (psychological guidance and counseling) students on student centered education. Cooperative and discovery learning were used as strategies and literature review, analysis, case study, discussion, reporting were used as techniques in order to facilitate the learning process as student centered. Students were asked to write weekly reflective reports as a part of their assessment. These reflective reports as well as semi-structured interviews were used as data collection tools to determine students' perceptions on the effectiveness of student centered education. Content analysis was carried out in the form of coding categorizing and labeling the primary occurring themes. The findings have shown that applying student centered education in class have improved students cognitive and affective skills. Besides in order to apply this approach efficiently, infra-structure of the course needs to be designed accordingly and student needs must be taken into consideration.

## INTRODUCTION

The purpose of this study is to examine the perceptions of PGC (psychological guidance and counseling) students on student centered education. In this respect, the research focuses on the following research question:

- How do the PGC students enrolled into student centered education course perceive the student centered approaches adopted during this course?

In this changing era, needs of all sorts have also changed. The existing approaches and strategies used in teacher centered education have not been sufficient in training the novice teachers with the essential attributes and qualifications. In other words, the paradigm shift away from teaching to an emphasis on learning has encouraged power to be moved from the teacher to the student (Barr and Tagg, 1995). The teacher focus, transmission of information formats such as lecturing have begun to be increasingly criticized and this has paved the way for a wide spread growth of student centered learning as an alternative approach to others.
Kember (1997) viewed student centered learning as knowledge which is constructed by students during which the lecturer is a facilitator of learning rather than a presenter of information. On the other hand, Harden and Crosby (2000) emphasize 'learning by doing' aspect of student centered education focusing on what students do to gain knowledge rather than what the teacher does. Other authors (Lea.et.al. , 2003; Gibbs, 1995; Brandes and Ginnis, 1986;) present the main principles of student centered learning as :

- The reliance on active rather than passive learning
- An emphasis on deep learning and understanding
- Increased responsibility and accountability on the part of the student
- An increased sense of autonomy in the learner
- An interdependence between teacher and learner
- Mutual respect within the learner teacher relationship
- A reflexive approach to the teaching and learning process on the part of both teacher and learner
- The necessity of involvement and participation for learning
- Teacher as a facilitator and a resource person
- Learner experiences confluence in his/her education (affective and cognitive domains flow together)

Theoretically, student centered learning is considered to be associated with cognitive (Piaget) and social constructivism (Vygotsky cited in Santrock, 2001) as a result of the importance it places on active learning, discovery and independent learning as well as cooperative learning. Student centered teaching methods shift the focus of activity from the teacher to the learners. These methods include active learning, in which students solve problems, answer questions, discuss, explain, debate or brain storm during class; cooperative learning, in which students work in teams on problems and projects under conditions that assure both positive interdependence and individual accountability and inductive teaching and learning during which inquiry based learning, case based instruction, problem based learning, project based learning, discovery learning and just in time teaching. Student centered methods have continuously been regarded to be superior to the traditional teacher centered approach to instruction, a conclusion that applies whether the assessed outcome is short-term mastery, long-term retention, or depth of understanding of course material, acquisition of critical thinking or creative problem solving skills, formation of positive attitudes towards the subject being taught, or level of confidence in knowledge or skills (Felder, R.M. downloaded in 2010).

## METHODS AND PROCEDURES

This study adopted a qualitative research method. Qualitative data was collected during the first 8 weeks of 2009-2010 Spring-Semester in two of the student centered education classes at Eastern Mediterranean University. 96 PGC fourth year university students who are enrolled into these two groups were adopted as the participants of the study.

**Data Collection Instrument:**

Students were assigned to write once a week "reflective journal' on the effectiveness of the approaches, methods and techniques which were used as teaching-learning strategies for this elective course. Students were not guided in any way regarding the content of the journals. Students were given the freedom to report and reflect on any of the issue(s) or incident(s) they find worthwhile or significant indicating why those issues were significant and critical for them. Students reported their weekly journals via email to the course instructor within two days of the class time. During the lessons active/discovery learning, cooperative learning and inductive learning were used as methods of instruction; team work, group work, brainstorming, question-answer, discussion, debate, case study analysis, project based research and one to one conferencing were also used as teaching techniques. During this process, the students were expected to reflect their perceptions on the student centered approaches used. The

goal was to develop student awareness on perceiving what happened, why it happened and what it led to in the student centered education course (Amulya, 2004).

In addition to reflective journals, semi-structured interviews (Patton 2002) with randomly selected 9 students were carried out to triangulate the data collected through journals in order to have an in-depth interpretation of students' perceptions on student centered education.

Documents were used as the source of data which is a suitable instrument for qualitative research. Creswell (2003) indicated that documents enable a researcher to obtain the language and words of participants and can be accessed at a time convenient to the researcher – an unobtrusive source of information. It represents data that are thoughtful, in that participants have given attention to compiling it.

**Data Analysis:**

Content analysis was used to analyse the qualitative data gathered from the reflective journals and transcribed semi-structured interviews. Content analysis involves identifying, coding, categorizing, classifying and labelling the primary patterns/occurring themes in the data (Miles and Huberman, 1994; Patton, 2002). While doing the analysis, Kvale's (1996) 'Meaning condensation' and 'Meaning categorization' approaches and Creswell's (2003) 6 step generic process of data analysis were also adopted.

**Trustworthiness:**

Triangulation, peer debriefing, inter-rating and inter-coding, audit trial were applied to ensure the trustworthiness of the data collection and data analysis procedure, therefore of the credibility of the study.

## RESULTS

Data from the reflective journals and semi-structured interviews revealed three major categories based on the research question as follows:

**Category 1: Students' perceptions regarding the cognitive skills they have developed during this process**

**Theme 1:** Improvement of higher order thinking skills

Out of 96 students, 73 of them reported that having a student centered teaching approach contributed to the improvement of their higher order thinking skills such as critical thinking, reflective thinking, problem solving, self evaluation skills, questioning skills, and decision-making skills. For example, S7 said that:

> *"Group work and reporting activities improved my reflective thinking skills since it motivated us to ask many questions to each other and listen to multiple perspectives related to the same topic. This also helped me think deeper on the subjects taught and be an active participant in the activities."*

The following quotation from S15 exemplifies how decision making skills of the students improved:

> *"It was difficult to come to a consensus on the topic we were studying as a group because everyone shared his/her own ideas about the topic so there were a lot of various comments. However, brain storming on the topic and having continuous discussions enabled us to draw out common points on the issue we were discussing and rich to conclusion."*

**Theme 2:** Perception of knowledge formation

Out of 96 students, 70 of them reported that having a student centered teaching approach contributed to the development of their knowledge formation in the following ways as: Building up knowledge on the existing knowledge, reinforcing the existing knowledge, producing new knowledge, implementing newly acquired knowledge, gaining scientific inquiry skills.

S22 said that:

> *"The activities we had in class helped me build up knowledge on my existing knowledge, reinforced my current knowledge, produce new knowledge and also apply this new knowledge into practice.*"

**Theme 3:** Learning how to learn

Out of 96 students, 65 of them reported that having a student centered teaching approach helped them learn how to learn though providing them with opportunities for learning by doing, developing self autonomous skills, developing self responsibility skills, independent learning through discovering knowledge. S30 stated that:

> *"Everything I learnt was through doing, experiencing, discovering, commenting and constructing knowledge by synthesizing. Whatever we constructed or formed up, we learned it on our own by questioning the purpose of it and the reasons behind it without memorizing."*

**Category 2: Students' perceptions regarding the affective skills they have developed during this process**

**Theme 1:** Perception of self concept

Out of 96 students, 63 of them reported that having a student centered teaching approach helped them perceive themselves positively in terms of self confidence, self efficacy and self esteem. S55 said that:

> *"The role that our instructor adopted during the activities was in line with student centered teaching approach. First of all, a secure class atmosphere was established between the teacher and students. The teacher communicated us that we were valuable by listening to our ideas very carefully and also building up equal opportunities for every single of us."*

**Theme 2:** Formation of positive attitudes towards learning

Out of 96 students, 60 of them reported that having a student centered teaching approach helped them develop democratic behavioral skills, communication skills, share knowledge skills, develop specifically oral use of language skills (self expression skills), labour division skills, be intrinsically motivated towards the course being taught and learning, build up empathy skills. S70 expressed that:

> *"We were able to express our ideas without worrying about being criticized because there was a relax atmosphere conducive to communication. Every single thought of us was considered as a valuable attempt for learning by our teacher. So, has stimulated us towards learning. I believe this is the most important intrinsic motivation for me. "*

**Category 3: Students' perceptions regarding the critique of the student centered education course in terms of its drawbacks**
**Theme 1:** Insufficiency of the infra-structure of the course

Out of 96 students, 60 of them reported that during the implementation of student centered teaching approach there were lack of technological support, lack of suitable physical classroom environment, disadvantage of having crowded classes, lack of equal opportunities in dealing with students individually, disadvantage of the number of group members in group works, disadvantage of the period of the lesson scheduled. For instance S88 said that:

> *"In this course, the classroom was not efficiently equipped in terms of technology, seating arrangement, number of students etc. There has to be fewer students and setting for conducting group work activities should be appropriate in order to be able to apply methods and techniques convenient for student centered education."*

**Theme 2: Underestimating student needs**

Out of 96 students, 58 of them reported that during the implementation of student centered teaching approach there was a lack of the concept of students having choice in their learning. S75 said that:

> *"Since the class was crowded and also in group works the number of group members was high, the teaching/learning process was not individualized as it was expected. One to one interaction with students and providing equal opportunities was not sufficient enough."*

## CONCLUSION

This research has shown that using student centered teaching approach, is significant in developing students' cognitive skills such as their higher order thinking skills, knowledge formation, learning how to learn; all of which provide an emphasis on deep learning and understanding and an increased sense of autonomy in the learner as suggested by Lea.et.al. , 2003; Gibbs, 1995; Brandes and Ginnis, 1986.
Moreover, it can be concluded that student centered education as an approach has an important effect on the development of students' affective skills such as perception of self concept and formation of positive attitudes towards learning as emphasized by Rogers 1983, and Maslow 1998. Cruickshank (2003) also stressed that having good feelings about oneself is essential to positive personal development and this may enhance academic achievement. Therefore, engendering in students a sense of self confidence, self worth and efficacy might have positive influence in academic achievement. Failure to meet these needs will have a negative impact on learning (Deci and Ryan, 1990).
In order to apply student centered teaching approach efficiently, there certain technological and physical conditions which must be met to provide a sufficient infra-structure for the course as follows:

- Convenient technological support (Işman, 2005)
- Suitable physical classroom environment with portable chairs
- Class size
- Students individual choices should be met by the teacher
- Equal opportunities during discussions should be satisfied

Briefly, in order to provide depth of understanding of course material, acquisition of critical thinking or creative problem solving skills, formation of positive attitudes towards the subject being taught, or level of confidence in knowledge or skills, integrating a student centered education approach in both our curricula and teaching becomes essential.

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