IMPACT OF LEARNER-CENTERED TEACHING AND LEARNING PROCESS ON PRE-ADVANCED FIRST YEAR MEDICAL STUDENTS' PERFORMANCE, ATTITUDES, AND RETENTION IN MEDICAL ENGLISH

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Approval of the Graduate School of Social Sciences

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This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Doctor of Philosophy.

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ABSTRACT

IMPACT OF LEARNER-CENTERED TEACHING AND LEARNING PROCESS ON PRE-ADVANCED FIRST YEAR MEDICAL STUDENTS' PERFORMANCE, ATTITUDES, AND RETENTION IN MEDICAL ENGLISH

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This study examined the impact of learner-centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English through a pre-test/post-test experimental research design.

The sample of this study included 180 first year medical students of a state medical university, Gazi University, Medical Faculty, Ankara, Turkey. The subjects were assigned to experimental and control groups. Before the experiment, an achievement test and an attitude test were given as pre-test to both groups. The subjects in the control group (n=90) continued with traditional instruction while the subjects in the experimental group (n=90) studied using the learner-centered instruction. The treatment lasted 14 weeks. At the end of the treatment, the same achievement and the attitude tests were given as post-tests. One month after the post-test, the same achievement test was given to both groups as retention test.

The post-test results of the study indicate no statistically significant difference between the control and experimental groups immediately after the experiment. However, retention test results show significant difference between the two groups in favor of the experimental group. The attitude post-test results

toward the experimental instruction show significant difference between the two groups in favor of the experimental group as well.
Keywords: Learner-centered approach, medical English, medical education.

ÖZ

ÖĞRENCİ MERKEZLİ ÖĞRETİMİN BİRİNCİ SINIF TIP ÖĞRENCİLERİNİN TIBBİ İNGİLİZCE PERFORMANSINA, TUTUMUNA VE KALICILIĞA ETKİSİ

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Bu çalışmada tıbbi ingilizcenin pre-advanced birinci sınıf tıp öğrencilerinin performansı, başarı ve kalıcılığı üzerine öcrenci merkezli eğitim ve öğrenmenin etkisi ön-test/son test deneysel araştırma deseni yoluyla incelenmiştir.

Bu çalışmanın örneklemini, Ankara'daki Gazi Üniversitesi Tıp Fakültesi'nin 180 birinci sınıf öğrencisi oluşturmaktadır. Deneyden önce her iki gruba da başarı ve tutum testleri verilmiştir. Kontrol grubunda (n=90) geleneksel eğitim, deney grubunda (n=90) öğrenci merkezli eğitim verilmiştir. Uygulama 14 hafta sürmüştür. Uygulamanın sonunda aynı başarı ve tutum testleri her iki gruba da son-test olarak verilmiştir. Son testten bir ay sonra, kazanılan bilgilerin kalıcılığını ölçmek amacı ile aynı başarı testi her iki gruba tekrar uygulanmıştır.

Son-test sonuçlarından elde edilen bulgular kontrol ve deney grupları arasında anlamlı bir fark olmadığını göstermiştir. Bununla birlikte kalıcılık test sonuçları deney grubunun lehine anlamlı farklar olduğunu göstermiştir. Tutum son-test sonuçları da iki grup arasında deneysel eğitime doğru önemli farklar olduğunu göstermiştir.

Anahtar Kelimeler: Öğrenci-merkezli yaklaşım, tıbbi İngilizce, tıp eğitimi.

To My Family

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LIST OF ABBREVIATIONS

ESP = English for Specific Purposes

ESM = English for Students of Medicine

EMP= English for Medical Purposes

LCE= Learner-Centered Education

NIP= Non-Interface Position

L2= Second Language

TUMS= Tehran University of Medical Sciences

EFL= English as a Foreign Language

EST= English for Science and Technology

CLT= Communicative Language Teaching

APA= American Psychological Association

L1= Native Language

ME= Medical English

Level A=Advanced

ECST= English Curriculum for Science and Technology

SPSS= Statistical Package for Social Sciences

ICT= Information and Communications Technology

CS/DB= Case Study/Discussion Board

NCME= National Comprehensive Examination for Medical Students

VARK= Visual, Auditory, Read-write, Kinesthetic

TUS= Tıpta Uzmanlık Sınavı

USMLE= United States Medical License Examination

EGP= English for General Purposes

CHAPTER I

INTRODUCTION

This study aims to examine the impact of learner-centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English. This chapter starts by providing a brief background of course design approaches, ESP (English for Specific Purposes), ESM (English for Students of Medicine), learner-centered education, and continues by presenting relevant studies in the field of medical English courses. The first chapter concludes by addressing the research questions and significance that guided the entire research study.

1.1. Background to the Study

English language is one of the most commonly used languages throughout the world today. It has become the main medium of international communication in many non-English speaking countries. Accordingly, the need of teaching and learning English as a foreign language in many countries has been identified. Therefore, it has become a medium of communication in many educational institutions to satisfy the fast growing need for English as a foreign language to achieve communication both in daily life and in the field of professional careers (Crystal, 1997). Based on these needs, universities aim to provide learners with opportunities to be better equipped with essential and specific language programs to carry out their academic studies more effectively and meet the constantly changing demand of their profession more satisfactorily even after they graduate.

English for Medical Purposes (EMP) to most English teachers generally reflects some features which are identified as "typical" of a particular context of use or a special form of the language and different in kind from other forms. It is regarded as a matter of teaching specialized varieties of English–science words

and grammar, and therefore, EMP is treated as a particular language and taught in a particular way. In teaching medical English, teachers usually highlight its features of formal terms like passive voice and present tense in addition to a special vocabulary. Medical English class in this way is handled merely as exemplification of the language forms and grammar rules.

General English instruction has in most cases proved to be inadequate as a preparation for the language which students are required to make use of when they enter their profession. “The student’s failure in using language is” as Widdowson (1979) points out, “not so much form a defective knowledge of the system of English, but from unfamiliarity with English use.” EMP teaching in this sense should reveal its character as communication, that is, empower students to interact freely with others, to understand what others wish to communicate on the broadest sense, and to convey to others what they wish to share. Given these priorities, the activities such as problem-solving learning, teacher-student teamwork, independent learning, and group work offer teachers in medical English some aid in a communication learning process.

As with most developments in human activity, an enormous expansion in science, technology and economy has led to the rise of EMP. EMP is an approach subject to the wishes, needs, and demands of the learner that the courses should be functional and of immediate and tangible benefit to students. The objective of the class is to find out ways that aims at developing skills and ability to use language in the performance of different communicative acts. If a teacher focuses on a learner-centered instruction which steps up motivation of students, fosters purposeful learning, the class can produce a lot of opportunities for students to enhance their language competence and practice their independent thinking.

There has been a prominent shift within the field of language learning and teaching over the last twenty years with greater emphasis being put on learners and learning rather than on teachers and teaching. In parallel to this new shift of interest, how learners process new information and what kind of strategies they employ to understand, learn or remember the information has been the primary concern of the researchers dealing with the area of foreign language learning and teaching. Different steps in designing a course regarding language teaching have been proposed in different forms varying from simpler guidelines to detailed

ones. There is no “universally agreed upon” program design model as there is no such method or syllabus design (Yalden, 1987, p. 108). A concise summary of program design models might be suitably to say that language teaching programs work on two interdependent routes as what to teach (content) and how to teach it (method). In cases where selection and organization of content gains priority, greater importance is given to the definition of language material selected and organized around an analysis of goals, needs, available resources and restrictions. The methodology is usually eclectic and chosen on the assumption that parts of all methods appropriate for the learners can be utilized in the procedures.

The other way, with primary focus on how to teach a second language, has a rationale for all aspects of teaching, from the planning stage to the actual teaching-learning interactions in the classroom. A program based on a theory of language learning is expected to give a plausible explanation for every single step in its design and in its procedures. Although the two routes dominate the overall language course development, different approaches present ways to integrate them into their designs. Since “there are probably as many approaches to language course design as there are course designers” (Hutchinson & Waters, 1987, p. 65), for the purposes of applying the proper four most commonly identified course design models namely learner-centered course design, the skills-centered course design, the learning-centered course design and the language-centered course design should be considered. Individual design models developed for local learning situations may normally fit into one or more of the general models mentioned above.

Learner-centered course design, in general terms, is based on the principle of adapting the course design and implementation to the needs of the individual learner. The approach is similar to the learning-centered one although Hutchinson and Waters (1987) reject the possibility of the learner being the determiner of everything in the learning process and prefer a broader term, learning, as the focus of attention.

Nunan (1988b, p. 24) claims that the learner-centered curriculum should not be understood in the sense of the traditional concept of learner-centeredness, which sees course design largely in terms of the specification of the ‘what’ of the language teaching to the exclusion of the ‘how’. The ‘how’ of the language

teaching, however, is determined in line with the approach, which sees language learning an incident of general human learning rather than a language specific phenomenon.

Hutchinson and Waters (1987, p. 69) refer to skills-centered course design approach as the one closer to the learner. Instead of a systematic analysis of the target language, the designer in this approach analyzes skills and strategies required to acquire the target language and designs or selects materials so as to improve the previously determined skills and strategies. All program work is based on the development of "pragmatic" and "theoretical" skills that will continue to develop even after the completion of the course. In this design, theories of language and language learning play a major role in the formation of the course syllabus. The approach, however, may be criticized for its overemphasis on skills and strategies as learners may normally have developed them in their work with language one and the transfer of skills to language two learning is more than possible.

The learning-centered approach is an example of a design with a wider perspective of teaching and learning process, which encompasses almost everything in it, from material selection to learner motivation. Course design and learning situation are seen in a reciprocal relationship in that, since needs and resources will change in time, the syllabus, the materials, the methodology and the evaluation procedures will also be adapted to the newly emerging learning situations through feedback channels to enable the course to respond to the developments.

Basic premise of the language-centered course design is that a systematic analysis of the learners' situation in the target language area and the linguistic features of that situation should be the basis for the creation of a syllabus. In other words, language to be included in the syllabus is only a restricted area based on learners' needs. In this model, language is seen as separable into logical pieces rather than as a whole entity. As a result, it is believed that the selected piece presented in a systematic manner will be acquired in the same logical and systematic way and might be considered as its major weakness. As Hutchinson & Waters (1987, p. 67-68) criticize it:

> One of the alluring features of this model is that it appears to be systematic. But in doing so it engenders the false belief that learning itself is systematic – that the systematic analysis and presentation of language data will produce systematic learning in the learner. Unfortunately, the role of systematization in learning is not so simple. … most important point here is that it [systematization of knowledge] must be an internally-generated system not an externally – imposed system. … we must avoid the mistake made by the Audio-lingual Approach of believing that because language has a describable system, describing that system will induce systematic learning.

Other than its over-emphasis of language as a logical and straightforward process, another weakness of the model is the risk of boredom it may cause on the learners as all attention is given only to the language needs of the learners (Hutchinson & Waters, 1987; Robinson, 1991).

In recent years a new learning paradigm has emerged in higher education (Barr & Tagg, 1995). Known as Learner-Centered Education (LCE), this approach places the student at the forefront of the learning enterprise. In contrast with the traditional teaching-centered approach, where students passively receive information imparted by classroom-based instructors, LCE emphasizes the student's responsibility to actively seek out and construct meaning from information, regardless of the context in which that information is presented.

The impetus for the shift from a teaching to a learning paradigm was the realization that the instruction-based approach was not producing the desired learning outcomes in the classroom. This recognition, coupled with recent calls by international and national legislatures and other entities for greater institutional accountability, has resulted in a significant shift in pedagogical practice. Some colleges and universities are undertaking initiatives to infuse LCE methodologies into the curriculum. Although the principles espoused by learner-centered education are by no means original, their particular application to the classrooms represents a novel approach at educating today's students.

Since the focus in language teaching has shifted from the nature of the language to the learner, the learner is seen at the center of the learning and teaching process. Richterich and Chancerel (1980) point to an approach centered on the learner: They see the learner at the heart of language teaching and take the learner as an entity whose personality, aspirations and needs should be taken into account because every individual has unique properties, learning styles, and abilities.

This implies the differentiation of the curricula in language teaching for different learner types. Because it is impossible for a traditional curriculum to meet many different needs of learners, a needs–based curriculum where specification of language is made by tailoring the content of the courses to the needs of students is believed to best serve the educational objectives of a particular learner (Hutchinson & Waters, 1987).

In most medical faculties, medical students have considerable medical English problems during their first year and coming year studying, despite the fact that they have studied English for about six years either in state or private schools prior to entering the university. These students have to either enroll in compulsory General English as a foreign language course or take an English Proficiency Test in order to be excluded from the preparatory English prior to starting directly with their main medical courses. Medical students are mainly exposed to General English with little emphasis on English for Medical Purposes. Accordingly medical students during their studying at medical faculties have difficulty in coping with their academic subjects and needs due to the lack of adequate learning medical English. Therefore any medical English program should be based on an identification of the actual uses to which medical English is required to be put by such learners.

According to the medical programs taken from different universities, medical students are supposed to take part in General English program, which lasts about one year once they start medical school in general. During the English preparatory class courses that last about 800 hours, the students are taught General English and not much importance is given to English for medical purposes to a great extent. Therefore, they have little chance of employing their knowledge of the foreign language in their own field of study. Furthermore, the medical texts used may have insufficient features to embody the needs of those students. Another issue is that the students may not apply the language effectively. It has been indicated that there are many students who have to overcome the content of texts in medicine in a foreign language. It seems to be difficult to meet students' needs in medical English without giving much more importance to the design of a more effective program (Ertaş, 1998).

Research studies on the effect of learner-centered instruction on student achievement produced mostly favorable results, but there were also studies that showed learner-centered instruction did not make any significant differences in student achievement when compared to traditional methods. For example, Lord (1999) examined the teacher-centered and learner-centered instructional methods in a science course for college undergraduates. Students in the teacher-centered classes (2 classes, 45 and 46 students, respectively) were instructed by lecturing while the students in the learner-centered classes (2 classes, 48 and 42 students, respectively) were instructed using group work, critical thinking questions, and discussions. Experimental and control groups' performance in the final exam and their answers to a questionnaire about the course were compared. The findings revealed that learner-centered classes performed significantly better on exams, and rated the course higher.

Kolars and Gruppen (1997), on the other hand, reported no difference between the learner-centered instruction and teacher-centered instruction. They studied the effects of learner-centered and teacher-centered small group learning of medical school students on knowledge acquisition, retention and application. The study used a randomized cross-over design. No difference was reported between the groups in terms of long-term achievement, retention and knowledge.

One study in Turkey was conducted by Boztaş (1987). He carried out a needs assessment at Hacettepe Medical Faculty. His primary concern was to propose a course design based on the English needs of students. After gathering information from students and teachers, Boztaş proposed his "communicative" course design similar to Koç's (cited in Boztaş, 1987). He proposed lists of affixes commonly used in medicine and together with lexical information and reviewed some grammar items. One of his conclusions and recommendations based on his analysis of the information gathered from students and teachers is that Freshman English courses should be based on students' identified needs on four skills areas together with target situation needs as well as learning needs. Here, Boztaş proposed a learning-centered course design as illustrated by Hutchinson and Waters (1987, p. 74). He added that for advanced level students, a special reading course with emphasis on reading strategies should be planned.

Another study on medical English is Ertaş (1998). Her elaborate work on modular course design, following Koç's (1992), for the learners of English at the Faculty of Medicine at Gazi University, exemplifies lessons (frames) with emphasis on intensive study, primarily focusing on reading skills, with medical texts. Instead of supplementing the present materials, she proposed new course materials and dwelled also on the improvement of learning strategies. The suggested exercises for the reading passages focused on reading comprehension with an almost equal stress on text analysis as well as vocabulary learning. Since the proposed syllabus is for upper-intermediate level students, it is, then, assumed that the students have already become proficient enough to handle the reading passages. Accordingly, their primary need is the improvement of reading strategies. In brief, the study tried to exemplify a truly skills-based course based on the assumed and identified needs of the students.

Alagözlü (1994) tried to reveal the English language needs of fourth year Medical students at the Faculty of Medicine of Cumhuriyet University, Trabzon in Turkey. The researcher investigated the students', teachers' as well as administrators' perception regarding the students' needs. One of the results of this study is that reading and translation are the most required language skills for medical students due to the fact that large proportion of medicine-related readings are available just in English. Moreover, the researcher concluded that the instructional materials are not suitable which implies a revision of instructional materials in use. The other result is that there is a need for in-service training in teaching ESP. Besides, there is no match between the focus in language classes and the perceived needs of the students by medical students, language teachers and administrators. Therefore medical students' needs were not entirely satisfied by the existing curriculum. According to these results, recommendations were made as to what elements of the curriculum should be revised and how a new curriculum should be developed.

Sari (2003) conducted a study on English language program for Gülhane Military Medical Academy in Ankara, Turkey. He tried to evaluate the present language-teaching program at the academy along with a needs assessment and suggesting a language-teaching program for phase 1. Phase 1 includes levels A, B, and C in General English with 6 hours teaching per week. The total number of

hours per year in phase 1 is 192. The significance of the study was in the selection of NIP (Non-Interface Position) view of Monitor model as the theoretical approach to L2 (Second Language) teaching.

Kashani, Soheili, and Hatmi (2003) conducted a study titled: ‘‘Teaching English to students of medicine: A student-centered approach’’. The purpose of this study was to compare the achievement levels of the majority of the applicants to the medical school at Tehran University of Medical Sciences (TUMS) in Iran in the academic year 2002-2003 with that of a smaller group of the same population. The former group received instruction based on the established syllabus, but for the latter group a new student-centered approach to teaching English was designed. Participants were screened and then grouped into homogeneous classes on the basis of their English language proficiency levels. After receiving instruction based on the newly-developed student-centered approach for five consecutive semesters, they sat for the National Comprehensive Exam of Basic Sciences. Performance of the two groups on the English subtest of this exam was then correlated. Students covering the university established syllabus, it was observed, did better on the English subtest. Careful monitoring of the university Language Center’s educational program seemed to be an effective mechanism to motivate students to do their best.

The authors concluded that careful monitoring and a highly developed evaluation system seem to instructors and administrators to be an effective mechanism to motivate students, teachers, and/or all those involved in a teaching/learning program to do their best. Thus, supervision should not be rejected merely as a stressful agent from the very beginning. Besides, students at the lower levels of English proficiency seem not to benefit so much from the student-centered approach with non-expert facilitators as from an expert EFL (English as a Foreign Language) teacher. This simply implies that teaching approaches are to be tested for different proficiency levels and that the same approach might not be equally useful to different learning groups. It also appears that students at different learning levels might benefit more from different level-specific evaluation systems. This could be the subject of a further study, of course. Finally, administrators would serve the university more effectively if they apply

research findings for the betterment of the educational plan of action in all departments.

Learner-centered instruction emphasizes an active educative setting, one in which students share responsibility for their learning. Instructors within learner-centered education mediated settings apply a variety of learning strategies, including problem-based, collaborative, and experiential learning to enhance the learning outcomes of their students. Moreover, through the application of learner-centered approach, it is recognized that individual learners have unique abilities, interests, and background, and accounts for such differences in developing learning strategies as well as activities.

Due to the deficiencies of proper English language teaching approach in medical English teaching, meaningful learning, high level of performance, high satisfaction, and high long-term learning medical English are not achieved. Hence, examining the impact of learner-centered instruction on the first year medical students' performance, attitudes, and retention of medical English is important for medical English instruction. In that perspective, how learner-centered approach contributes to the above points is significant. Therefore, there is a need to scrutinize the impact of learner-centered approach on the first year medical students' performance, attitudes, and retention, and how it contributes to effective implementation of learner-centered instruction in educational settings for medical English purposes.

Although there have been some research studies regarding medical English teaching and learning so far, the impact of learner-centered instruction has not been examined much. The studies conducted up to now mostly focused on needs assessment, evaluation and materials preparation. Besides, those studies were not on the first year medical students to a great extent. Accordingly, there have been few studies within Turkish context. Therefore, there is a need to examine the impact of learner-centered instruction on the first year medical students' performance, attitudes, and retention in medical English.

1.2. Purpose of the Study

The purpose of this study is to examine the impact of learner- centered teaching and learning process on the pre-advanced first year medical students' performance, attitudes, and retention in medical English. Based on this purpose, the following specific research questions will guide the whole research process:

1. Is there a significant difference between experimental (exposed to learner-centered instruction) and control groups' (exposed to traditional instruction) performance in the achievement test of medical English?
2. Is there a significant difference between experimental and control groups' performance in the retention of medical English?
3. Is there a significant difference between experimental and control groups' attitudes towards learning medical English?
4. What are medical students' opinions in the experimental group concerning the learner-centered instruction?

1.3. Significance of the Study

Conducting a research study on the impact of learner-centered approach on the first year medical students' performance, attitudes, and retention in medical English is significant from several perspectives.

Although there have been some research studies regarding medical English teaching and learning so far, the impact of learner-centered instruction has not been examined much. The studies conducted up to now mostly focused on needs assessment, evaluation and materials preparation. Besides, those studies were not on the first year medical students to a great extent. Therefore, there is a need to examine the impact of learner-centered instruction on the first year medical students' performance, attitudes, and retention in medical English in comparison with traditional instruction.

This study will provide valuable information as to whether learner-centered instruction for the first year medical students leads to medical English learning and to what extent. The results of this study may help medical English course designers and those who use learner-centered approach in medical English

settings in understanding their potential contribution to medical English teaching and learning.

In the literature, it is stated that learner-centered approach is more appropriate for small group of students rather than large group of students. In other words, large classes may not be as suitable and effective as small classes to implement learner-centered instruction due to shortage of class-time as well as class management problems, to mention two important factors. Therefore, the results of this study will help practitioners to examine the appropriateness of learner-centered instruction from large group perspective.

Since there has no research study conducted on using learner-centered approach on the first year medical students in Turkey to the researcher's knowledge, the results of this study will also be beneficial to the Turkish medical faculties in terms of designing medical English course as well as teaching medical English. It will be valuable to find out how learner-centered approach affects the first year medical students in terms of their performance, attitudes, and retention of medical English.

1.4. Definitions of Terms

Traditional Approach: It is the regular classroom instruction (that the control group was exposed to during the experiment) which is based on lecturing, recitation and reading assignments. Although these settings may include pair work, or group work tasks, they are dealt with from a top down perspective.

It refers to teaching with lecture, teacher-initiated questioning and home work with clearly specified objectives, and a well-defined content where the teacher has the primary responsibility in delivering the content.

Learner-centered Approach: It refers to individual work, group work, group discussion, class discussion, and conducting a project relevant to medical topics which involves collaboration among students as well as groups. The evaluation is conducted based on the learners' conducting the project, project presentation, and peer evaluation apart from the mid-term and final examinations.

ESP (English for Specific Purposes): ESP is an approach to language teaching, course design and materials development in which all decisions as to context and methods are based on the learners' reasons for learning. The common

factor in all ESP programs is that they are designed for adults who have a common professional or job-related reason for learning English, a common context in which to use English, content knowledge of their subject area, and well-developed learning strategies.

Medical English Course: It is specifically designed to meet the needs of medical students in following their academic requirements.

Performance: It refers to the achievement with manipulation and exercise of accumulated knowledge, and skills in medical English.

Attitude: It refers to the individual's set or predisposition to react in a positive or negative manner toward a person, object, idea, happening, or institution.

CHAPTER II

REVIEW OF LITERATURE

This section covers the issues concerning ESP, medical English, curriculum, approaches to course design, teaching and learning issues with respect to learner-centered approach, and the relevant studies.

2.1. Historical Background of ESP and Medical English

Certainly, a great deal about the origin of ESP could be written. Notably, there are three reasons common to the emergence of all ESP: the demands of a Brave New World, a revolution in linguistics, and focus on the learner (Hutchinson & Waters, 1987).

Hutchinson and Waters (1987) note that two key historical period's breadth life into ESP. First, the end of the Second World War brought with it an age of enormous and unprecedented expansion in scientific, technical and economic activity on an international scale for various reasons, most notably the economic power of the United States in the post-war, the role (of international language) fell to English. Second, the Oil Crisis of the early 1970s resulted in Western money and knowledge flowing into the oil-rich countries. The language of this knowledge became English.

The general effect of all this development was to exert pressure on the language teaching profession to deliver the required goods. Whereas English had previously decided its own density, it now became subject to the wishes, needs and demands of people other than language teachers (Hutchinson & Waters, 1987, p. 7).

The second key reason cited as having a tremendous impact on the emergence of ESP was a revolution in linguistics. Whereas traditional linguistics set out to describe the features of language, revolutionary pioneers in linguistics began to focus on the ways in which language is used in real communication. Hutchinson

and Waters (1987) point out that one significant discovery was in the ways that spoken and written English vary. In other words, given the particular context in which English is used, the variant of English will change. This idea was taken one step further. If language in different situations varies, then tailoring language instruction to meet the needs of learners in specific contexts is also possible. Hence, in the late 1960s and the early 1970s there were many attempts to describe English for Science and Technology (EST). Hutchinson and Waters (1987) identify Ewer and Latorre, Swales, Selinker and Trimble as a few of the prominent descriptive EST pioneers.

The final reason Hutchinson and Waters (1987) cite as having influenced the emergence of ESP has less to do with linguistics and everything to do with psychology. Rather than simply focus on the method of language delivery, more attention was given to the ways in which learners acquire language and the differences in the ways language is acquired. Learners were seen to employ different learning strategies, use different skills, enter with different learning schemata, and be motivated by different needs and interests. Therefore, the focus on the learners' needs became equally paramount as the methods employed to disseminate linguistic knowledge. Designing specific courses to better meet these individual needs was a natural extension of this thinking.

The oldest medical writing is the Kahun Papyrus, which deals with veterinary medicine and women's diseases. The earliest known written communications about surgery are the Edwin Smith Papyri, which came from Egypt in about the 17th century BC. Hippocrates (460 – 370 BC) illustrates the important place of Greek among the languages of science, albeit that the enduring oath attributed to him was probably not his writing, and some scholars have even questioned his existence. Maimonides (1135 – 1204 AD), a great Hebrew physician, philosopher and ethicist, wrote in Arabic and Hebrew. As the strength of the Romans increased, the language of science became Latin. Latin remained a prerequisite for medical education in Europe until about 20 years ago and to this day most scientific terms and names are still based on Greek or Latin. In the 17th and 18th centuries French was perhaps the most important language of science, sharing its prominence with German. In the latter part of the 19th century and the early part of the 20th century, the Bismarck era, French remained the language of diplomacy,

but German became the dominant language of science (Benfied & Howard, 2000).

2.2. Learner-Centered Approach and Course Design

In the learner-centered approach, "learners are closely involved in the decision-making process regarding the content of the curriculum and how it is taught" (Nunan, 1988a). Jurmo (1989) points out that there are different levels of learner participation. A learner may participate by simply signing up for a course and being physically present. What is aimed for, however, is the highest level of participation, in which learners have considerable control and responsibility for classroom activities.

The notion of learner-centeredness may have been derived from the concept of child-centered education supported by the work of the prominent Swiss psychologist, Jean Piaget, who believed that the teacher should not interfere with the process of maturation, but act as a guide (Lavatelli, 1973). Similar emphasis on the learner may be found in "Democracy and Education" by John Dewey, the American major leader in "progressive movement" in education. Dewey (1916) sought social change through child-centered education. His pragmatism, in fact, includes many elements of student-centeredness. Another concept which seems to have influenced the notion was "individual differences." Even as far back as 1916, the subject seemed a major focus of concern in the realm of foreign language teaching (Deihl, 1916). This concern was, of course, not peculiar to foreign language classrooms. In fact, in the 24th yearbook of the National Society for the Study of Education (1925) a part is devoted to "applying the schools to individual differences" (Whipple**,** 1925).

Burnard (1999), sums up Rogers' ideas of student-centered classroom as a learning situation where students might not only choose what to study, but how and why that topic might be an interesting one to study. Reflecting the viewpoint that knowledge is constructed by students, and that the lecturer is a facilitator of learning rather than a presenter of information, Burnard emphasizes the concept of students having a "choice" in their learning. Yet, McCombs believes that a "learner-centered" perspective contends that education must concern itself with how to provide the most supportive learning context for diverse students–a

context created primarily when teachers value and understand individual student's needs.

Calder (2000) claims that in mid-1980s, such authorities as Lewis, Rumple, Scriven, Robinson and Carr attempted to disentangle what was meant by the term "open" learning. He continues that the term "flexible" learning bears a distinct resemblance to the concept of open learning by virtue of extended access to learning through the removal of barriers, and a philosophy of learner-centered provision where learner choice is the key. The same thoughts about open learning as a student-centered approach and active removal of all study barriers have widely emerged in the literature on educational science.

In so far as assessment in a student-centered classroom is concerned, there seems to be more formative assessment which emphasizes feedback to students and enhance their learning, which does not necessarily add to the end of the course mark. So it seems that the researchers of learner-centered approach come across diaries, logbooks, journals, portfolios, projects, group work, profiles, peer assessments learning contracts, and negotiated assessment in the literature, all of which might be considered as essential activities contributing to Black's (1999) concern of helping students take responsibility for their own learning; therefore, self-assessment is often emphasized in this strategy. Knight (2002) considers contracts as goals set by the student, depending on their learning gaps, which are, in turn, negotiated with the lecturer. Black (1999) and Knight (2002) both show how the students would like to be assessed in order to demonstrate that they have reached the goals, hence adding 'choice' in what to study as well as 'choice' in how the student will be assessed. This very concept of negotiation addresses a dramatic change in relationship between teacher and student. In this way the student can suggest self-assessment grades and negotiate self-assessment or peer-assessment goals.

Bliss (2006), on the other hand, emphasizes the importance of sociability and human connections. She holds that authentic connection in a student-centered classroom will remove fears of failure, ridicule, family problems, the feeling of outcomes not fitting in identity issues which can prevent students from deeper learning. In a similar line, Melander (2002) maintains that student-centered education becomes focused on coaching the student toward the development of

attitudes, skills, and behaviors as a learner, decision maker, and community participant, with success measured in terms of learner outcomes. He also holds that the syllabus and learning resources should guide the student's discovery, understanding, and decision-making abilities regarding learning and development in the formal curriculum. In the long run, this approach should shape the student's own capacities for self-assessing learning strengths and development needs identifying opportunities for learning growth and development, planning learning and development strategies, deciding on learning and development actions, reflecting on learning and development experiences, and initiating adjustments in learning and development strategies.

Nonkukhetkhong et al. (2006) mentioned that teachers were not confident about the learner-centered approach's underlying theory, and therefore the degree of the implementation depended on how the teachers used their understanding of that theory in their practice within the contextual constraints. He further stated that the policy has required both teachers and students to develop new teaching and learning strategies, but has not equipped or supported schools with sufficient facilities, resources and learning environments, thus far has made the policy goals unrealistic and all but impossible to achieve.

Nonkukhetkhong et al. (2006) recommended that there is an urgent need to investigate the English proficiency of teachers and their capacity to develop learner autonomy through a learner-centered CLT (Communicative Language Teaching) approach.

Nonkukhetkhong et al. (2006) explained that the learner-centered approach includes concepts of self-education and life-long education. This change requires teachers to change their traditional roles, requiring them to transform themselves from 'tellers' to 'facilitators' and from 'materials users' to 'teaching materials creators' in order to promote learners' constructive self-learning. Two key components of the learner-centered classroom are first, placing more responsibility in the hands of the students to manage their own learning, and second, teachers taking roles as facilitators of knowledge to help learners learn how to learn rather than being the source of knowledge as was traditionally the case.

Altan and Trombly (2001) offer learner-centeredness as a model for countering classroom challenges because of its viability for meeting diverse needs. Learner-centered classrooms place students at the center of classroom organization and respect their learning needs, strategies, and styles. In learner-centered classrooms, students can be observed working individually or in pairs and small groups on distinct tasks and projects. The transition from teaching the entire group to meeting individual learner needs involves extensive planning and task-specific classroom management.

An essential factor for a learner-centered approach is placing the learning characteristics of all learners under the microscope with specific emphasis on low-performing learners. McCombs (1997) explained that the focus in a learner-centered approach is on individual learners' heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs. She explained learner-centered, from a research-based perspective, as a foundation for clarifying what is needed to create positive learning contexts to increase the likelihood that more students will experience success. Cultural factors impact the connection teachers must make to scaffold students' learning (Singham, 1998; McCombs & Whisler, 1997). The focus is on metacognition, how individual students learn. Milambiling (2001) extended the learner-centered definition by characterizing learner-centered education as context-sensitive. She said that the culture of the learning context is as important to learning as the content and the methods used. Milambiling recommended curricula which address the culture of the learner within specific learning contexts.

2.2.1. Learner-Centered Psychological Principles

Learner-centered psychological principles provide a framework for developing and incorporating the components of new designs for schooling. These principles emphasize the active and reflective nature of learning and learners. From this perspective, educational practice will be most likely to improve when the educational system is redesigned with the primary focus on the learner.

The principles are intended to deal holistically with learners in the context of real – world learning situations. Thus, they are best understood as an organized set of principles; no principle should be viewed in isolation. The principles are

divided into those referring to cognitive and metacognitive, motivational and affective, developmental and social, and individual difference factors influencing learners and learning. Finally, the principles are intended to apply to all learners– from children, to teachers, to administrators, to parents and to community members involved in educational system.

The principles within the cognitive and metacognitive category emphasize many of the same concepts presented via constructivist learning theory. It is recognized that successful learners are those who can use existing knowledge and experience to create new knowledge. How such knowledge construction occurs can vary from student to student, or even between different subject areas, but " unless new knowledge becomes integrated with the learner's prior knowledge and understanding, this new knowledge remains isolated, cannot be used most effectively in new tasks, and does not transfer readily to new situations," American Psychological Association (APA, 1997). The principles within this category also emphasize the need for learners to strategically construct goals for acquiring new knowledge, using multiple learning strategies. Instructors, of course, should continually monitor their students' learning strategies and help them to assess their progress. This category also recognizes that learning is greatly influenced by contextual/environmental factors. Instructors, having intimate knowledge of learning environments, should do their role in adapting these environments to their learners, taking into account learners' level of prior knowledge, cognitive abilities, and their learning and thinking strategies (APA, 1997).

The principles within the second category, motivational and affective factors, indicate that motivation to learn is greatly affected by learners' internal disposition, including their emotional states, belief systems, and goals. Instructors, therefore, should develop learning tasks that enhance the intrinsic motivations of learners-motivation, according to the APA (1997), is enhanced when learning tasks are coordinated with learners' needs and when they are appropriate in complexity and difficulty to the learners' abilities, and on which they believe they can succeed.

One of the key points regarding the principles in the third category, developmental and social factors, is that learning is an interactive process. That is,

learning occurs best when learners engage cooperatively in learning tasks. According to the APA (1997), in interactive and collaborative instructional contexts, individuals have an opportunity for perspective taking and reflective thinking that may lead to higher levels of cognitive, social, and moral development, as well as self-esteem.

Finally the principles within the fourth category, individual differences, recognize the inherent differences among learners and the need for instructors to account for these differences when designing learning tasks. Namely, the category stresses that learners have innate differences, abilities, and talents, and through a variety of diverse learning experiences (APA, 1997), have acquired their own unique preferences for how they like to learn and the pace at which they learn. Instructors not only need to be aware of these differences, but need to adapt their learning environments to them.

Aside from the aforementioned differences, instructors also need to be acutely aware of diversity with respect to ethnicity, socioeconomic status, language, etc. Instructors who value diversity of their students, and accommodate such diversity via their instructional methodologies, can enhance the motivation of their students. In short, the ability of instructors to structure learning environments to accommodate diverse learners greatly affect learning outcomes. A final emphasis of this category is upon assessment of learning outcomes. The APA asserts that continual assessment is necessary, to allow both instructor and student to monitor their progress. Assessment tools can take different forms including performance-based assessments, where the focus is upon the attainment of individual learning outcomes, or self-directed assessments, where the learner appraises his/her own performance.

2.3. Language –Centered Course Design

The language-centered course design can be categorized under two phases of development form the early beginnings of it in the 1960s. Concerning the first phase, it can be said that the English of some subjects, as an example medicine, constituted a specific register rather than other subjects. As a result, the aim of the analysis was to classify the lexical and grammatical features of these registers. The basic notion of register analysis was the pedagogic one of making the ESP

course more appropriate for the needs of learners. The purpose was to produce a syllabus which gave more emphasis to the language forms that learners are likely to face in their own fields of study. Register analysis as a research procedure; however, was passed rapidly by developments in linguistics because the focus of ESP has been on language at the sentence level.

The second phase of language-centered course design changed its focus to the level above sentence since ESP embraced the field of discourse analysis. In addition, comprehending the process of how sentences were combined in discourse to produce meaning was considered.

The language-centered course design, which is common in ESP to a great extent, aims at a direct connection between the analysis of the target situation and the content of the ESP course. The language-centered course design is illustrated by Hutchinson and Waters as in following diagram:

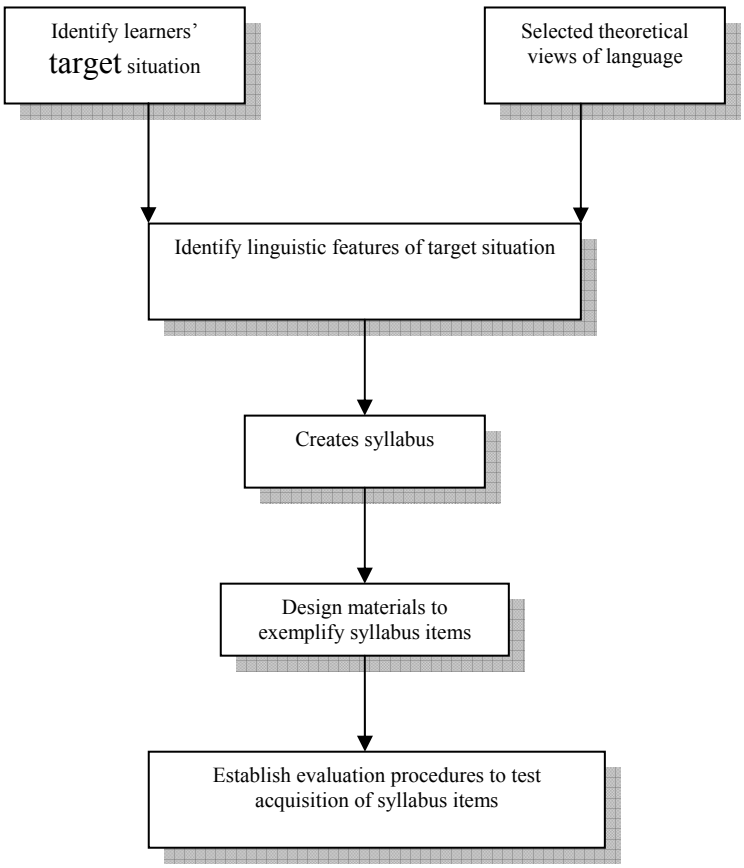

Figure 2.1: A Language-Centered Approach to Course Design (1987, P. 66)

This approach may seem logical; however, Hutchinson and Waters (1987) and Robinson (1991) state some of its weaknesses as follows:

- Although it starts from the learners and their need, the learners have no extra roles in the course. Since the learning needs of the students are not considered, it is not learner-centered.
- When the initial analysis of the target situation is over, the course designer is kept in an inflexible process. If the first analysis is not accurate, what will happen then?
- It seems to be systematic but learning itself is random. In fact, systematically analyzed and presented knowledge does not mean that it will be learnt systematically.
- There is a great extent regarding the risk of boredom because the materials are arranged according to language needs.

The language-centered analysis of the target situation data is just at the surface level. As a result, it implies very little concerning the competence that stresses the performance.

2.4. Medical English

The curriculum design for medical English course should be based on medical English, not English language structure or rules. According to DuGas, Esson & Ronaldson (1999), it follows an 'A'-'B' format. Lesson 'A' finds its focus on vocabulary presentation and acquisition. Lesson 'B' provides opportunities to apply learning from the previous lesson into context. Learning activities in Lesson 'B' can include using actual hospital charts and forms, role-playing assessment, use of medical equipment, open exploration of treatments and interventions related to the main subject. Understanding that all students study medicines at the same time as well, discussions are enhanced as health professionals attempt to confer and consult; sometimes debate medical-health conditions and could be practices. The structure of language acquisition is less acute. Broken English is accepted.

They also mentioned that medical English should be taught from the perspective of medicine and health care first and foremost while reinforcing vocabulary acquisition, grammar and structure secondly. Teacher-tutors are

required to be health professionals as well as language instructors. Lessons, interactions, and case studies represent simple and complex medical practices, pharmacology, anatomy and physiology, pathology, treatment, etc. well beyond entry level English. Goals are set to prepare students for continuing studies in English, as preparation to licensing exams, and for English language competency at work that could be career-specific. Feedback from graduates of the medical faculties and the related students who have studied medical English can be very helpful regarding designing the new medical English programs and applying the most proper approaches of teaching medical English accordingly. Medical English language teaching requires a new and modern approach.

Research showed that teaching medical English should be different from teaching Basic and General English language. Medical students accumulate a wealth of medical knowledge and skills in their medical education. The goal of learning English at this level is not to learn grammar and structure primarily, but to acquire and use the language in their medical studies. The research of Pratt and Brookfield (2002) in Canada, USA, Hong Kong, China and Singapore identified that trades people for example, found traditional learning in a classroom to be "artificial and devoid of the realities essential to learning that "career-specific language in any way that would make it meaningful and useful. This most certainly applies to the study of medical English. Often referred to as English for Specific Purposes, curricula of this sort requires the teacher have a similar career background to the student. This is an absolute must for the students who study medicine and for medical English courses as well.

Hyland (2000) recommends several pedagogical approaches be taken in the ESP classroom. First, he suggests that students use concordances "to allow data to drive learning by guiding students' exploration of authentic models." This suggestion can be applicable to EMP courses, too for language teachers, in conjunction with subject-area instructors, which can create corpora of different medical genres produced for a variety of audiences for students to explore: using this method, the students can conduct their own informal research on texts deemed appropriate by the EMP and content instructors. This may also allow students to confirm explanations about the frequency and function of linguistic

features in EST (English for Science and Technology) textbooks, which are not always accurate (Biesenbach-Lucas, 1995, P. 406) and to compare their findings to those of other EMP studies.

Following Johns (1997), Hyland (2000, P. 149) also advises that ESP students be encouraged to "stand back from their disciplines and analyze the cultures in which they are becoming immersed." EMP students can do this by interviewing members of the medical community to learn more about the professional culture and how it relates to the texts created by individuals in their chosen discourse community.

For EMP students studying English and medicine concurrently, the functions of the relevant linguistic and extratextual features examined in the medical textbooks can be compared to the functions of those characteristic features of review articles. Attention to such differences "can function as an advance organizer and raise the learners' expectations with respect to the way information is sequenced" in the texts (Biesenbach-Lucas, 1995, P. 400). Biesenbach-Lucas further suggests that such comparisons start with extratextual features in research articles and their subsequent popularizations because the differences for this feature in these two genres are "particularly apparent".

Furthermore, based on the findings of some medical research articles (e.g.Adams Smith, 1984; Marco, 2000; Nwogu, 1997; Salager-Meyer, 1994; Thomas & Hawes, 1994; Varttala, 1999; Webber, 1994) medical review articles may serve as a link between the pedagogical discourse found in medical textbooks and the professional discourse presented in medical research articles. Therefore, it is suggested that pre-experienced EMP students read and review articles relevant to their studies and write short reviews on topics covered in their medical textbooks so that they can practice using professional discourse conventions while reinforcing their understanding of the subject matter.

For EMP students learning English and practicing medicine simultaneously, the role of writing in English takes on added importance for publishing research in English is frequently seen as a way to advance careers, particularly in academic medicine, and obtain notice from one's peers around the world since English is the lingua franca of medicine (Maher, 1994; Misak, 2002).

Finally, EMP courses in non-English monolingual settings could draw on the students' knowledge of the generic conventions in their LI (Native Language) by having the students bring medical texts published in the students' native language and compare the grammatical and extratextual features in these writings to those in texts written on the same topic but produced for an English-speaking audience (Johns, 1997, P. 120); this activity could heighten the students' awareness of genre conventions in both languages and allow them to appreciate the similarities and differences between the discourse communities.

2.4.1. Medical English Writing and Texts

According to Tiersky and Tiersky (1992), non-native speakers of English around the world frequently need to read medical English material as part of their university course work. A traditional view held by the instructors in such specialized courses is that knowledge of the medical terms, via a glossary, will provide the non-native reader with what he needs, particularly in medical texts. Experience has shown, however, that even students with mastery over the medical terms become so frustrated in reading medical English that they seek native-language summaries of the English texts, or native language books covering roughly the same material, or do not read the material at all, but concentrate rather on taking verbatim lecture notes.

Tiersky and Tiersky (1992) emphasized that the principal goals of the medical learners should be mastering specific vocabulary and idioms as well as improving their ability to communicate in English, especially with reference to their own particular area of work. To be able to do so, the learners should be at the high intermediate or advanced level that is acquainted with the common structural patterns of the language.

A survey of the recent EST literature appears to support Swales complaint: for example, most EST, English for Science and Technology, researchers studying written ME, Medical English (Adams Smith, 1984; Atkinson, 1992; Gledhill, 1995; Gosden, 1992; Marco, 2000; Nwogu, 1997; Salager-Meyer, 1990; 1992; 1994; Thomas & Hawes, 1994; Webber, 1994) have focused chiefly on research articles, which are written for an audience of specialists, to the exclusion of texts designed for readers with different levels of knowledge about the subject matter.

While such studies have been very useful in promoting the understanding of the linguistic characteristics of these research articles, they have not provided a full picture of the nature of ME writing as a whole.

Some EST researchers have begun to challenge this trend, however. Biesenbach-Lucas (1995), Hyland (1999; 2000), Myers (1992) and Varttala (1999) have performed systematic comparisons of written scientific texts prepared for specialists to textbook excerpts or popular science articles. In addition, Al-Sharief (1996) has examined ME texts produced exclusively for patients. These studies fill an important gap in EST research, yet further analysis of EST texts designed for different readerships is needed, for present research fails to account for the span of variation among audiences: thus, a study including three audiences would allow researchers to better examine how features fall on the continuum of ME writing. In addition, research taking into account only one discipline, such as medicine, would allow EST investigators to better observe the frequency and function of features across genres in that field. Examining how multiple audiences are addressed in scientific texts in one discipline would also allow researchers to expand their understanding of the notion of genre.

2.4.2. Medical Terminology, Acronyms, and Abbreviations in Medical English

According to Gylys and Wedding (1983), medical terminology is a specific terminology used to achieve the purpose of communication in the health care field effectively and precisely, such as in writing diagnosis and doctors' notes. Medical terminology has two characteristics. First, most medical words are made of roots and affixes (Yang, 2005). Any single medical term has at least one root determining its meaning and one or more affixes to change the part of speech or change the meaning of the word.

Schmitt (2000) warned when students use word parts as an initial word-guessing strategy, they must be careful to check the surrounding context to see if their guess makes sense. Haynes and Baker (1993) also found that students sometimes made an incorrect guess about what an unknown word meant in a given text, and then stuck with that erroneous meaning in other context even though the surrounding context made clear, it makes no sense.

Second, medical terminology is an open set with a large number of low-frequency words and newly created words. Since teaching and learning all the words seem to be an impossible task, teaching learners vocabulary learning strategies for inferring the word meaning is more efficient than teaching every vocabulary item encountered. As Nation (1994) suggested, teaching students strategies is especially important when it comes to dealing with low frequency words. Indeed, following Nation, Schmitt (2000) also suggested that high-frequency words should probably be taught, whereas learning low-frequency words will require strategies for determining their meaning.

Acronyms and abbreviations are used extensively in medicine, science and technology for good reason–they are more essential in such fields. It would be difficult to imagine how one could write down chemical and mathematical formulas and equations without using abbreviations or symbols. In medicine, they are used as convenient shorthand in writing medical records, instructions, and prescriptions, and as space-saving devices in printed literature.

It is a reality of medicine and science that the number of acronyms and abbreviations is increasing dramatically. Despite the efforts of teachers and editors to contain them, clinicians and researchers constantly introduce new ones, as perusal of any current journal demonstrates. This growth attests to the fact that acronyms and abbreviations are necessary and useful in medical writing and speaking, conserving space and preventing needless repetition.

2.5. Research Studies

There were various studies which examined learning and teaching English at medical faculties and medical English in different settings and conditions. These studies show that the use of learner-centered approach and other approaches and methods in instructional settings in terms of medical English is an important issue. Besides, various studies regarding employing learner-centered approach for medical English purpose were conducted.

In Alagözlü's (1994) study, the main concern was to reveal the English language needs of fourth-year Medical students at the Faculty of Medicine of Cumhuriyet University, Trabzon, Turkey. Students', teachers' and administrators' perception of students' needs were investigated. Data were collected through

questionnaires and interviews and the perceptions of these people were compared. The four major results of this study were as follows: First, reading and translation are the most required language skills for medical students because of the large proportion of medicine-related readings are available only in English. Second, the instructional materials are not suitable, which implies a revision of instructional materials in use. Third, a need for in-service training in teaching ESP was revealed. Finally, it was seen that the focus in language classes and the perceived needs of the students by medical students, language teachers and administrators do not match. Thus, medical students' needs were not being fully met by the present curriculum. Based on these results, recommendations were made as to what elements of the curriculum should be changed and what a new curriculum should include.

One study conducted by Boztaş (1987) where he carried out a needs assessment at Hacettepe Medical Faculty, Ankara, Turkey. His primary concern was to propose a course design based on the English needs of students. Based on his analysis of the information gathered from students and teachers, Boztaş concluded and recommended that for freshman students, English courses should be based on students' identified needs on four skills areas together with target situation needs as well as learning needs. Here, Boztaş proposed a learning-centered course design as illustrated by Hutchinson and Waters (1987, p. 74).

Moreover, he added that for advanced level students a special reading course with emphasis on reading strategies should be planned. He also recommended that optional translation courses should be given to second, third and fourth year students. He also proposed an optional writing course with special focus on note-taking skills. Besides, he proposed that an in-service training course should be given in collaboration with the medical department. Another suggestion made by him was that English courses should be compulsory for the first three years and in later years, an optional two-hour translation course would be sufficient. In addition, the objectives (or goals) of the school should be revised and made known to the students.

Ertaş (1998) conducted her Ph.D. with the title of "A modular ESP course design for the upper-intermediate learners of English at the faculty of medicine at Gazi University." The aim of this study was to design two different specific

English courses for the fresh men of phase I and phase II of the faculty of medicine at Gazi University. To realize this aim, the needs of the students at the faculty were specified by using various methods of data collection such as questionnaires and semi-structured interviews conducted to 40 students and 10 area specialists of the mentioned faculty. The data collected were analyzed, the results were interpreted, and implications for the course were specified. The interpreted results were led the way to specify the shape of syllabus, the general objectives of the course, the materials, the activities, and the format of the course design. Besides, a new model was presented based on Dick and Carey (1996) and Koç (1992) with some minor modifications in the models. This study covered several syllabus types, formats, language skills, and learning strategies in order to help limited English proficient students to overcome their difficulties, and to build a bridge between the content matter in their specific areas and the language.

The above study exemplified a skills-based course based on the assumed and identified needs of the students. The syllabus design suggested for the Faculty of Medicine focused on the needs analysis, content of syllabuses, materials development, and teaching strategies. The result was that when the above mentioned points are taken into account for better implementation, the model suggested in this study could help limited English proficient students solve the problems in following their medical courses and lead to successful completion of their faculty courses. However, it did not involve teacher training and steps of summative evaluation.

Sari (2003) conducted a study on suggesting an English language program for Gülhane Military Medical Academy, Ankara, Turkey. His study attempted to achieve two purposes, which were evaluating the present language-teaching program at Gülhane Military Medical Academy together with a needs assessment and suggesting a language-teaching program for phase I. Phase 1 (first year) includes levels A, B, and C in General English with 6 hours teaching per week. The total number of hours per year in phase 1 is 192. There are 5 phases in English language course schedule at the faculty. Each phase is conducted in one year. The total number of hours per year in phase 2 is 160, in phase 3 is 160, in phase 4 is 96, and in phase 5 is 96. Phases 4 and 5 are optional. The data used in the evaluation of the present program, in the assessment of needs and the

preliminary evaluation of the piloted module were collected from 230 students, 7 teachers and 25 doctors via 6 different data collection instruments. The significance of the study was in the selection of NIP (Non- Interface Position) view or Monitor model as the theoretical approach to L2 (Second Language) teaching. Another importance was the collection of the data both from the target group, the students, and the doctors, the professionals in the field of medicine.

A sample module was prepared for Level A (Advanced) for which the newly prepared materials were suggested. The sample module was piloted in three classes and preliminary quantitative and qualitative data were collected for the evaluation of the module. The results of the data gathered from the students and the teachers showed that the sample module was better than the previous form of the lessons.

In the above mentioned study, the importance of a comprehensive theory of language learning in L2 (Second Language) teaching was emphasized. The itor Model, also called Monitor Theory, NIP (Non-Interface Position) view and Input Hypothesis was chosen, since the principles of the theory are based on second language acquisition research. Students', institutions' and doctors' needs and goals and available resources were surveyed and a new second language teaching program was suggested for phase I. A general curriculum model and a program design were also suggested together with the syllabuses for phase I. A sample module was prepared and piloted. The pilot module was found better than the previous form of the lessons both by the students and the teachers.

Another study was conducted by ZHUO, as a Ph.D. dissertation at the University of Massachusetts in 1989, titled ''English Curriculum for Medical Students in the People's Republic of China.'' The purpose of this study was to develop an English writing curriculum for medical students in China. This study discussed and analyzed the problems relating to the English curriculum in medical schools and designed a relevant English curriculum for medical students. In doing so, the study utilized the procedures of reviewing of government's policy, reviewing the current English curriculum for science and technology, textbooks for Chinese secondary school students, and field observation.

The curriculum developed in this study was for medical students who specifically need to improve their English writing skills in medical science. Based

on the students' needs, goals and objectives were developed, and a syllabus was specified, teacher-training, materials and methods, as well as evaluation procedures were also defined.

Based on the review of various theories, an English curriculum was developed. The exploration of English language education in medical universities and colleges, the analysis of the ECST (English Curriculum for Science and Technology) and the problems in its application to medical students as well as the research into the needs for studying English among medical students were all considered in this study.

Although this program has been developed on a theoretical and practical basis, it has to be field tested for relevancy, sufficiency and effectiveness. This has been about to occur in a Chinese medical university when the author returned to China. The author concluded that from the description of English language education in medical schools and the problems of the ECST, it can be seen that the use of the ECST as a curriculum for medical students is inappropriate. Besides, medical students need a curriculum designed for their specific needs, goals, and objectives. In addition, the development of learning materials and selection of teaching methods must be compatible with the design goals and objectives. Finally, teachers have to be well trained and their evaluation appropriately designed.

One study was conducted by Naruenatwatana (2001).The purpose of this study was to investigate the needs of the medical students in the use of academic English at Rangist University. The analysis of the needs was by three groups: 297 of the medical students in the 1999-2000 academic year ranging from first to sixth year of study, 7 teachers of English who taught English to medical students at Rangist University in the 1999-2000 academic year, and the subject teachers who taught major subjects at the school of Medicine, Rangist University in the 1999-2000 academic year. The instrument used in this study was three sets of questionnaires: the first for medical students, the second for teachers of English, and the third for subject teachers. The content of the questionnaire given to each group of subjects was similar in detail except the first part which addressed the background information of the subjects. Thus, each set of questionnaires consisted of 3 parts with 59 items, together with an open-ended item.

The data obtained was calculated by using the program of the Statistical Package for Social Sciences (SPSS). The statistical devices used in this study were percentage and frequency count, five-point Likert Scale, the Cronbach Alpha Method, and t-test. The findings revealed the positive opinions of all three groups on the needs of using academic English and the specific English courses-tailored for medical students at Rangsit University. All four macro-English language skills (listening, speaking, reading, and writing) were greatly needed. Reading skills were considered as the most important. Results from the t-test indicated that there were significant differences at p-value <.05 of needs on certain sub-skills of the four macroskills. All three groups indicated that they wanted to include every sub-skill of the four skills in the course content as to the degree of 'great need' or 'greatest need'. Results from the t-test yielded a significant difference at p-value <.05 between the medical students and the two groups of teachers in the sub-skills of listening, speaking, and reading. No significant difference was found at p-value <.05 in writing skills. Results from the open-ended item questionnaire supported these findings. More English courses specially designed and geared to students' academic needs were recommended as an urgent need for medical students at Rangsit University.

The aim of Askari Arani's (2004) research with the title of "issue of learning EMP at university: an analysis of students' perspectives" was to consider the issues of learning English at a university level, and explore the ways of improving the quality of learning. Moreover, the natural question that occurs was why school leavers do not posses adequate language schools, and an attempt was made to tackle this question.

The investigations were carried out over a period of three academic terms from 2002 to 2004. The research involved gathering data on learners' views on their learning needs and expectations, on encountered difficulties in learning at university, on the ranking of preferences for language skills, i.e. the degree of importance of proficiency in different areas of language, and collecting and analyzing learners' self-assessment data throughout the course. The techniques of gathering data included different types of questionnaires administered to 45 learners (students of medicine) at the beginning, in the middle and at the end of courses, and talking to students outside classroom. The results indicated that

learner initiative should be encouraged. Besides, teachers should get learners to take responsibility for their own learning. Given space, time and clear directions, learners are bound to succeed.

The other study of Askari Arani (2005) aimed at analyzing the learning EMP through ICT (Information and Communications Technology) with respect to attitudes and difficulties. This was a quasi-experimental study conducted on 40 second-year students of medicine who had passed two EMP courses at the Medicine Faculty of Kashan Medical Sciences University in Iran. The respondents were asked to fill in a questionnaire on their internet habits (based on Kung and Chuo, 2002). There were six multiple choice questions in this questionnaire. The students were also requested to either comment on or volunteer their own opinions or suggestions, but there were none. The data was presented in percentage and described.

The author concluded that the major advantage of using computers in the EMP classes is that there is a wide variety of interactive activities that encourage independent learning. Generally, the respondents' attitudes towards learning English on the web have been positive, but learners are reluctant to learn EMP online in their spare time. Besides, the important factors for successful work online are the learners' computer skills, their experience in answering information on websites, and good reading comprehension skills in English. The main difficulty that the respondents encounter when using the internet for preparing creative assignments is the linguistic complexity of the materials and students' inability to assess materials impartially.

Askari Arani (2005) also in another research named: ‘‘learning strategies of English medical terminologies in the students of medicine" tried to explore the learning of medical terminology by Iranian students of medicine. It focused on the frequency of use of strategy by them in learning medical terminology and to identify the strategies related to success or failure in learning the target. This study attempted to clarify the strategies used most and least frequently by the learners; a comparison is also made between high level and low level students in the least and most frequently used medical terminology learning strategies.

Participants in this study were 89 students of medicine from two second-year classes at Kashan University of Medical Sciences, Iran. Medical terminology is a

required complementary section in EMP (English for Medical Purposes) course so all of the students were supposed to take and pass Medical Terminology course. The class met two hours a week.

The test for evaluating the subjects' proficiency level in this study was the Medical Terminology mid-term exam designed and administered by English teacher in the faculty of medicine which was a curriculum-specific achievement test containing 50 questions in total. The categories of medical terminology were based on Schmitt's (1997) taxonomy for studying vocabulary strategies. The students were required to answer questions on their strategy use on a five-point Likert Scale. The students were required to write medical words based on the English definitions of each test item.

The results of this study indicated that students in general preferred to use written repetition, verbal repetition, and bilingual dictionary strategies. In addition, the students most proficient in medical terminology used various kinds of strategies more often than the less proficient students did.

In this study, it was found that there was significantly greater overall use of learning strategies among more successful learners and significant differences by proficiency level in students' use of four strategy categories: determination, memory, cognitive and metacognitive. However, neither the high-level learners nor the low-level learners were good at employing social strategies to discover new meanings.

The results also indicated that there existed major differences in patterns of learning strategy use among students for two proficiency levels. High-level learners were better at gaining knowledge of a new word; they remembered more effectively, controlled and evaluated their own vocabulary learning better than low-level learners did. However, both levels were poor at utilizing social strategies to discover new meanings in terminology learning. Social strategies involved asking for clarification or verification, cooperating with peers, and increasing with native speakers of the target language.

A number of studies have sought to examine the effectiveness of some specific strategies for learning medical terminology (Fang, 1985; Dunkle, 1983; Troutt, 1987). A study by Fang (1985) investigated the success of two medical terminology learning strategies: (1) the analysis of affixes and roots and (2)

finding the relationship between sound and script. The strategy 'to analyze affixes and roots' engages learners to analyze word structures. For example, in order to learn the medical term 'endocarditis', the internal inflammation of the heart, learners must learn to analyze this word into endo- (prefix, within), card (root, heart), and -itis (suffix, inflammation). On the other hand, the strategy 'finding the relationship between sound and script' involves attempts to find the relationships between pronunciation and spelling of medical words. Fang's study has provided some initial evidence to suggest that the use of analyzing affixes and roots promotes more medical terminology learning than the method of finding the relationship between sound and script.

Troutt (1987) investigated how method of instruction for college students, keyword versus traditional was related to acquisition and retention of medical terminology in a classroom setting and in individualized learning. Five intact classes containing a total of 120 college students were taught three lessons of medical terminology by one or more of three methods: traditional, keyword in a classroom and key word in individualized learning. The results indicated that the class taught to use the keyword strategy retained significantly more words than the class taught by a traditional method for initial acquisition of medical terminology. However, there was no significant difference between traditional and keyword methods for long-term range retention of medical words at four and eight weeks. No difference was found in medical word scores between a keyword/classroom method versus a keyword/individualized method for either acquisition or retention. This study has provided empirical evidence to present the effectiveness of keyword method for initial acquisition of medical terminology.

Both Fang and Troutt focused on the effectiveness of two strategies, however, two learning strategies alone are not enough to get the whole picture of how students learn medical terms more effectively. In order to gain an overall picture of the optimal use of learning strategies for medical terminology learning, studies that deal with all the strategies as a group are a complement to Fang's and Troutt's approaches.

Yang (2005) conducted a study regarding nursing pre-professionals' medical terminology learning strategies. In this study, she mentioned some tips that teachers have to know when teaching learning strategies. First, awareness of

strategy use should be raised. To help students cultivate their awareness of language learning strategies, teachers may introduce them to the wide range of alternative strategies, help students understand their own current strategies, and assist them to find out the circumstances under which a given strategy can be applied effectively.

Second, it is important for teachers to recognize that some strategies may be more suitable to some learners than to others because of individual differences in strategy choice. If language teachers have a better idea of students' preference of strategy choices, they may teach students to choose some strategies which are more effective for students. Accordingly, it was concluded that, high-level learners appear to use learning strategies more frequently than low-level learners. Investigating Chinese EFL learners' learning strategies of oral communication, Huang and Naerssen (1985) also found that distinguished successful learners were more willing to take risks for employing strategies and practicing strategies than less successful learners were. Learning strategies can be taught as found by some studies (Cohen & Aphek, 1980; O'Malley, Chamot, Stewner-Manzanaraes, Russo, & Kupper, 1985).

Bell, Hudson, and Heinan (2004) conducted a study called ''effect of teaching/learning methodology on effectiveness of a web-based medical terminology course.'' The purpose of this study was to investigate how a particular method of instruction can impact the effectiveness of an on-line or web based course in delivering subject content. Two different versions of an existing web-based medical terminology course were compared in order to determine which was more effective in teaching content to first semester students in a physician assistant studies program at a 4-year public university. Learner achievement and learner satisfaction levels for the two different course versions were compared. The mean exam scores total and the mean increase in knowledge assessment score did not differ significantly for the two teaching protocols once the achievement measures had been adjusted for initial medical terminology knowledge. Reasons were offered to explain why this occurred and, in addition, differences in learner satisfaction ratings for the two course versions were discussed.

The above mentioned research indicated that deep learning strategies such as reflection and analysis may not be necessary in order to perform well on such short answer exams. Thus, regardless of the instructional design/method utilized to learn medical terms, the learners may have adapted their learning style to accommodate the superficial nature of the testing instruments. The research also indicated that successful learners are not only deep learners but "adaptable or strategic learners" who know how to adjust their learning style in order to suit the circumstances of their learning and testing environment. In this case both sets of learners but especially the CS/DB (Case Study/Discussion Board) learners adjusted their learning strategies to match the cognitive level of the assessment instrument.

Kashani, Soheili, and Hatmi (2003) conducted a study named: ''Teaching English to students of medicine: A student-centered approach''. The purpose of this study was to compare the achievement levels of the majority of the applicants to the medical school at Tehran University of Medical Sciences (TUMS) in Iran in the academic year 2002-2003 with that of a smaller group of the same population. The former group received instruction based on the established syllabus, but for the latter group a new student-centered approach to teaching English was designed. Participants were screened and then grouped into homogeneous classes on the basis of their English language proficiency levels. After receiving instruction based on the newly-developed student-centered approach for five consecutive semesters, they sat for the National Comprehensive Exam of Basic Sciences. Performance of the two groups on the English subtest of this exam was then correlated. Students covering the university established syllabus, it was observed, did better on the English subtest. Careful monitoring of the university Language Center's educational program seemed to be an effective mechanism to motivate students to do their best.

The participants consisted of 107 medical students out of the total applicants (N=219) in the medical school in September 2002 who had been able to successfully cover all their courses for the basic science section of the medical curriculum in five semesters.

The performances of both groups of students on two tests (a) the English subtest of the National Comprehensive Examination for Medical students

(NCME) and (b) the early screening English proficiency test administered at the time of their admission was then matched to explore the differences.

The authors concluded that careful monitoring and a highly developed evaluation system seemed to be an effective mechanism to motivate students, teachers, and/or all those involved in a teaching/learning program to do their best. Thus, supervision should not be rejected merely as a stressful agent from the very beginning. Besides, students at the lower levels of English proficiency seemed not to benefit so much from the student-centered approach with non-expert facilitators as from an expert EFL teacher. This simply implies that teaching approaches are to be tested for different proficiency levels and that the same approach might not be equally useful to different learning groups. It also appears that students at different learning levels might benefit more from different level-specific evaluation systems. This could be the subject of a further study, of course. Finally, administrators would serve the university more effectively if they apply research findings for the betterment of the educational plan of action in all departments.

Wahlqvist, Skott, Björkelund, Dahlgren, Lonka, and Mattsson, (2006) conducted a research under the name of "impact of medical students' descriptive evaluations on long-term course development." In this study, the authors' purpose was to study the correspondence between medical students' descriptive evaluations and key features of course development over five years. They intended to analyze the impact of students' descriptive feedback in the transition to clinical education during five years of factual course development.

Qualitative content analysis was used in the study. The content was consultation skills courses in the middle of the Göteborg undergraduate curriculum during five years. The study sample included students and course evaluations, n=158, in autumn 1995, spring 1996, spring 1997, autumn 1998. The data analysis consisted of two steps, analysis of students' descriptive evaluations and analysis of key features of course development respectively.

As a result of this study, a corresponding pattern was found in students' descriptive evaluations and key features of course development, indicating the impact of students' open-ended feedback. Support to facilitators and a curriculum reform also contributed. Students' descriptive feedback was both initiating and validating longitudinal implementation. During five years, students' descriptive

evaluations and teachers' course records were crucial sources in a learner-centered knowledge- building process of course development. The authors concluded that students' descriptive evaluations and course records can be seen as important instruments in developing both courses and students' learning. Continuity and endurance in the evaluation process must be emphasized for achieving relevant and useful results.

Baykan and Nacar (2006) conducted a study regarding learning styles of first-year medical students attending Erciyes University in Kayseri, Turkey. The aim of this descriptive study was to determine the learning styles of first-year medical students using the Turkish version of the Visual, Auditory, Read-write, Kinesthetic (VARK) questionnaire. This study was performed at the Department of Medical Education of Erciyes University in February 2006. The Turkish version of the VARK questionnaire was administered at the beginning of the second semester to first-year medical students to determine their preferred mode(s) of learning. All 162 first-year medical students were invited to participate in the study. Of the 162 students, 155 students (95.7%) completed the questionnaire. A Kruskall-Wallis test was performed to determine whether an association existed between the learning style and the grade point average of the student, and a chi-square was performed to determine whether there was an association between sex and learning style.

According to the VARK questionnaire, students were divided into five groups (visual learners, read-write learners, auditory learners, kinesthetic learners, and multimodal learners). The unimodality preference was 36.1% and multimodality was 63.9%. Among the students who participated in the study (155 students), 23.3% were kinesthetic, 7.7% were auditory, 3.2% were visual, and 1.9% were read-write learners. Some students preferred multiple modes: bimodal (30.3%), trimodal (20.7%), and quadmodal (12.9%). The learning styles did not differ between male and female students, and no statistically significant difference was determined between the first-semester grade average points and learning styles.

Knowing that the students at Erciyes University have different preferred learning modes, the authors mentioned that the findings of this study could help the medical instructors in this faculty develop appropriate learning approaches and

explore opportunities so that they could make the educational experience more productive.

2.6. Summary of the Literature

ESP (English for Specific Purposes) teaching enjoys the privilege of being in an academic context that favors learning more than any other form of English language teaching (Kenning, 2001). As such, and combined with a critical view of language study and of learning, ESP can become an empowering educational device. In order to get it realized, an integral approach of both subject matter and learners' needs has to be adopted by creative instructors (Lomperis, 1998). The students' interests, aspirations and background should be perceived by the teacher or the profession (Reid, 1998; Rivers, 1992; Hayland, 2000).

A learner-centered approach in language instruction is founded on the concept that the learner is central in the learning process. Learners learn primarily because of what they bring to their classroom experience in terms of their perceived needs, motivations, past experiences, background knowledge, interests, and creative skills. Learners are active as opposed to passive recipients of knowledge. They may assume a decision-making role in the classroom, often deciding what is to be learned, through which activities, and at what pace. Learners can also produce materials and provide realia for the classroom. Teachers, on the other hand, are seen as facilitators, helpers, and resources with a decentralized role (Campbell, 1992).

The purpose of the learner-centered approach to language learning and teaching is to maximize language learning. The major goal is to provide a learning environment and process that focuses on the learner so that learner's needs are served. Teachers and students collaborate in the learning and teaching process. Students are involved in decisions on content selections, methodology, and evaluation (Nunan, 1989). In the process, first learners' needs must be assessed. Secondly, learners are allowed to choose choices in their learning tasks (Nunan, 1989; Richards, 1986; Tudor, 1996). Thus, teacher's roles are changed to develop learning and teaching through the tasks suitable for this approach such as project work, planners, counselors, and helpers.

As planners, teachers have to plan how to divide learning tasks into small chunks, how to monitor the learning tasks and progress as well as, how to evaluate these tasks. As counselors, they have to provide feedback and suggestions on students' work constantly. Those feedback and suggestions are given on the part of educational purposes, theme, content, organization, grammar, and vocabulary. As helpers, teachers guide students to learn more by searching for, surfing, and screening information from sources outside classroom such as through the internet.

Constructivist theory is integrated in learner-centered approach to encourage students to learn more, to increase the usefulness and quality of learning, and to allow for construction of meaning by students themselves (Jonassen, 1998).

Literature shows evidence that medical students' needs have not been fully met by the existing curriculum in terms of medical English learning (Alagözlü, 1994; Boztaş, 1987). Moreover, the evaluation of the present language-teaching program at some medical faculties together with a need assessment has been conducted (Sari, 2003). Therefore, it is suggested that a new and relevant medical English language teaching approach be designed and implemented for medical English program and evaluation (Ertaş, 1998; Naruenatwatana, 2001; Wahlqvist, Skott, Björkelund, Dahlgren, Lonka, & Mattsson, 2006; ZHUO, 1989).

In addition, it is suggested that learner initiative be encouraged and teachers should get learners to take responsibilities for their own learning. Accordingly, success of students can be anticipated more (Askari Arani, 2004). However, literature also shows that successful learners are not only deep learners but adaptable or strategic learners who know how to adjust their learning style in order to suit the circumstance of their learning and their learning strategies to match the cognitive level of the assessment instrument (Bell, Hudson, & Heinan, 2004).

Students at the lower levels of English proficiency seem not to benefit so much from the learner-centered approach. Teaching approaches are to be tested for different proficiency levels and that the same approach might not be equally useful to different learning goals. Students at different learning levels might benefit more from different level-specific English teaching approach and from different level-specific evaluation system (Kashani, Soheili, & Hatmi, 2003).

CHAPTER III

METHOD

This chapter elaborates on the methods used to conduct the present study that deals with understanding the impact of learner-centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English. The chapter initiates with the design of the study, presentation of research questions, and hypothesis. Then, the chapter proceeds with a description of the course, the related documents, texts and materials, and selections of the subjects. Next, the data sources, data collection instruments, data collection procedures and data analysis procedures are explained. The chapter ends with the limitations of the study.

3.1. Design of the Study

The purpose of this study was to examine the impact of learner-centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English. A pre-test, post-test experimental design was used in this study. In addition, a qualitative design was used to identify the opinions of the subjects in the study.

Before the experiment, an achievement test and an attitude test was given as pre-tests. The control group continued with traditional instruction while the subjects in the experimental group were exposed to learner-centered instruction.

In terms of the training the instructor, it was conducted before and during the implementation. Before the implementation it took 12 weeks. The methods of teaching in education were explored and discussed in detail in the first 3 weeks. The related materials were studied as well. In the following 2 weeks, different approaches of teaching English language were explored and discussed comprehensively. The materials related to the approaches to course design as language-centered course design, skills-centered-course design, learning-centered

course design and learner-centered course design were scrutinized. Moreover, learner-centered psychological principles were explored in the following week.

ESP teaching as well as EMP teaching was the topics for the next two weeks. Their similarities and differences of teaching them with teaching General English were discussed. In addition, the characteristics of ESP and EMP in terms of teaching, learning, texts, contexts, materials, learners, instructors, settings, and environments were explored in the following two weeks. The related materials were studied too.

In the next two weeks, the training was focused on comparing learner-centered approach with teacher-centered approach. The researcher provided the instructor with the related materials. Particularly, group working, cooperative learning, problem based learning and her (the instructor's) roles in the two approaches were emphasized.

Accordingly, the medical English texts, materials, activities, lesson plans and programs in different universities in Turkey and other countries were reviewed. Then the researcher demonstrated a medical English lesson based on learner-centered approach and the researcher and the instructor discussed it. This lesson was implemented by the instructor to the experimental group. It can be seen in Appendix A.

Besides, during the implementation, the week before the beginning of each lesson, the researcher trained the instructor concerning the learner-centered approach who instructed the both groups.

Then the control group continued with traditional instruction and the experimental group continued with the learner-centered instruction. At the end of the treatment, an achievement test and attitude test were given as post-tests, to both groups and a post-course interview was conducted with the subjects in the experimental group to find out their opinions about the learner-centered instruction. One month after giving the post-test, the same achievement test was given to both groups as retention test. Table 3.1 reveals the design of the study.

Table 3.1
Design of the Study

Groups	Pre-Test	Training	Treatment	Post-Test	Retention Test
Control Group	Achievement Test Attitude Test	-----	Traditional Instruction	Achievement Test Attitude Test	Achievement Test
Experimental Group	Achievement Test Attitude Test	Training before and during experime-ntation	Learner-Centered Instruction	Achievement Test Attitude Test Post-Course Interview	Achievement Test

The experimental design used in this study was a pre-test and post-test design. Experimental studies are unique since they directly attempt to influence a particular variable, and also in case where it is properly applied, they are the most appropriate type of testing hypotheses about cause and effect relationships (Fraenkel & Wallen, 2000). Therefore, for this part of the study quantitative data collection methods were used.

3.2. Research Questions

The purpose of this study is to examine the impact of learner- centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English. Based on this purpose, the following specific research questions will guide the whole research process:

1. Is there a significant difference between experimental (exposed to learner-centered instruction) and control groups' (exposed to traditional instruction) performance in the achievement test of medical English?
2. Is there a significant difference between experimental and control groups' performance in the retention of medical English?
3. Is there a significant difference between experimental and control groups' attitudes towards learning medical English?
4. What are medical students' opinions in the experimental group concerning the learner-centered instruction?

3.3. Hypotheses

1. There is no significant difference between experimental (exposed to learner-centered instruction) and control (exposed to traditional instruction) groups' achievement in medical English.

1.1. There is no significant difference between experimental (exposed to learner-centered instruction) and control (exposed to traditional instruction) groups in the pre-test achievement test of medical English knowledge.

1.2. There is no significant difference between experimental (exposed to learner-centered instruction) and control (exposed to traditional instruction) groups in the post-test achievement test of medical English knowledge.

2. There is no significant difference between experimental and control groups in retention of medical English knowledge.

3. There is no significant difference between experimental and control group's attitudes toward the medical English program.

3.1. There is no significant difference between experimental and control groups' attitudes pre-test toward the medical English program.

3.2. There is no significant difference between experimental and control groups' attitudes post-test toward the medical English program.

3.4. Variables of the Study

There are three types of variables in this study: control, independent and dependent variables. These variables listed and described below:

Control Variables

(a) Students' pre-test scores on medical English: The scores of pre-test on achievement test held at the beginning of the medical English course in the first lesson of academic year 2005-2006.

(b) Students' pre-test scores on attitudes toward medical English: The scores of pre-test on attitude test held at the beginning of the medical English course in the first lesson of academic year 2005-2006.

Independent Variables

(a) Treatment (traditional instruction or learner-centered approach instruction): Teacher-centered instruction which was mainly based on lecturing, teacher-initiated questioning, and homework applied for the control group in academic year 2005-2006 in medical English course. Regarding the learner-centered instruction, it was mainly on class discussion, group-work, cooperative learning, and team working applied to the experimental group in medical English course in academic year 2006-2007.

Dependent Variables

(a) Students' post-test scores on medical English: The scores of post-test on achievement test held after the implementation to the control and experimental groups in medical English course in academic years 2005-2006 and 2006-2007 respectively.

(b) Students' retention test scores on medical English: The scores of retention test on achievement test were held after one month following the implementation to the control and experimental groups in medical English course in academic years 2005-2006 and 2006-2007 respectively.

(c) Students attitudes toward learner-centered approach: The attitude post-test results of the control and experimental groups were held after the implementation in the medical English course in the academic years 2005-2006 and 2006-2007 respectively.

These variables can be seen in the following table.

Table 3.2
Variables of the Study

Control Variables	**Independent Variables**	**Dependent Variables**
Achievement pre-test scores Attitude pre-test scores	Treatment (traditional instruction or learner-centered instruction)	Achievement post-test scores Attitude post-test scores Retention of medical English

3.5. Goals and Objectives of Curriculum in Medical English and Description of the Course

When the curriculum designer begins to develop a course or series of courses in Medical English, she/he must consider who the students are, what their motivations will be, and identify which perspective they wish their teachers to have. The curriculum framework must be developed to meet the needs of the educational institution, the students, relevant legislation, and any other stakeholders such as employers of the students.

The language of medicine and health care is quite unique. It is fraught with technical, academic language and replete with slang, colloquialisms, abbreviations and acronyms.

In terms of the objectives of medical English course, the students should be able to:

- read for general information,
- read for specific information,
- make conclusions from given texts,
- find the synonyms and/or antonyms of the words,
- guess the meaning of any unknown word by using the context clues,
- distinguish and/or choose the correct lexical item related to medicine,
- make translations about medicine from both languages at the sentence level and paragraph one,
- use these translations in their special area, medicine,
- use the grammatical structures for communicative purposes,
- translate medical articles, texts, passages and sentences from English to Turkish and vice versa,
- get familiar with medical terminologies,
- get familiar with basic word parts in medicine, prefixes, suffixes, abbreviations,
- get familiar with medical topics and specialists.

It can be said that there appear to be four possible reasons for the use of English in instruction: 1) students might have to read academic materials in

English, 2) students might have to communicate with their counterparts from English speaking countries or non-English speaking countries for medical related purposes, 3) students might have chances to study or work in English-speaking countries, 4) students might have to use English extensively in their future career since it is widely used by medical professionals.

Medical English course is offered compulsory to some of the first year medical students of their formal education at medical faculties. The sample of this study included first year medical students of a state medical faculty, Gazi University, Ankara, Turkey. Medical English course is taught just in the first year of medical education at Gazi University, Faculty of Medicine.

The students receive 56 hours medical English lesson in this course in an academic year in 28 weeks as: 10 hours, 10 hours, 12 hours, 14 hours, and 10 hours in each 5 separate committees respectively. The first academic year includes 5 committees.

Turkish is the language of instruction at Gazi University, medical faculty. The students who get a right to register for the Faculty of Medicine are given a proficiency test on entry since they come from different educational background and their level of English varies greatly. The test is designed to measure whether the students' language proficiency is adequate enough to be able to deal with the content subjects in English efficiently or not. Due to the fact that the students' previous experience of English is general rather than specific, they are given a general proficiency test. If they can pass this examination with the grade of 60 or above, they can start their medical education; otherwise, they have to study Preparatory English for one year. After covering the medical English course in a year successfully, students are not going to take any other medical English in the coming years. The students who are not successful in the first year of studying medical English have to repeat it in the second year.

Regarding exams and evaluation examinations concerning the 1st, 2nd, and 3rd grades are undertaken by class coordinators and class representatives, evaluated in optic scanners and the students are informed about the results the very same day.

Regarding the evaluation of the medical English course, students' achievement is assessed through two mid-term exams during the course and a final exam at the end of the course. These exams are prepared by the instructor.

Regarding the evaluation, the evaluation in the medical English course is conducted through two mid-term examinations and one final examination. This was used for the control group. However, for the experimental group, the project had 30 points (15 points for conducting the project, 10 points for presentation, and 5 points for peer evaluation) out of 100. The two mid-term examinations and one final examination had 70 points.

Medical English is offered for two class hours per week throughout two semesters, a year. Before the implementation took place, the materials were selected. Regarding student, program and pedagogic needs, topics on medical English were specified and distributed over 14 weeks. The content of the course covered the following areas: 1) English in medicine, 2) Reading passages from different medical texts, 3) English grammar and vocabulary, 4) Basic word parts in medicine, 5) Translation from Turkish to English and vice versa of medical sentences and paragraphs, 6) Cloze test of medical paragraphs and passages, 7) Medical terminologies, acronyms, and abbreviations.

Although a blueprint was ready for tasks and activities to be conducted for each week, before the session started, every week they were reviewed or modified based on previous observations, class experiences, and reflections of the implementers and researcher.

In terms of medical English course objectives, the main purpose of the faculty is to train enlightened, critical minded, scientifically oriented people of integrity and good character. In order to reach this purpose, the faculty has been trying to reach the contemporary level in medicine since its establishment under the guidance of its experienced staff.

In the light of the information mentioned so far why the medical students need to learn English can be summarized as follows:

1. To follow their faculty courses successfully: If medical English contents such as texts, materials, activities and teaching-learning process are parallel to medical education in general and to the first year of medical education in particular, it can help students to follow the faculty courses with better understanding. Therefore, students can follow them successfully. Moreover, it helps students to review and reconstruct the similar contexts, topics, and points and this leads to perceive them better. As a result, if the teaching of medical

English is conducted properly, the result directly affects following the faculty courses successfully.

Since English is one of the most crucial means for medical students to deal with their academic needs in their profession, having a proper medical English instruction for them can enable the students to improve themselves in following their faculty courses successfully. Moreover, it can help the first year medical students to satisfy their basic academic needs throughout their academic studied and profession.

2. To be successful in the Examination of Specialization in Medicine (TUS, Tıpta Uzmanlık Sınavı): Every candidate for graduation with a degree of Medical Doctor expects to get a Turkish Specialty Board Certificate issued by the Ministry of Health. To be awarded by this certificate, the candidate first takes an examination which has two phases. The first phase is the foreign language examination that the candidate has to succeed in order to take the second examination. Therefore, the faculty requires them to graduate with a level of English high enough to enable the student to succeed in this examination. After passing the second phase, the doctor gets a right to lead a residency program.

By the end of their studies, the medical students are to take the nation wide examination for specialization in medicine (Tıpta Uzmanlık Sınavı, TUS) or United States Medical License Examination (USMLE). Therefore teaching medical English can help medical students to be knowledgeable enough and well-prepared to achieve their goals such as being successful in the examinations mentioned above as much as possible.

3. To be able to follow the medical literature in order to catch up with the recent developments through articles, books, seminars, and the like: Today, the English language is considered to be one of the most important communication channels throughout the world. Due to the increase in its extensive spread worldwide, English has become the chief medium of international communication in many different non-English speaking countries. This rapid growth has resulted in the need to teach English as a foreign language in many countries. Soon it has become a medium of communication in many educational institutions to meet the rapidly growing need for English as a foreign language to achieve communication both in daily life and in the field of professional careers (Crystal, 1997).

Because of the limited number of medical references in their mother tongue, students have to acquire other medical text-books usually written in English (Ertaş, 1998). Consequently, in order to understand what is written about the subject matter they are searching, they need to receive appropriate instruction of English to make them able to extract the knowledge from those medical references. In addition, medical professionals are required to publish articles, preferably in international conferences in English too. Thus, the English language has revealed itself as an essential tool required for success of medical graduates.

A General English Course (EGP, English for General Purposes) teaches the general skills of reading, writing, listening, and speaking. Thus, it may be successful in preparing the student for a course in more specialized skills such as note taking and report writing. However, if "general" also implies general vocabulary, then some of the vocabulary would be irrelevant to the needs of the students. Therefore, foreign language syllabus should aim to operate on specific topics giving rise to relevant lexis. Quite normally, foreign language provided at the Faculty of Medicine should provide opportunities for the learners to meet their needs.

3.6. Experimental Procedures

The experimental procedures in this study could be described as procedures before the implementation started, during the implementation and after the implementation.

Prior to the implementation, in December 2004, the curriculum of medical English was examined and a table of specifications (Appendix B) was prepared with regard to the (multiple choice) achievement test to be used. First, from a pool of 80 test items on medical English, a blue print was prepared based on the table of specifications. Several test items were examined that appeared in textbooks that held suitable level. Next, the tests were pilot tested with a group of 30 learners who took this course the previous year. According to item analysis findings of the piloted multiple choice test, and expert opinion, the necessary modifications, such as constructing new items or modifying the available items were made. In the meantime, an attitude scale was prepared and pilot tested with the same learners mentioned above**.**

The researcher spent two academic semesters (2004-2005) academic year to get familiar with the medical faculty, what was going on during academic year regarding teaching styles, atmosphere, decision makers, learning styles, classroom climate, students' attitudes, etc.

Medical English course in both the control and experimental groups was taught by the same instructor. The students take this course at the beginning of their studying at Gazi University, Medical Faculty. The students (n=90) of 2005-2006 academic year was selected as the control group and the students (n=90) of 2006-2007 academic year was selected as the experimental group. For the process of the implementation, the instructor and the researcher decided to meet every week before and after the sessions and once in every two weeks, apart from the regular sessions, to share and specify the instructional plans, the code of conduct, the materials and activities to be used, and their reflections about the particular learner-centered approach materials and activities used during the implementation. Consequently, the experimental group was subjected to learner-centered instruction, and the control group, to the traditional instruction.

The lesson hours were 54 total in the first academic year, 27 weeks. There were two hours every week (group A, 1:30-3:30 p.m. and group B, 3:30-5:30 p.m.). The lessons were held on Tuesdays.

In the first week before the implementation, the achievement test (multiple-choice test), and attitude scale were administered before the implementation to both the control and the experimental groups. The implementation lasted for 14 weeks in the academic years 2005-2006, 2006-2007, for the control and experimental groups respectively.

Ultimately, after 14 weeks the implementation finished and the instruments that were administered before the implementation (achievement test, attitude scale) were also administered after the implementation.

In week 17 and 18 the summative interview was held with the experimental group learners. Finally, a retention test, that was the same as achievement test, was administered to the control and experimental groups one month after giving the post-test. Consequently, data analysis procedures based on the final data were done.

During the administering of the achievement test and attitude test, both the researcher and the instructor were present to ensure that there was no confusion and problem.

Before, during, and after the implementation of the learner-centered approach, the implementer (the instructor) and the researcher came together every week before and after the lesson to discuss and to share the particular points including lesson plan of the week, related activities, materials, and discuss the implementation. Consequently, critiques about the tasks and activities were shared and discussed and were sometimes means to modify the instructional design and plan for the following session(s). Moreover, reflections were important to understand the implementer's (instructor's) perceptions about learner-centered approach, implementation and instruction, or its burdens and comforts during the implementation.

For the implementation of the experimental study, an instructional design was prepared. Based on the literature on learner-centered approach, activities and tasks that could be used during the implementation were prepared. The activities were mainly drawn upon the dimensions of activities in learner-centered classes. However, during the process of the implementation, new activities and tasks could be designed and added. These have been based on the researcher's observation field notes, consulting with experts as well as other medical English instructors, and the reflections between the researcher and the instructor during weekly meetings.

The implementer of the study was the medical English instructor at Gazi University, Faculty of Medicine who had 20 years of teaching experience in General English as well as medical English. The second, the eighth and ninth weeks, out of 14 weeks, were conducted by the researcher. It was a team teaching. This eliminated the researcher's bias in the study and implementation.

The researcher observed the control and experimental groups, two sessions respectively in the third and tenth weeks to be reassured that traditional and learner-centered instructions are conducted in related groups.

The teacher-centered group was taught mainly by lecturing, teacher-initiated questioning and many pieces of homework, while the learner-centered group was taught mainly by class-discussion, group-work, cooperation, and the project.

Before each mid-term examination and final examination, students did not attend the lessons in both the control and experimental groups. Moreover, there was no lesson on National Holidays (Bayram, Doctor's Day, and New Year).

In the medical English course, the passing grade was 50 and above out of 100. There was one make-up examination for whom they could not get this point. Regarding evaluation, it was done by the instructor through three exams (two mid-term exams and one final exam) in the control group. The evaluation for the experimental group was conducted through the three exams (two mid-term exams and one final exam), project 30% in total, (15% conducting the project, peer evaluation of the projects 5% out of 30%, and presentation 10% out of 30%.).

In the 8th week, the subjects in the experimental group were asked to conduct a project. The project included 22 medical education topics. These topics were chosen since medical students should deal with them frequently and also these topics are general topics for their studies. It can be seen in Appendix C.

At the end of the treatment, the same achievement test and the attitude test mentioned earlier were given to the students in the both groups again as post-tests. In addition, a post-course interview was conducted with the students in the experimental group to find out their opinions regarding the suggested program conducted to the experimental group during the experiment. One month after giving the post-test, the achievement test was given to both groups for the third time to measure retention of medical knowledge in the experimented units.

Data collection was realized through employing both an experimental and a qualitative design. Experimental, because it has given statistical results in comparing students' achievement and attitude on being exposed in traditional instruction as well as learner-centered instruction; input/output measures were determinants in reaching conclusions. Moreover, the same achievement test was conducted as a retention test one month after giving the post-test to both groups.

3.7. Data Sources

The participants of this study were first year medical students (N=180) taking medical English Course at Gazi University, Faculty of Medicine, Ankara, Turkey, in academic years 2005-2006 and 2006-2007. In the first section, the experimental study participants, and then the interview participants are explained.

3.7.1. Experimental Study Participants

Learners attending their first year (first semester of their year) at Gazi Medical Faculty, Ankara, Turkey, formed the sample (n=180). The students in academic year 2005-2006 were the control group. The students in academic year 2006-2007 were the experimental group. Prior to study, both groups showed homogeneity regarding their General English knowledge (both groups passed General English language proficiency exam before starting medical faculty, so their level was pre-advanced one). The course in both groups was conducted by the same instructor. Table 3.3 shows the distribution of the subjects in the study.

Table 3.3

Distribution of Subjects of the Study

Gender	Experimental Group	Control Group	Total
Male	25	22	47
Female	65	68	133
Total	90	90	180

The sample of this study included 180 first year medical students at Gazi University, Faculty of Medicine, Ankara, Turkey. These subjects were assigned to control group and experimental group and were asked to respond to an achievement test and an attitude test as pre-test to measure their achievement level in medical English and their attitudes toward medical English.

The control group received traditional instruction while the experimental group received learner-centered approach instruction. The researcher trained the instructor regarding learner-centered instruction and the related instructions, materials, implementation, activities, and the differences between traditional instruction and learner-centered approach instruction. The treatment continued 14

weeks. Control and experimental groups had 2 hours of instruction each week, respectively. Due to National holidays, Doctor's Day, New Year, and before the final exams, there was no lesson on these dates.

At the end of the treatment, the same achievement test, and the same attitude scale mentioned above were given to the students in both groups again as post-test. In addition, students in the experimental group were interviewed to find out their opinions about learner-centered instruction used by the experimental group during the experiment. One month after giving the post-test, the same achievement test was given to both groups for the third time to measure retention of medical English.

The data collected through the achievement test and the attitude scale were analyzed through descriptive and inferential statistics such as mean scores, and t-test. The interview data were subjected to content analysis where students' responses were described and interpreted.

The control group included 90 and the experimental group included 90 subjects. Due to not attending class regularly, 60 students from the whole subjects dropped out of the study. In addition, 15 students from the control group and 15 students from the experimental group did not participate in some of the tests. As a result, a total of 90 students from the control group, 90 students from the experimental group participated in all phases of the study.

3.7.2. Interview Participants

There was the pilot interview with 8 students, 6 females and two males, in the experimental groups. It was done with the help of a Turkish translator in Turkish since the students in the pilot interview preferred to be interviewed in Turkish. In order to avoid bias and not to affect the students negatively during the pilot interview the researcher asked the instructor not to be present during the interview. This pilot interview was tape recorded. Two pilot interviews were done in English by the researcher in English and it was tape recorded. After the piloting, it was consulted and reviewed with an expert in curriculum and instruction. Accordingly, the necessary revision was made. One of the points was about the Turkish translator with more probes providing and training during the interviewing.

A semi-structured interview was conducted after the implementation with 25 students in the experimental group. There were 20 females and 5 males in the interview. In order to avoid uncomforting situation, bias and negative effects of the instructors' presence during the interview on the subjects' responses and statements, it was decided not to be conducted by the instructor. Therefore, the Turkish translator who conducted the pilot interview was asked, informed and trained to conduct the interview in Turkish with the 12 subjects who preferred the interview in Turkish. The rest of the subjects, 13 subjects, were interviewed in English by the researcher.

3.8. Data Collection Instruments

In this study, an experimental design was used. An achievement test, an attitude scale, and semi-structured interviews were used. These are explained in detail in the following sections.

3.8.1. Achievement Test

The achievement test on medical English included 50 items developed by the researcher (see Appendix D). The test was used to determine students' achievement on medical English knowledge before the experiment, at the end of the experiment, and one month after the experiment.

Learning objectives of medical English course were determined based on Gazi University, Faculty of Medicine's curriculum guidelines. Based on the framework of course objectives of the medical English, different types of items were determined, and a table of specifications was constructed (See Appendix B). By considering these items, an achievement test on medical English was developed. The test was developed in the form of multiple choice.

After developing the initial test, it was given to a pilot group, 30 students who already studied medical English in the 2004-2005 academic year to assess clarity, time required and item difficulty of each question. In the piloting of the achievement test, it had 80 items multiple choice type questions. Based on the item analysis, 30 items were eliminated. In addition, some of the items in the test were revised to enrich clarity. After the revision, the total number of items included in medical English achievement test was 50.

The achievement test was applied to 180 students (90 students control group, 90 students experimental group).

The instrument was administered as pre-test and post-test and also as a retention test for the academic years, 2005-2006 (control group), 2006-2007 (experimental group).

An achievement test (see Appendix D) was developed by the researcher in the following subsequent steps:

- Selection of the leaning to be tested: Initially, the objectives related to medical English were determined.
- Development of table of specifications: Then, the table of specifications was prepared. The writing of the test items should be guided by a carefully prepared table of specifications. The course was designated for each related objective and table of specifications was prepared for the test (See Appendix B).
- Development of test items: Next, an 80 item multiple choice tests were prepared, using the course outlines, textbooks, lecture notes, mid-term exams, and final exams of the related course. Items were selected according to their importance for each objective.
- Pilot study: For the purpose of piloting the test, the 80 item test were administered to 30 other first year medical students during spring semester of 2004-2005 academic year at Gazi university who studied medical English in previous year.
- Revision of the test: Some of the questions were revised by considering rules of item writing and test preparation.
- Final form of the test: Then the final form of the test was prepared.
- The content validity of the test was verified through an expert judgment and pilot-tested by a group of learners (n=30) who had attended medical English course in their former year (2004-2005 academic year) at Gazi university, faculty of medicine. While the learners were responding to the items, they were required to write any difficulty they confronted when responding to the items. Finally, the responses were run on item analysis computation. The item analysis findings that showed the items below <.1 and above >.9 were eliminated. Consequently, 30 items were eliminated.

Finally, some items were reworded and the instrument was subjected to experts' judgments again. The Cronbach Alpha value was .82, which indicates a high level of reliability. The revised version of the test consisted of 50 items in total (Appendix D).

3.8.2. Attitude Scale

Both the experimental and the control groups were administered an "Attitude Scale" on medical English program before and after the implementation (see Appendix E). The attitude scale consisted of 38 items that aimed at examining learners' attitudes toward medical English program from several perspectives: the course, the activities and assignments, and affective aspects in general. In order to construct the instrument, 40 items were used to measure the above perspectives. These items were comprised of adjectives that could depict attitudes measuring like / dislike, enthusiasm / boredom, relevance / irrelevance, usefulness, importance / unimportance, interested / uninterested, necessity / no necessity, forgetfulness, self - confidence / anxiety, easiness / difficulty, and obligation / willingness.

The attitude scale was pilot tested with a group of learners (n=30) who attended the medical English course in their former year. The content validity of the test was verified through expert judgment (a subject area professor).

The final version was negotiated with the help of a professor of education, specialized in curriculum and instruction. Consequently, the attitude scale consisted of 21 positive and 17 negative items on a five-point Likert Scale ranging from "strongly disagree" to "strongly agree," where the midpoint was "uncertain." The Cronbach Alpha was used to measure the score reliability of the attitude scale in the pre-test and post-test. The scale reliability of the attitude scale in the pre-test was Cronbach Alpha 0.88 (n= 90), and 0.92 (n=90) in the post-test when measured at the confidence level of .05 (Appendix E).

Moreover, in order to measure the attitudes of medical English course and first year medical students, Akar (2003) which has proven validity and reliability with a reliability coefficient of $\alpha = 0.91$ was considered.

3.8.3. Semi-Structured Interview

A semi-structured interview was conducted with 25 students in the experimental group after the implementation to gain their opinions regarding learner-centered instruction. The interviews were recorded with the permission of the interviewees and the recordings were transcribed into written data. The transcriptions were reread by an outsider for reliability purpose. 12 interviews were conducted in Turkish by a Turkish translator trained by the researcher and 13 were done in English by the researcher.

The interview encompassed the following dimensions: 1) perceptions about the course; 2) expectations about the course; 3) fulfillment of expectations and goals and objectives; 4) perceptions about the course materials; 5) perceptions of techniques and strategies used, e.g., learning activities; 6) motivation; 7) perceptions of the evaluation process; and 9) additional comments and suggestions (Appendix F).

The piloting of the interview schedule was realized with a group of first year medical student in the experimental group. There was the pilot interview with 8 students, 6 girls and two boys, in the experimental groups. 4 interviews were done with the help of a Turkish translator in Turkish since the students in the pilot interview preferred to be interviewed in Turkish. 4 interviews were done in English by the researcher. In order to avoid bias and not to affect the students negatively during the pilot interview, the researcher asked the instructor not to be present during the interview. This pilot interview was tape recorded. After the piloting, it was consulted and reviewed with an expert in curriculum and instruction. Accordingly, the necessary revision was made. One of the points was about the Turkish translator with more probes providing and training during the interviewing.

After one week, the interview was conducted with 25 students, 20 girls and 5 boys, in the experimental group. In order to avoid uncomforting situation, bias and negative effects of the instructors' presence during the interview on the subjects' responses and statements, it was decided not to be conducted by the instructor. Therefore, the same Turkish translator who conducted the pilot interview was asked, informed and trained to conduct the interview with the 12

subjects who preferred Turkish interview. The rest of the subjects, 13 students, were interviewed in English by the researcher.

3.9. Data Collection Procedures

First, the achievement test, the multiple choice test, (n=90) (Appendix D), and the attitude scale (n= 90) (Appendix E) were administered to both the experimental and the control groups prior to treatment (September 2005 and September 2006 respectively) at the beginning of the academic years, 2005-2006, 2006-2007 respectively. Although the sample was more than 180, not all of the learners could be reached in the first week of the semester, due to either absentees or due to the following reasons explained. When the instruments were returned, it was seen that some attitude scales were not responded to or were irrelevant for evaluation purpose. For instance, 15 of the attitude scales received from the learners included responses on one rating scale only, and 12 attitude scales were only responded on two items.

The implementation started in week 2. The weekly implementation program can be seen in Appendix G for control group and in Appendix H for experimental group. One lesson plan is explained in detail as well in Appendix A. In the first week, the pre-test achievement test and attitude scale were administered. The researcher observed them. The post-test achievement test as well as attitude scale were administered in week 16. The researcher observed them as well.

There were no classes on National Holidays (Bayram, Doctor's Days, and New Year). Therefore the implementation lasted 14 weeks for the control group and experimental group.

4 observations were held, two for control group and two for experimental group. The purpose was to be sure that there was difference between traditional instruction and learner-centered instruction and whether the related lesson plans and activities were conducted, and/or how and how much they were conducted.

The interview with experimental group was held in two weeks after conducting the post-test with the experimental group. The retention test was conducted one month after giving the post-test.

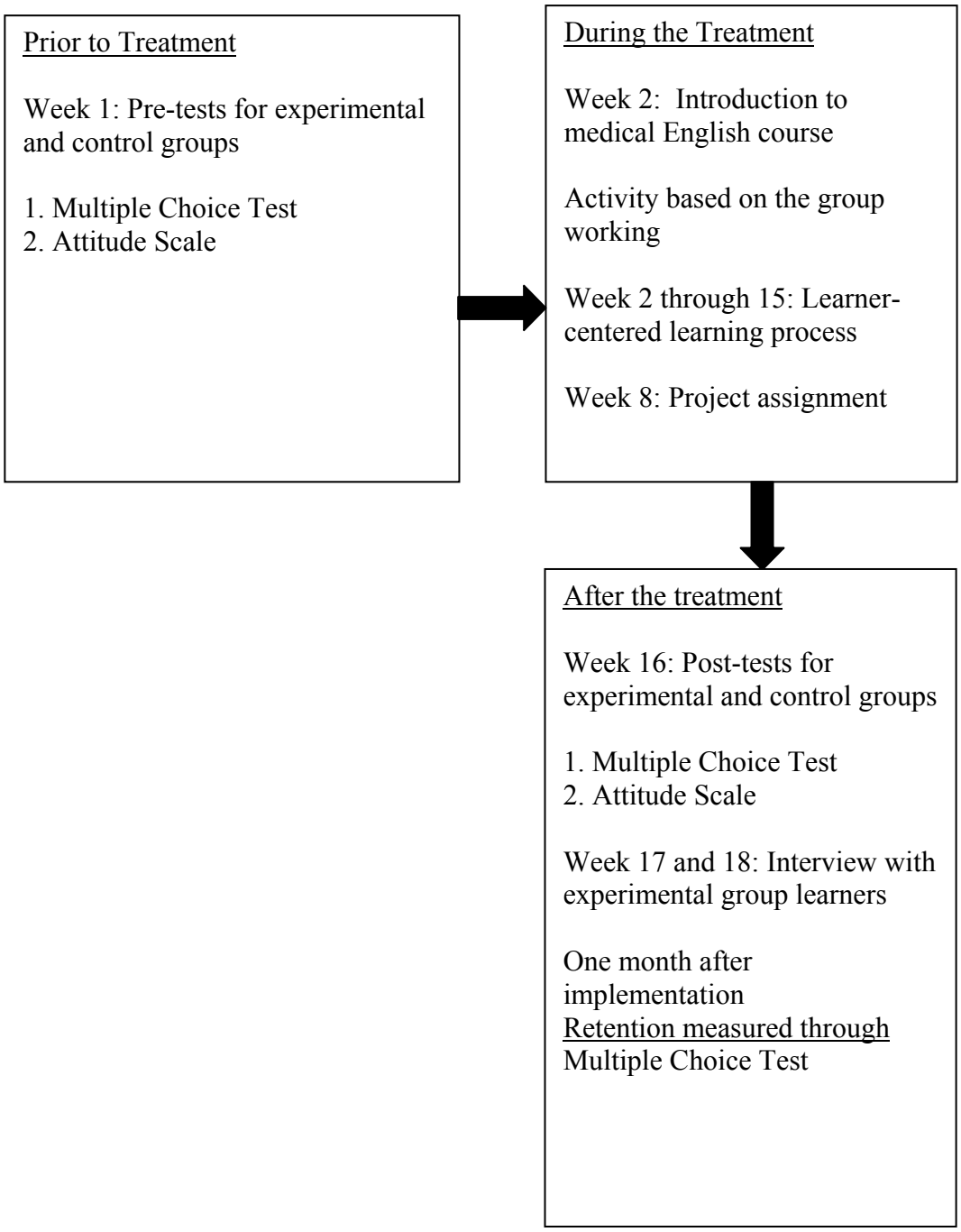

Figure 3.2: Data Collection Procedures

3.10. Data Analysis Procedures

The analysis procedures for the pre-test post-test design and the semi-structured interviews are explained in the following sections respectively.

The quantifiable data in the achievement test and attitude scale were analyzed employing descriptive and inferential statistics. Quantitative procedures involved conducting independent samples t-test to understand the difference between the experimental and control groups with regard to achievement, and attitudes. The total scores were obtained and the findings were compared through independent samples t-test for the pre-test, the post-test and the retention test scores. The total scores of the experimental and the control groups were compared through independent samples t-test computations. For the attitude scale, the negative items were transferred into positive items. Next, the mean scores were obtained for the pre-test and the post-test results. Finally, an independent samples t-test was run to examine learner attitudes toward medical English course. The statistical significance level was used as $\alpha < .05$ for all the independent samples t-test findings.

Regarding the semi-structured interview, there were 12 students who were interviewed in Turkish by the Turkish translator and 13 students who were interviewed in English by the researcher. The total 25 subjects' interviews were tape recorded and they were transcribed and reviewed statement by statement immediately after the interviews with the Turkish translator and researcher. All the interviews referred to are reported respectively.

The items in the semi-structured interviews were thematically coded. These qualitative data were analyzed through content analysis and reported thematically.

The categories that emerged through thematic analysis of the interviews clustered under 7 themes. The list of the categories is as follows:

1. Goals fulfillment
2. Perceptions about the resources
3. Perceptions about methods and strategies
4. Motivating aspects
5. Assessment tools and approaches
6. Influence of instructional approach on learning style
7. Suggestions for further practice

The emerging themes were linked to the interview data, the research questions, and the literature. Data obtained from achievement test, attitude scale, and semi-structured interviews were compared to reach meaningful conclusions. Based on the triangulation of quantitative and qualitative data, conclusions could be drawn to get more insights of the findings of the attitude scale.

3.11. Limitations of the Study

One of the limitations of this study is that the implementation of the control group and experimental group was in two different periods. The reason why the researcher was not able to equalize the implementations in the same period was that some of the students of the control group may have taken part in the experimental group lessons and vice versa. Since the students in the control group in academic year 2005-2006 were divided into two sections, some students from the first section could have participated in the second section and vice versa. It was true for the experimental group in academic year 2006-2007 as well. That is why the researcher had to conduct the implementation in two different periods.

This study was limited to one medical faculty. It was not possible to include all the first year medical students in all medical faculties due to the time allocated for the study. As a result, it cannot be generalized to the whole medical faculties. Since this study was carried out at one medical faculty, it may limit its generalizability to other medical faculties.

The needs which were assessed for the group of students in this medical faculty may not be congruent to other learner groups that will study in coming years since the institutional and individual goals and needs may change.

The control and experimental groups were not the same in terms of age, gender and general background knowledge in General English and learning styles. There were individual differences in general.

Another limitation of this study is that the covariance test was not conducted in this study. It could affect the prior achievement of English knowledge of the participants in this study.

The participants in this study could have learned English or improved their English knowledge apart from participating in the medical English course. This could affect the results of the study.

CHAPTER IV

RESULTS

The purpose of this study was to examine the impact of learner-centered teaching and learning process on pre-advanced first year medical students' performance, attitudes, and retention in medical English. In this study quantitative and quantitative research methods were utilized to find answers to the research questions. In line with research questions, this chapter starts by explaining the findings of the achievement test, followed by the attitude test.

Then, the descriptive findings obtained through the semi-structured interviews with experiment group learners that reveal their perceptions about medical English, learner-centered, and learning environment, and the project are explained.

4.1. Multiple Choice Achievement Test Results

In response to the first research question, findings based on the multiple choice test prior to the implementation showed that there was no significant mean difference in learner scores between the experimental ($\overline{X}$ =52.22), and the control groups ($\overline{X}$ =51.64) [t(178)= -0.304, p= 0.76>0.05] . Thus, both the experimental and the control groups were regarded as similar in their medical English performance prior to the implementation. Table 4.1 reveals the total scores learners obtained in the pre-test.

Table 4.1

Comparison of Multiple Choice Pre-test Scores of Experimental and Control Groups

Group	N	$\overline{X}$	SD	t value	df	p
Experimental	90	52.22	13.64			
				-0.304	178	0.76
Control	90	51.64	11.77			

Hypothesis 1.1: There is no significant difference between experimental and control groups' pre-test scores as measured through a multiple-choice test (Accept).

Descriptive statistics in the post-test results showed that the experimental group that was subjected to learner-centered instruction had a higher level of achievement. However, this finding is not significant as measured by an independent-samples t-test. Table 4.2 reports the data analysis results obtained from the post-test data. Although there is a slight mean difference in the total mean scores of the achievement test in favor of the learners exposed to learner-centered approach ($\overline{X}$ = 79.22), in comparison to the control group ($\overline{X}$ =76.75), the difference is not significant, p>.05. This indicates that student achievement did not differ with respect to the learning environment they were exposed to as measured by a multiple choice test.

Table 4.2

Comparison of Multiple Choice Post-test Scores of Experimental and Control Groups

Group	N	$\overline{X}$	SD	t value	df	p
Experimental	90	79.22	8.93			
				1.50	178	0.135
Control	90	76.75	12.74			

Hypothesis 1.2: There is no significant difference between experimental and control groups' post-test sores as measured through a multiple-choice test (Accept).

The second research question aimed at finding whether there was a significant difference between experimental group (subjected to learner-centered instruction) and control group (subjected to traditional instruction) in retention of medical English knowledge or not. The retention test was conducted after one month.

The next analysis was based on the retention test results (Table 4.3). The retention test scores were compared by an independent samples t-test and the findings reveal a significant mean difference ($\overline{X}$ = 92.18) in favor of the experimental group [t(178) = -7.584, p=0.00<0.05]. The finding of this nature indicates that learning through learner-centered approach is more advantageous in the long-run.

Hypothesis 2: There is no significant difference between experimental and control groups in retention scores as measured through a multiple-choice test (Reject).

Table 4.3

Comparison of Multiple Choice Retention Scores of Experimental and Control Groups

Group	N	$\overline{X}$	SD	t value	df	p
Experimental	90	92.18	8.47			
				-7.584	178	0.00
Control	90	82.06	9.40			

4.2. Attitude Scale Results

The third research question aimed at finding whether there was a significant difference between experimental (subjected to learner-centered instruction) and control groups' (subjected to traditional instruction) attitude toward medical English course as measured through an attitude scale. Prior to the implementation, pre-test results of the attitude scale showed that there was no significant difference in the mean scores of learners' attitude toward medical English course between the experimental ($\overline{X}$ = 123.91) and the control groups

($\overline{X}$ = 122.05) [t(178)=-0.867, p=0.39>0.05]. This finding indicates that the attitude of learners' were similar in both the experimental group and the control group (See Table 4.4).

Table 4.4

Comparison of Attitude Pre-test Scores of Experimental and Control Groups

Group	N	$\overline{X}$	SD	t value	df	p
Experimental	90	123.91	15.47			
				-0.867	178	0.39
Control	90	122.05	13.15			

Hypothesis 3.1: There is no significant difference between experimental and control groups' attitude pre-test scores toward medical English before the implementation (Accept).

After the implementation, the means of the attitude test post-scores of the control and experimental groups were compared through a t-test. Findings indicate that there is a significant difference between the experimental ($\overline{X}$ = 133.77 and the control ($\overline{X}$ = 117.27) groups' attitudes toward medical English course [t(178)= -6.033, p=0.00<0.05] after the implementation in favor of the experimental group (see Table 4.5).

Table 4.5

Comparison of Attitude Post-test Scores of Experimental and Control Groups

Group	N	$\overline{X}$	SD	t value	df	p
Experimental	90	133.77	20.71			
				-6.033	178	0.00
Control	90	117.27	15.62			

Hypothesis 3.2: There is no significant difference between experimental and control groups' attitude post-test toward medical English when subjected to learner-centered instruction (Reject).

The mean scores of learner attitudes toward medical English in the experimental group indicated a positive attitude toward medical English course.

Accordingly, the descriptive data in semi-structured interview may provide us with more explanatory descriptive data (see section 4.3).

4.3. Interview Results

25 subjects from the experimental group were interviewed. The interviews with the students exposed to learner-centered instruction focused on the questions regarding their goals in taking the medical English course, their expectations of the course, the materials of the course, the activities, the project, the evaluation, and their suggestions. This section describes the findings of the interviews with the experimental group.

4.3.1. Goals Fulfillment

As regards the goals fulfilled, most of the interviewees said that learning medical words, terminology and literature were their goals and they were mostly satisfied. 16 interviewees said that they did not have clear expectations regarding the course at the beginning of the semester. However, in the time their expectations were shaped as they processed throughout medical English course as well as other medical lessons. They added that they learned issues beyond their expectations. 10 interviewees mentioned that mostly they wanted to learn medical terminology in order to follow the literature since it is necessary to improve their English in medical education. All the interviewees agreed that they learned essential information about medical English as well as medical knowledge overall. One of the interviewees (Ayşe) added that her expectations were fulfilled; nevertheless, she still had concerns whether she would be able to remember and apply what she has learned in coming years. She said:

> Although we learned many things but after this year we wouldn't have any medical English lesson. I'd rather we had it so we could practice and improve our English, I mean medical English knowledge (Ayşe).

Another female learner (Ebru) stated that she would like to follow medical literature which is mostly in English. This would have helped her to be able to understand medical topics better while studying medical topics in Turkish.

One of the learners (Ali) stated that he wanted to learn the translation of medical sentences and paragraphs from Turkish to English and vice versa. He said:

> Learning the translation is the thing I wanted because in the second, third and other years of medical education, it is good and necessary for me. So next years I can learn and understand medical literature (Ali).

In addition to the above, Ali believed that his goals were fulfilled beyond his expectations because some medical topics were undertaken in a variety of ways. He gave an example with medical terminology, reading passages, translation and the projects. He explained that during these activities he was able to refresh his mind, remember them, practice them and he has understood them. He still held the idea that lack of practice in English during medical English lesson was a shortcoming.

4.3.2. Perceptions about the Course, the Learning Environment

Learner perceptions about the course were not limited to the learner-centered instruction and the related activities. Also, learners' knowledge of medical knowledge as well as medical education related to learning and teaching medical English were undertaken.

Learner- Centered Activities

The interviewees expressed their satisfaction towards the instruction they were exposed to. Funda said that the way she and her friends learned was effective since they enjoyed learning the relevant topics and being involved in the activities, especially group work ones. This approach was enjoyable and also increased their motivation. They say that the presentations realized by their friends remained in their mind and facilitated to remember the same issues and learn similar issues in their other medical lessons as well. Funda said: "That day we, as the group, preferred to do a lecturing type of presentation but we discussed and decided to do a presentation with Power Point to attract our friends' attention and make our presentation more enjoyable. We did it. It was nice because after the presentation, our friends congratulated us. And it was good experience and motivation for us." Such a finding indicates that learners also changed the way they need to deal with learning and being instructed. They indicated awareness of the weakness of just listening to the instructor, doing the reading passage exercises and filling the blanks. They also indicated awareness of the strengths of

learner-centered learning that made them active, and peer-evaluation choice they had in the presentations they gave.

Regarding the group project work, most of the learners were satisfied. However there were different opinions expressed. For instance, Fatma explained that group work activities had both strengths and weakness. She stated that she particularly liked learning from her group members or explained an issue to the group without any anxiety of making mistakes. The weaknesses were related to whom they were grouped with. The accidental or random groupings were not considered as very fruitful. She complained that someone might be grouped among people whom she or he did not like personally. Hasan, Rukiye and Betül also expressed a similar point of view that agreed with the above statement. In spite of this fact, Betül emphasized that group work activities fostered their learning. She expressed that they were not used to doing such group work, but she was satisfied to do so and deal with peer learning and peer evaluation overall. Although she felt lucky at times to hear different opinions from her classmates, Hasan pointed that individual differences caused difficulty in their group work activities such as the project. He gave an example saying that some did not take responsibility or task to do, and the burden was on the shoulders of one or two individuals in the group. Consequently, he felt unsatisfied.

Ownership of Learning

Ownership of learning was perceived from several perspectives. For instance, Canan saw this as being able to utter one's own idea in problem solving activities, class discussions while the topic or questions were put forward. This made her more comfortable and self-confident to search for reasonable solutions and answers. She particularly was satisfied since the instructor was present during these times and she was able to manage it in the class.

As regard to ownership about preparing the project, the interviewees expressed that they were not used to take full responsibility of doing a particular task unless there was guided control. Banu mentioned that it was very useful experience for them to do the project although at the beginning they thought that it was very difficult. She added that while doing the project, they learned how they were able to manage it. Besides, if the instructor had helped and controlled them mostly, they would have been able to learn so much.

Decision – Making

One of the interviewees, Sibel, uttered that the students were given choices in terms of conducting the project. However, she mentioned that the students could have felt better if they had chance to decide on choosing their group members. Especially, they did not feel comfortable that they were told to be in the group with the students whom they do not like.

In terms of peer evaluation, they enjoyed it because they were able to learn from their friends in natural way. Such a finding indicates that the learners fell comfortable with the idea of dealing with alternative assessment. Moreover construct knowledge in groups in conducting the project and presentation helped them to learn more and it facilitated their learning.

4.3.3. Authenticity in Learner-Centered Learning Environments

Authenticity in the classroom environment was mentioned as the authenticity of course goals, the active learning environment, and the tasks.

Authenticity of Course Goals

Although the learners were aware of the fact that they needed more time and practice in medical education to understand whether the goals of the course were enhanced, they did strongly believe that they raised awareness of what medical English was about. For instance, Ebru said: "Considering what we learned, I believe that the knowledge we constructed and accumulated in medical English course will help us to understand medical education lessons, medical literature, and medical topics better." Another interviewee, Cahit said: "When I compare what we have learned in medical English course with what we have learned in other medical lessons, I realized that I am able to relate the topics, texts, words, terms and main ideas to each other. Medical English topics and activities were parallel to our medical education."

Authenticity of Learning Environment

Emel indicated her appreciation and happiness in the type of activities she undertook, but complained about the crowded class and insufficient time for practice medical English speaking in the class so much. As she was informed and aware of the policy and the schedule of the medical education program and medical English course, she suggested that the students might relate their learning

to authentic contexts especially in terms of speaking if they were provided with more class hour or fewer numbers of students in the class. She believed that even 10 more class-hours might have helped them in the learning medical English more.

Another interviewee, Kaan, mentioned that he was satisfied with medical English topics because they were different from General English and the activities made them refer to some Turkish medical notes as well to handle the tasks. He emphasized that the activities persuaded the students to search, consult, and deal with a variety of sources such as Turkish medical texts and materials, English medical texts and materials, dictionaries, and web-sites. He reminded that due to heavy program in medical education, medical students might not have sufficient time to do so all the time but it helped medical students to understand medical education and medical texts, materials, and literature better, positively.

Authenticity of Tasks

The learners expressed that the way they undertook certain medical topics made them practice and it raised their awareness of those particular topics through group-working, conducting the project, and presentations. Emel voiced that there are lots of things in medical education to learn, and there are specific topics and lessons to learn in the first year medical education, so medical English was in harmony with first year education and it could provide the students with more and supportive information regarding their first year medical lessons and medical education. She stated that through various activities and discussions about many topics essential to medical English course, she raised awareness of how she might act in future medical authentic contexts. She stated that she was convinced that she constructed and accumulated sufficient background knowledge about different medical topics and it can help her to deal with medical contexts in future much better. She added that what she had to manage regarding her personal studying and working to be able to manipulate the knowledge, she has accumulated to a great extent.

4.3.4. Motivating Aspects in Medical English Learning Environment

Findings in this section mainly focused on two types of motivational variables explained in the following paragraphs.

Cooperative Learning

Learners stated that certain activities they were exposed to were specifically very motivating and provided them with the knowledge they could consider and use in their future medical education studies. Esra said that changing the roles of the instructor from the complete sources of help, answers and learning to be the facilitator and guide was very effective, and such change enabled the students to be exposed to divers learning perspectives. She believed that group tasks and referring to what had learned in the group and among the groups raised awareness of the differences among individuals and also was means to take ownership of what one thought because there was not right answer to the problems they tried to solve.

The Learning Environment as a Motivational Factor

Learners also expressed their satisfaction with being in a flexible classroom environment. They felt that they could express themselves freely with no fear of making mistakes, and no feeling of being inferior to the others when making mistakes. This motivated them positively for their future studies. Particularly, having the opportunity to conduct the project on their own as groups and have important roles in their learning motivated them to a great extent as well. Kaan said that it was the first time he had the opportunity to act as a microbe/ germ in the presentation. His classmates admired his acting, his skills and it was very effective in their learning. Leyla expressed her satisfaction with having the active role in the project as the other members had. She stated that sharing the responsibilities, sharing information, coming together, and organizing our information helped the students to follow medical education and medical studies. Emel said that she could overcome her own weakness in the course of time while preparing the project and in presentations while learning from her peers by evaluating the way different tasks and particular task or activity was conducted by the other students. Consequently, the way she learned medical English impacted on her learning style and made her become more organized in her medical studying and learning through cooperating with her peers.

4.3.5. Perceptions about Assessment

Learner perceptions about assessment are explained under two main themes.

Knowledge Construction Through Final Assessment

All interviewees agreed that project evaluation was an effective means to foster their learning on a particular topic as well as general topics in medical education. Aysun said that the students had a need to listen to their peer's ideas and interpretations more carefully and think critically about what had been said. Ali said that he and his friends in the group first had a misconception about conducting a project. In fact they thought that they should have just written and submitted it to the instructor. However, after the instructor clarified the purpose of assigning and conducting the project they understood that it was one way of learning, sharing, cooperating, and assessment. First, the group came together and made a draft. The outline, the steps of organizing the different sections of the project, sharing the responsibility and tasks, and the way the members could help one another to conduct the project successfully were the points discussed and decided. Ahmet, Leyla, and Banu complained that they had difficulty in the way they should present the project. However, through consulting with the peers, finally they decided how to manage it. Doubtless, project assessment can provide a wealth of information about learners' knowledge accumulation. However, medical English instructors should be very well- articulated on how first year medical students need to deal with conducting the project which should be relevant to first year medical students' medical studies and education. Instructors should be aware that project or other ways of cooperative learning can provide learners with the opportunities to reflect on practice and its implications not only in medical English learning process but also in medical education as well as medical studies. Therefore, it may lead to more effective way of learning and studying medical subjects, topics, and literature in their future medical studies since they are would-be medical professionals as medical doctors.

Peer Evaluation

All the interviewees agreed that peer evaluation was very effective and helpful. However, almost all of them emphasized that being objective could be questionable since they were all classmates and tried to express positive sides more than shortcomings. Moreover, they welcomed the idea that the evaluation

was accompanied by the formal examinations as two-mid term examinations and one final examination. Accordingly, there was the balance in the evaluation. However, the positive impacts of peer evaluation should be highly considered.

With respect to peer evaluation, Ali, trying to choose the proper statements, said that it was difficult to evaluate the contribution of a person to the learning or production of a group. He admitted that it was easy to see his own and the others' weaknesses in the group, but had difficulty to express them. With the explanations of the instructor regarding the purpose of peer-evaluation and the positive sides of it, we felt very comfortable about it.

Likewise, Fatma complained that she could not have been objectively critical about a peer's presentation because the students had tented to misunderstand such criticism, and felt reserved to express her feelings about the presentation. However, since the instructor explained and clarified the purpose of peer evaluation, all of us were comfortable enough to express our ideas to each group, to our group, and to the class after the presentations and while evaluating. Like some research studies, in this study peer evaluation is supported as a means for contributing to student learning.

4.3.6. Suggestions Offered by Learners for Future Practice

In this section, the suggestions of interviewees are presented.

Resources Used in Learner-Centered Instruction

The resources are suggested to reflect the parallel texts and materials related to first year medical education. Emel suggested having more translations with respect to the materials the students studied at the same lessons in Turkish so that they could use them in the same lessons. Similarly did Ali and Fatma indicate that providing more English-Turkish paragraphs resources based on the first year medical lessons and education would be more effective to understand first year medical lessons better. For instance, they suggested that on one page we would have a Turkish medical paragraph and on the opposite page, we would have English translation. Then we would compare them. Through this comparison, we would learn too.

Instructional Approach in Learner-Centered Instruction

The learners expressed that they were not satisfied with the crowded class and lots of students in the lesson. They suggested that the number of the students should be fewer. Ali suggested that medical English lesson can be divided in three groups, so in each class there would be fewer students. Kaan and Aysun suggested that two hours per week is not enough for medical English because with the crowded class the students had little chance to be directly active in the lessons. Especially not having sufficient time to discuss important topics in the lesson-time in the class should be reconsidered.

Student Decision Making

Ebru suggested that the students should have the chance to choose their group members about conducting the project because there is the situation in which members of the group may not like one another so they cannot cooperate well enough. Therefore, there was the lack of student decision making. Another suggestion was the guided control by the instructor. The instructor should clarify the criteria or points of conducting the project such as the number of pages of the project, being colorful or not, pictorial or not, and the like. The feedback by the instructor regarding the project was regarded as very effective as well as the peer evaluation. Kaan suggested that peer evaluation could be accompanied by some specific items or criteria given by the instructor. Accordingly, the peer evaluation can be more centralized around specific points. Leyla suggested that learners should be more guided in what type of items or headlines they could include into their projects. Another suggestion was that learners could examine a model project prepared in the previous years. Fatma, on the other hand, stated that it could decrease the degree of the students' own creativity. In other words, she agreed that the guidelines provided at the beginning of assigning the project and showing the model could be helpful but they may restrict the students' creativity and enforced or persuaded them to prepare certain items, headlines, sections, project as they were exposed to or shown. She found that the detailed guidelines may lead to imitation rather than creation.

Moreover, some of the students suggested having their projects hung on the walls in the class to be seen and studied by the other students from different years. It can be one way of sharing knowledge.

Learner perceptions obtained during the semi-structured interviews indicate that learners showed improvement during conducting the project, and that this contributed to the development of their reflective skills, and this is in turn facilitated their understanding of how to deal with medical English topics and lessons during their studies. However, some found it more useful when they are guided by the instructor in terms of exposing to the related examples. This could encourage learners to organize conducting the project better. Some disagree with it since it may restrict their creativity and producing novel projects.

Mid-Term and Final Examinations

Learner perception with regard to mid-term and final examinations showed that learners considered them as a necessity. Otherwise, they could question the quality, the objectivity as well as the formality of the evaluation especially when other medical lessons are evaluated as such.

Ali and Fatma suggested that there should be group discussions on specific topics each week in the class like a panel discussion and they can improve their speaking skills as well. Of course the time allotted for medical English lesson should be extended and the number of the students decreased. Then it can be very effective for practicing medical English.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to examine the impact of learner-centered approach on pre-advanced first year medical students' performance, attitudes, and retention in medical English. The chapter covers the conclusions and implications of the present study.

5.1. Conclusions

Conclusions drawn from the findings are presented in line with each research question.

5.1.1. Achievement of Experimental and Control Groups

The post-test results indicated that there was no statistically significant difference between the control and the experimental groups' performance in terms of achievement as measured through a multiple-choice achievement test despite the fact that the mean scores in the experimental group were higher than that of the control group.

The findings obtained through the retention test that measured the difference in the control group and experimental group's retention of knowledge indicate that there was a statistically significant mean difference between both groups in favor of the experimental group. Such finding indicates that learner-centered approach activities had a positive impact on the retention of knowledge. In other words, this finding implies that the learners subjected to traditional learning acquired certain concepts or points to succeed in an outcome-based examination. However, when retention was measured, it was found that learners subjected to the learner-centered approach activities seem to learn deeply as well.

Qualitative data obtained through interview show that learners in the experimental group reported that group work activities, cooperative learning, and

the project had a positive impact on their knowledge construction, accumulation, and retention of knowledge. Other variables that were indicated to have an impact on their retention of knowledge were that learners were engaged in active learning tasks, and had to critically think, discuss and share their understanding related to medical English knowledge and medical topics. In other words, learners were actively involved in their learning process, and held ownership of their own learning that seemed to be fostered through collaborative work and the project. Niemic (2002) states that learning is fostered through actively reflecting on what one reads or experiences, and this statement is consistent with the finding of this study. In other words, as the task that the learners dealt with became more authentic to real word community, learners held ownership of their learning as described in the literature (Hay & Barab, 2001).

In sum, the conclusions that can be drawn about the impact of learner-centered approach activities on learner achievement are as fallows. First, the traditional view of instruction tends to prepare learners for examination per se to absorb the knowledge by using surface learning strategies (Bereiter & Scardamalia, 1996). Second, the learner-centered approach activities were paramount in the retention of knowledge, knowledge construction, and knowledge accumulation. Another conclusion is that utilizing a test as an indicator of learners' achievement or performance can underestimate the knowledge construction they hold, and such a finding poses the question of whether assessment of learning should follow the traditional trend or match with the epistemological framework. Through the implementation, the learners in the experimental group were empowered to take ownership of their learning by creatively and critically work through a full range of activities that required the development of new skills, practicing and knowledge as indicated in the literature (Hay & Barab, 2001).

5.1.2. Attitudes of Experimental and Control Groups

The third research question was related to understanding experimental and control groups' attitudes towards the medical English course. Findings indicated that the attitudes of learners in the experimental group were statistically different from the learners in the control group. The difference was found to be in favor of the experimental group. When mean scores are examined, it can be seen that the experimental group showed positive attitudes toward medical English course. Qualitative data provided insights about learners' attitudes toward the learning environment and instruction they were subjected to. The learners enjoyed group-work, cooperation and conducting the project. It can be concluded that learners felt comfortable and they were satisfied with the tasks they were assigned.

In addition to conducting the project, group-work, and cooperation, qualitative data indicate that learners had positive attitude toward peer-evaluation type of evaluation. Peer-evaluation was regarded as a strategy that worked for all students which helped them to learn from one another and each other. It can be concluded that such attitude of the classmates made learners motivated and tend to obtain a positive attitude toward medical English course. This suggests that collaborative tasks are effective for first year medical learners.

As for peer and self-evaluation, there is another point which should be considered as well. Some learners indicated that peer-evaluation might not be regarded as feedback for improvement or it might not be very objective. Although learners indicated that they would be criticized for the purpose of self-improvement and peer-improvement, they may consider their attitudes as subjective.

Regarding the above point it should be noted that the instructor's clarification concerning the purpose of peer-evaluation the extent to which the learners are aware of the purpose, reason, and outcome of this type of evaluation are important factors in having this evaluation realized reasonably and it can be concluded from the findings that the learners in the experimental group had positive attitude toward medical English course. Yet, peer-evaluation should be reconsidered and conducted with enough attention and awareness as well.

An essential factor for a learner-centered approach is placing the learning characteristics of all learners under the microscope with specific emphasis on low-

performing learners. McCombs & Whisler (1997) explained that the focus in a learner-centered approach is on individual learners' heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs. They defined learner-centered, from a research-based perspective, as a foundation for clarifying what is needed to create positive learning contexts to increase the likelihood that more students will experience success. Cultural factors impact the connection teachers must make to scaffold students' learning (McCombs & Whisler, 1997; Singham, 1998). The focus is on metacognition, how individual students learn. Milambiling (2001) extended the learner-centered definition by characterizing learner-centered education as the content and the methods used. Milambiling recommended curricula which address the culture of the learner within specific learning contexts.

Learner-centered instruction is grounded in constructivism, and the characteristics of learner-centered teaching grow directly out of this view of learning (Eggen, & kauchak 2001). Constructivists believe that learners construct their own understanding, that new learning exists in the context of prior understanding, that learning is enhanced by social activity, and that authentic tasks promote learning (Eggen, & kauchak 2001). Types of learner-centered instruction include (a) discovery learning, (b) problem-based inquiry, (c) discussion, and (d) cooperative learning.

Learner-centered instruction, or any successful type of instruction, cannot occur in a non-supportive classroom environment. Productive learning environments are safe, orderly, and learning focused. Learner-centered instruction requires students to feel free to offer conclusions, conjectures, and evidence without fear of criticism or embarrassment (Eggen, 2001). Modeling these behaviors and insuring a safe environment are the responsibility of the teacher, especially of students who may not be familiar with learner-centered instruction.

In a learner-centered environment, students become autonomous learners which this accelerates the language learning process. A learner-centered environment is communicative and authentic. It trains students to work in small groups or pairs and to negotiate meaning in a broad context. The negotiation of meaning develops students' communicative competence (Canale & Swain, 1980)

and provides comprehensible input (Long, 1980). Crookes and Chaudron (1991, p. 57) provide an accurate summary:

The teacher-centered classroom is characterized by the teacher's speaking most of the time, leading activities, and constantly passing judgment on student performance, whereas in a learner-centered classroom, students will be observed working individually or in pairs and small groups, each on distinct tasks and projects.

In short, a learner-centered environment becomes a solution to student and teacher differences by providing the learner with more autonomy and control. The only caveat is that students may become out of control in a learner-centered classroom, and conflicts about learning may arise between teachers and learners. Nunan (1988) covers the problematic situation that emerges when teacher methodology goes against what students believe is appropriate.

5.1.3. Impact of Learner-Centered Learning Process on Learners' Development in Medical English Course

This section provides the conclusions drawn from the fourth research question. It covers the conclusions about learners' perceptions regarding the learners-centered approach learning and teaching process they were subjected to in medical English course. The findings are discussed in line with the related themes.

Learning Through Discussion, Group Work, and Collaboration

In the present study it was found that learners considered discussion, group work, and collaboration as indispensable in constructing and accumulating knowledge about medical English. Shortage of time and crowded class were expressed as critical limitations in the program. Findings indicated that learner-centered instruction activities like group-working, problem-solving tasks, and collaborative working were relevant to their understanding and retention of medical English as well as medical knowledge.

In this study discussion method and sharing of experiences in groups were perceived as encouraging the knowledge construction and accumulation about the subject matter, enabling them to familiarize with multiple perspectives on a topic and promote their medical English learning.

In sum, it can be concluded that students' interactions were means to construct and accumulate knowledge about medical English, and that the use of different types of learning tasks were effective in the learning process of first year medical students. In this study, the learners had no opportunities for designing the course, the contents or the time allotted for the course. Nevertheless, it can be concluded that subjecting learners to learner-centered instruction activities may help learners to build awareness about medical English argument skills, and the topics the learners are involved in may influence their future medical studies and education. It is important that the class size be smaller and the class time of the lesson be extended.

McCombs and Whisler (1997) believe learning will be heightened when individuals are in respectful and caring relations with others who see their potential, genuinely appreciate their unique talents and accept them as individuals. They consider learning an active, volitional, and internally mediated process of discovering and constructing meaning from information and experience filtered through the learners' unique perceptions, thoughts, and feelings and facilitated by social interactions and communication with others in flexible, diverse, and adaptive instructional settings. To them, learner-centered learning is a perspective that couples a focus on individual learners (their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs) with a focus on learning (the best available knowledge about learning and how it occurs). It is the teaching practice that is most effective in cultivating the highest levels of motivation, learning and achievement for all learners.

Students are encouraged to try to use language, to search for synonyms, abbreviations, and alternative ways of expressing meaning to communicate with each other. Students are encouraged to support and encourage each other in language correction. The instructor becomes the facilitator or guide. Once the message is communicated and the entire interaction is complete, the instructor will review with the students as a group, strengths and weaknesses of the exercises. If corrections need to be made in structure and form, it is done in the feedback, debriefing session following each exercise if and when peers have not assisted each other with this during the activity. This is supported by the work of Krashen, Prabhu and Allwright (cited in Pratt, 2002) who speak to the importance

of comprehensible input: acquisition occurs from hearing or needing language to communicate.

Conducting the Project Through Cooperation

In the present study conducting the project can be discussed to have important impact on student learning. It is important in terms of learner-centered education to the extent that such approach improved students' critical thinking skills and improved on their achievement. It was found that conducting the project required frequently utilizing higher mental processes to synthesize and evaluate their learning about medical English. The learners managed this by linking their medical English knowledge and medical knowledge in other medical lessons, with that of their peers', instructors', and the assignments.

The findings indicate that conducting the project had a positive impact on learner achievement. Learners in general had the chance to express their ideas and share them with the others. They were able to benefit from each others' skills and abilities to tackle with the topics and problems. Cooperating with one another in order to reach the same goal which was conducting the project and presenting it help the learners to understand the medical topics and enjoy them.

However, the points regarding the crowded classroom and less time allotted for medical English lesson should not be ignored. Learners could have performed better with less group members and had more time to present their project and accordingly there could be more time for discussion and more points in peer-learning.

Consequently, this study showed that conducting the project was an effective tool in medical knowledge construction and accumulation. These reflections were mainly fostered through discussions and interactions with peers. Moreover, findings showed that learners preferred to have chosen their topics and their members in their groups. It can be concluded that in that way learners might have felt better while conducting the project. Finally, they might have been provided with more detailed instruction regarding conducting the project by the instructor in order to provide harmony among the groups in terms of following the same procedures while conducting the project.

Alternative Assessment

The findings related to learner perceptions about alternative assessment were mainly related with the students' peer evaluation. Findings indicate that learners found such approach to evaluation useful and motivative. Learners asserted that peer evaluation, which had positive perceptions about a group's product or contribution could lead to their better understanding of different medical topics. Findings also indicate that learners tried to do their best in conducting the project, cooperating with one another and share ideas and knowledge in the groups. Accordingly, this helps learners' progress in learning medical topics and medical education. In addition, findings show that learners were willing to cooperate and help one another in the groups and among the groups. However, three of the interviewees indicated that peer-evaluation seems to be subjective and may not reflect reliable results. They also mentioned that with the instructor's guidance before assigning the project concerning the purpose of peer-evaluation, the degree of subjectivity of peer-evaluation decreased.

From the above discussed findings it can be concluded that learners felt responsible in contributing to the knowledge of their peers and they held a positive attitude towards learning. Also, the learners felt willing in evaluating their peers. Such findings indicated that the learners were well-informed by the instructor regarding the purpose of peer-evaluation in order to decrease the extent of subjectivity. Although some students considered peer-evaluation as subjective, learners tried to manage it for the sake of improving their medical English knowledge. Consequently, the alternative assessment approach was found to be effective.

In so far as assessment in a student-centered classroom is concerned, there seems to be more formative assessment which emphasizes feedback to students and enhance their learning, which does not necessarily add to the end of the course mark. So we come across diaries, logbooks, journals, portfolios, projects, group work, profiles, peer assessments learning contracts, and negotiated assessment in the literature, all of which might be considered as essential activities contributing to Black's (1999) concern of helping students take responsibility for their own learning; therefore, self-assessment is often emphasized in this strategy. Knight (2002) considers contracts as goals set by the

student, depending on their learning gaps, which are, in turn, negotiated with the lecturer. Black (1999) and Knight (2002) both show how the students would like to be assessed in order to demonstrate that they have reached the goals, hence adding 'choice' in what to study as well as 'choice' in how the student will be assessed. This very concept of negotiation addresses a dramatic change in relationship between teacher and student. In this way the student can suggest self-assessment grades and negotiate self-assessment or peer-assessment goals.

Bliss (2006), on the other hand, emphasizes the importance of sociability and human connections. She holds that authentic connection in a student-centered classroom will remove fears of failure, ridicule, family problems, the feeling of outcomes not fitting in identity issues which can prevent students from deeper learning. In a similar line, Melander (2002) maintains that student-centered education becomes focused on coaching the student toward the development of attitudes, skills, and behaviors as a learner, decision maker, and community participant, with success measured in terms of learner outcomes. He also holds that the syllabus and learning resources should guide the student's discovery, understanding, and decision-making abilities regarding learning and development in the formal curriculum. In the long run, this approach should shape the student's own capacities for self-assessing learning strengths and development needs identifying opportunities for learning growth and development, planning learning and development strategies, deciding on learning and development actions, reflecting on learning and development experiences, and initiating adjustments in learning and development strategies.

Impact of Learner-Centered Instruction Activities on Learner Motivation

Motivation was enhanced through multiple variables in the experimental group. First, medical English course was considered crucial for first year medical students. The learners were intrinsically motivated to learn medical English since it was directly related to their other medical lessons as well as medical education. In addition, active learner involvement was seen of very significant because learning was constructed by learners to a great extent. Findings indicate that learning and teaching medical English through learner-centered approach activities is in line with learner needs and interests. Findings indicate that the related activities promoted learners' joy and interest toward the learning materials

and tasks. Besides, it was found that some learning was realized outside the classroom during preparing the project while learners cooperated with one another. This shows that learners can be subjected to learner-centered instruction in medical English course and those can be perceived as efficient in promoting their learning.

Another type of motivation revealed was the role and flexibility of the instructor. The instructor's positive and enthusiastic attitudes were mentioned as means for increasing motivation. Findings indicate that the enthusiasm that the instructor showed towards the teaching and the learning process, and her attitudes towards the learners and the medical English course were encouraging to increase motivation. Also, the consistent attitudes of the instructor with her application throughout the course were means to motivate learners.

Besides, the size of the class and the allotted time for medical English lesson were found to be discouraging. Learners reported and voiced that they felt unsatisfied with taking medical English course in that crowd. Also they preferred to have chance to choose their members in their groups for conducting the project. In the crowded classroom and two-hour class time, they had fewer opportunities to be active enough. Therefore, it seems to be important to consider the implementation of learner-centered instruction with less population in the classrooms.

Consequently, learner motivation was increased by being actively involved in the learning process. Learners took responsibility of their learning and their peers' learning by frequently doing research, discuss, or refine medical knowledge by reflecting upon multiple cases and reading they did (Keating, Baldwin, & Thousand, 1998). Also, it can be concluded that the shift of a teacher-centered approach to a learner-centered approach to learning was means to reflect on the dispositions they held regarding teaching and learning. In other words, they were motivated to apply their learning and experiences in medical English lesson in other medical lessons and medical education. The instructor was regarded as facilitator and guide in the classroom. Moreover, the instructor's collaboration in their learning was means to have learners collaborate among themselves.

Besides, research in the fields of adult education and the acquisition of a new language identifies that students are much more motivated to learn when they find value in the material. When designing a curriculum for medical English, it is important to survey the motives of the students. However, these are not always the same.

In terms of teachers' motivation, Pratt and Brookfield (2002) believe that teaching is guided by the teacher's perspective on teaching. They ask the question of what the teacher is trying to accomplish and from what perspective their commitment lies. For example, is the teacher of medical English committed to teaching English language or is she/he interested in medicine and health care and promoting the use or acquisition of English as a medium through which one practices medicine and health care?

5.2. Implications for Practice

Implications for improving medical English course, especially through utilizing learner-centered activities are presented below.

1. A new shift is suggested to be experienced in medical English education to put learners in contexts where they can practice the motivative learning activities. In other words, medical English courses should shift from a teacher-centered approach to learner-centered approach. Learners should be placed in experienced-based contexts so that they have enough opportunities to question the dispositions they hold regarding learning medical English and build curiosity accordingly. Consequently, it may empower learners and encourage them to reflect on their own learning.

2. Utilizing project assessment and learner-centered activities are crucial in promoting learners' skills. Such a finding indicates that learners changed the way they need to deal with learning and being instructed. They indicated awareness of the weakness of just listening to the instructor, doing the reading passage exercises and filling the blanks. They also indicated awareness of the strengths of learner-centered learning that made them active, and peer-evaluation choice they had in the presentations they gave. For instance, in the present study collaborative activities such as conducting the project and group-work were valued and

appreciated. It is suggested that these kinds of activities be accounted for and that learners are provided with opportunities to be involved in these activities as well.

3. In addition to the evaluation procedures, peer evaluation should be used for the purpose of improvement of learner products and building new knowledge constructs. This can be better realized with instructors' guidance, explanations and exemplifications regarding the purpose of conducting peer-evaluation, its advantages and outcomes as well as its disadvantages. This study suggests that when students are equipped with reasonable knowledge and prepared for applying peer-evaluation, it can help students' learning, motivate them, and lead to future cooperation in their future studies.

4. A class project requiring students to obtain practitioners' reflections on their own professional writing or that of others may serve as the first step in helping students to unravel the complex relationships between writer and audience in their chosen field of study and "to see how features are related to the beliefs and practices of initiated members" (Hyland, 2000, p. 149) of the discourse community. Such an assignment would also allow EMP students to glimpse the context in which ME texts are produced and/or consumed and better understand the informational and interactive nature of these texts, as elaborated on in this and other analyses of ME writings. Those enrolled in EMP courses may be medical students or experienced clinicians.

5. The nature of knowledge requires the instructors to commit to a life-long pursuit of improving their understanding of learner-centered education and of broader processes called teaching and learning (Henson, 2003). It is suggested that instructors, especially medical English instructors, medical English curriculum designers and evaluators follow this pursuit and provide better opportunities for learners. Accordingly, learner-centered approach can be implemented more fruitfully and medical students can apply their medical English knowledge in their entire period of medical education and medical profession.

5.3. Implications for Future Research

Implications for future research, especially through conducting learner-centered approach are presented below.

1. In Turkey there is still little research on the impact of learner-centered approach on first year medical students' learning medical English. Therefore, it is suggested to conduct the same kind of research to understand the impact of learner-centered learning process on first year medical students' learning in medical education in general and in medical English in particular.

2. Research is also suggested to approach learner-centered instruction from different perspectives. Research should not be limited with a certain number of medical English courses in certain medical faculties. It should be conducted in the whole medical English programs in both state and private medical faculties. Moreover, conducting the research regarding learner-centered approach should be experienced in other medical lessons as well.

3. Learners carry their dispositions about learning to the classroom and it is a challenging task to satisfy all learners' needs. It is essential that research be conducted and examined based on the learning-orientations of medical English learners at the beginning of their medical English course. It is essential to understand whether the learners who received education from different regional backgrounds and different types of schools hold similar dispositions. Such knowledge can contribute to better understanding of the differences in their performance and accordingly develop and implement necessary curricula and activities and evaluations.

4. Attitude tests that directly measure the impact of the learning activities need to be conducted and correlated with the learning style of learners. Such tests may enable the medical English instructors to construct new perspectives concerning their instructional choices. Since there are a variety of choices in instructing medical English, being aware of learners' learning styles and the medical context can provide better insights for the medical English instructors to apply the appropriate approach of instruction and activities. Besides, this could provide more perspectives, insights, and findings.

5. Replication of this study with different sample size and different medical English courses at different medical faculties should be considered. This will help

to provide better understanding of the impact of learner-centered approach on pre-advanced first year medical students' performance, attitudes, and retention in medical English. Moreover, it is suggested to replicate this study at different medical faculties to investigate the effectiveness of the learner-centered approach. Finally, as a reflection of the profession's nature, the attitudes toward learner-centered approach vary from institution to institution in the same country; furthermore, from educators to educators in the same institution. Consequently, it is suggested to replicate this study at different medical faculties and the findings could be subjected to other interpretations.

6. Qualitative studies should be carried out for the same purpose of this study and measurement through other means should be considered. The quality of relationships, activities, situations, and materials can be investigated more. In addition, the phenomena occurring naturally in all their complexity are investigated. Furthermore, more precise descriptions of procedures can be conducted and the design of statistical control of extraneous variables is preferred. Also, the immersion in the details and specifics of the data to discover important categories, dimensions, and interrelations is occurred.

7. Solomon four-group design should be carried out. It may provide the control of threats to internal validity. This research design involves four groups of subjects, two of them receive an experimental treatment and two receive a control treatment. This design permits estimation of a treatment effect and a testing effect, and ─ of greater importance ─ control of the testing effect, should it exist.

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APPENDICES

APPENDIX A

Course Design

Description of the Course

Medical English course is offered to first year medical students at Gazi University, Faculty of Medicine. This is a compulsory course. The students receive 56 hours medical English lesson in this course in an academic year in 28 weeks as: 10 hours, 10 hours, 12 hours, 14 hours, and 10 hours in each 5 separate committees respectively. The first academic year includes 5 committees.

Regarding the evaluation of the medical English course, students' achievement is assessed through two mid-term exams during the course and a final exam at the end of the course. These exams are prepared by the instructor.

Medical English is offered for two class hours per week throughout two semesters, in a year. Before the implementation took place, the materials were selected. The content of the course covered the following areas: 1) English in medicine, 2) Reading passages from different medical texts, 3) English grammar and vocabulary, 4) Basic word parts in medicine, 5) Translation from Turkish to English and vice versa of medical sentences and paragraphs, 6) Cloze test of medical paragraphs and passages, 7) Medical terminologies, acronyms, and abbreviations.

In terms of medical English course objectives, the main purpose of the faculty is to train enlightened, critical minded, scientifically oriented people of integrity and good character. In order to reach this purpose, the faculty has been trying to reach the contemporary level in medicine since its establishment under the guidance of its experienced staff.

Medical course objectives can be summarized as:

1. To follow their faculty courses successfully,
2. To be successful in the Examination of Specialization in Medicine (TUS, Tıpta Uzmanlık Sınavı),

3. To be able to follow the medical literature in order to catch up with the recent developments through articles, books, seminars, and the like.

A Sample Lesson Plan

Date: Week 8 and 9
Time: 70 minutes

COLD AND FLU

Pre–Reading Activities

A: What Do You Think?

Work alone and answer questions 1–3.

1. Which things on the list below are usually signs and symptoms of a cold and which are signs and symptoms of influenza (flu)?

> **Signs and symptoms:** fever and chills; scratchy throat; sore throat; body aches; stuffy nose; upset stomach; runny nose.

2. What kind of things do you do in your everyday life to try and avoid catching a cold?

3. What do you do if you have a cold? Do you do anything special to try and make it go away faster?

Now work in pairs and compare your answers for questions 1–3.

B: Test your Medical Knowledge

Work in pairs and decide whether these statements are True or False. (You will be able to check your answers later when you read the article).

1. There are vaccines available that can prevent people from catching flus and colds.

2. There are more than two hundred viruses that can cause the flu.

3. Washing your hands can lower your chances of catching a cold.

4. It is easy to tell whether or not a small child has the flu.

5. Aspirin will help take away any aches and pains and is suitable for everyone.

6. Children with the flu usually have higher fevers than adults.

Reading Activities

A: Finding the Main Idea

Here is the headline of today's article but some of the words have been mixed up. Read the first paragraph of the article and then try to put the words in the headline into the correct order. Write your answer on the line provided. (The first two words are given to you as an example).

Headline: Nose Stuffy? Flu if or to Tell It's Cold a How

Your Answer: Stuffy Nose?

NEW YORK Monday January 14 (Reuters Health) – Scratchy throats, stuffy noses and body aches all spell misery, but being able to tell if the cause is a cold or flu may make a difference in how long the misery lasts.

The American Lung Association (ALA) has issued new guidelines on combating colds and influenza, and one of the keys is being able to quickly tell the two apart. That's because the prescription drugs available for the flu need to be taken soon after the flu needs to be taken soon after the illness sets in. As for colds, the sooner a person starts taking over – the – counter therapies, the sooner relief will come, according to the ALA.

The common cold and the flu are both caused by viruses. More than 200 viruses can trigger cold symptoms, while the flu is caused by three viruses – influenza A, B and C. There is no cure for either illness, but the flu can be prevented by the influenza vaccine – and is, for most people, the best way to fight the flu, according to the ALA.

And in general, flu symptoms including fever and chills, sore throat and body aches come on suddenly and are more severe than cold symptoms. Contrary to popular belief, upset stomach is rarely a symptom of the flu, according to the ALA.

The group notes that it may be particularly difficult to tell when infants and preschool age children have the doctor if their small children have flu – like symptoms.

If patients see a doctor within 2 days of symptom onset, the flu can often be treated with one of four drugs that have been shown to shorten the duration of symptoms, the ALA adds. These drugs are: oseltamivir (Tamiflu), zanamivir (Relenza), amantadine (Symmetrel) and

But if the flu does strike, quick action can help. Although the flu and common cold have many similarities, there are some telltale signs to look for.

Cold symptoms such as stuffy nose, runny nose and scratchy throat typically develop gradually, and adults and teens often do not get a fever. On the other hand, fever is one of the hallmarks of the flu for all ages; children's fevers tend to be higher, ranging from 103 to 104 degrees Fahrenheit (39 – 40 degrees Centigrade), the ALA points out.

rimantadine (Flumadine). Some can be given to children older than one year.

Both cold and flu symptoms can be eased with over – the – counter medications as well. However, children and teens with a cold or flu should not take aspirin for pain relief because of the risk of Reye syndrome, a rare but serious condition of the liver and central nervous system.

There is, of course, no vaccine for the common cold. But frequent hand washing and avoiding close contact with people who have colds can reduce the likelihood of catching one.

B: Scanning

Here is the list of symptoms from Pre–Reading Activity A. Read the next part of today's article. Which signs and symptoms does the article mention in connection with colds and influenza? Write them down under the appropriate heading. Are there any that are not usually symptoms of either a cold or flu? Write them down under the Neither Cold nor Influenza heading.

Fever and chills; scratchy throat; sore throat; body aches; stuffy nose; upset stomach; runny nose

Cold	**Influenza**	**Neither Cold nor Influenza**

C: True or False

Now go back to Pre – Reading Activity B and do the following things:

1. Check to see if your answers are correct according to the article.

2. Change your answers if they are incorrect.

3. If a statement is false, change the false statement to make it true.

D: Check Your Understanding

Here is a paragraph summarizing the message of today's article. Fill the gaps in the sentences with information from the article. (Put one word only in each gap).

> Cold and flu symptoms are similar but _____ symptoms are more serious and develop faster. If you are able to tell that you have the _____, and see a doctor, you may be treated with one of _____ length of the symptoms. These medications, however, must be taken within _____ days of the flu starting, so it is important that you try to work out which illness you have and then go and see a _____ if you have the flu.

Post–Reading Activities

We may do one or more of these.

A. Language

1. The article contains a lot of information written in the present simple tense. For example, "upset stomach is rarely a symptom of the flu, according to the ALA."

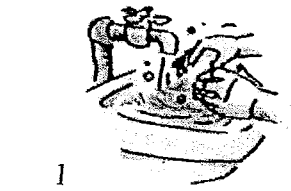
Why are sentences like this one in the present simple?

2. Students sometimes confuse present active with present passive sentences (Subject + be verb + past participle of the main verb). Look at these sentences from today's article. Change the verbs in brackets (which are in the infinitive form) into the correct from (present active or present passive sentences).

a. Scratchy throats, stuffy noses and body aches all _____ **(to spell)** misery.
b. The common cold and the flu _____ **(to cause)** by viruses.
c. The flu _____ **(to cause)** by three viruses – influenza A, B and C.
d. There _____ **(to be)** no cure for either illness.
e. Cold symptoms such as stuffy nose, runny nose and scratchy throat typically _____ **(to develop)** gradually, and adults and teens often do not _____ **(to get)** a fever.
f. On the other hand, fever _____ **(to be)** one of the hallmarks of the flu for all ages.
g. There _____ **(to be)**, of course, no vaccine for the common cold.
h. But frequent hand washing and avoiding close contact with people who _____ **(to have)** colds reduces the likelihood of catching one.

B: Remedies

Part One: In pairs, try and match the words and the pictures below.



1

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10

10

garlic; lemon and honey drink; aspirin; vaccination; throat lozenges; cough syrup; Someone washing their hands; cough; sneeze; nose drops

Part Two: In a conditional sentence, the result or main clause is dependent on the first event happening *(if).* The zero conditional sentence uses *if + present simple + present simple*. We can use the zero conditional sentences when we are talking about something that is generally true or fact. For example: *If I have a bloody nose, I line on my back.*

Match the problem with the remedy by drawing a line.

1. If I have a cold,	a. I wash my hands a lot.
2. If I have a cough,	b. I eat garlic.
3. If I have a headache,	c. people usually say "Bless you."
4. If I don't want to catch the flu,	d. I drink lemon and honey drinks.
5. If I have a sore throat,	e. I take some aspirin.
6. If I have a blocked nose,	f. I can get a vaccination.
7. If I have a high fever,	g. I suck throat lozenges.
8. If I don't want to catch a cold,	h. I have a warm shower to cool down.
9. If I sneeze,	i. I take some cough syrup.
10. If I want to get over a cold quickly,	j. I use drops.

C: Complaints

1. Isn't it horrible when everybody around you is sick and won't stop complaining? Today you are at a party at your teacher's house. Everybody is sick and grumpy and complaining. Each of your classmates has two complaints. You must talk to everybody and remember their complaints, but you can not write anything down.

You will be told when to stop. Then in groups, try and remember everyone's complaints. (Note: One person in your group should write down the complaints.) The team which can remember the most complaints wins! You will have 5 minutes to remember. Your teacher will tell you when to start. Good luck!

2. What were your complaints? Write them both down on a piece of paper and give them to another student. (Be sure to include your name on the pieces of paper). They will write down some advice or suggest a remedy for you.

For example: I have a headache. You should take some aspirin.

TEACHERS' NOTES AND ANSWER KEY

Pre–Reading Activities

A: What Do You Think? – Notes

Make sure students have a clear understanding of what the words 'flu', 'cold', and 'symptoms' mean.

This activity gives students an opportunity to pool their knowledge about colds and flues. They can also use their dictionaries, if necessary, to check the meanings of some of the symptoms that are listed. Try to avoid becoming involved in the discussion and allow students plenty of opportunities to compare and share their ideas. Today's article gives answers for questions 1 and 2. Students will be given an opportunity to see if their answers were correct in the Reading Activities.
In a one to one situation, spend some time discussing the topic with the student.

A: What Do You Think? Answers

1-3. Answers will vary.

B: Test Your Medical Knowledge – Notes

The points raised in these questions are covered in today's article. Do not let them look at the article yet and avoid giving them the answers. They will be able to check whether or not they were correct when they read the article.

Reading Activities

A. Finding the Main Idea – Notes

Students should look at the words in the headline and see which ones are repeated in the first paragraph (stuffy noses, to tell, if, a cold or flu). They should ask themselves what the main idea of the first paragraph is. If they do these two things, they should be able to put the words into the correct order without much difficulty.

A: Finding the Main Idea – Answer

Stuffy Nose? How to Tell if It's a Cold or Flu

B: Scanning – Notes

This list may not satisfy those students who want a complete list of symptoms for colds and flu. If students query the list, you may like to give them this information:

Usual Signs and Symptoms of Colds: runny nose, sore throat and hoarseness, watery eyes, cough, mild fever.

Usual Signs and Symptoms of Influenza: chills and high fever, weakness and feeling tired aches and pains (muscles, head, and eyes), dry cough, sore throat.

B: Scanning – Answers

Cold	**Influenza**	**Neither Cold nor Influenza**
Scratchy throat Stuffy nose Runny nose	fever and chills* sore throat** body aches	Upset stomach

* Fever and chills are not common symptoms for a cold.

** The article says with flu, a sore throat is usually more severe.

C: True or False – Notes

The purpose of this activity is for students to see how well they did at testing their medical knowledge in Pre-Reading Activity B. Make sure that students change their answers if they were incorrect. Also, false statements need to be changed to make them true.

C: True or False – Answers

1. False (There are no vaccines available for colds).

2. False (This figure applies to colds, not the flu).

3. True

4. False (The article says that it is particularly difficult to tell).

5. False (Aspirin should not be taken by children and teens because of the risk of Reye syndrome).
6. True

D: Check Your Understanding – Answers

Cold and flu symptoms are similar but flu symptoms are more serious and develop faster. If you are able to tell that you have the flu, and see a doctor, you may be treated with one of four drugs which will shorten the length of the symptoms. These medications, however, must be taken within 2 days of the flu starting, so it is important that you try to work out which illness you have and then go and see a doctor if you have the flu.

Post – Reading Activities

A. Language – Notes

2. If you want to put some pressure on students and give them a chance to practice working quickly and accurately, set a time limit which will allow most to finish, but only if they hurry. (A few of the sentences have been altered slightly for this activity).z

A: Language – Answers

1. Present simple is used for sentences that contain factual information that doesn't change and is always true.

2.

a. Scratchy throats, stuffy noses and body aches all spell misery.
b. The common cold and the flu are caused by viruses.
c. The flu is caused by three viruses – influenza A, B and C.
d. There is no cure for either illness.
e. Cold symptoms such as stuffy nose, runny nose and scratchy throat typically develop gradually, and adults and teens often do got get a fever.
f. On the other hand, fever is one of the hallmarks of the flu for all ages.
g. There is, of course, no vaccine for the common cold.
h. But frequent hand washing and avoiding close contact with people who have colds reduces the likelihood of catching one.

B: Remedies – Answers

Part Two: 1.d, 2.i, 3.e, 4.f, 5.g, 6.j, 7.h, 8.a, 9.c, 10.b

1. Below are 20 complaints. Cut them out onto strips of paper and give each student two each. If you have more than ten students, you could divide them into two groups.

Text to be copied and cut up for students:

I have a cold.	I have a runny nose.	I have the flu.	I feel dizzy.
I have a headache.	I can't stop sneezing.	I have a bad cough.	My eyes are dry and sore.
My stomach hurts.	My nose is sore from blowing it too much.	I have a temperature.	My lips are dry and cracked.
My nose is blocked.	My ears are blocked.	I'm very tired.	The light hurts my eyes.
I have a sore, scratchy throat.	I have a sore neck.	My whole body aches.	I have fever and chills.

Allow students about five minutes to talk to everybody in the room, but be sure they don't write anything down. When they have finished, put students into groups of three or four. Write the following headings on the board for the designated writer for each group to use.

Student's Name :	**Complaint :**

When you say "GO" they try to tell the group's designated writer as many complaints as they can. (Note: This could get rather noisy.) Allow them 5 minutes and then say "Stop". The group who has remembered the most complaints wins.

2. These sentences can be written using "should". (In a one to one situation you may like to focus on this part of the activity and skip Number 1).

APPENDIX B

Table of Specifications

Contents of the Materials											
		Objective 1 Medical terminologies	**Objective 2** Common medical abbreviations, suffixes, prefixes	**Objective 3** Translation, English to Turkish, sentence level	**Objective 4** Translation, Turkish to English, sentence level	**Objective 5** Reading	**Objective 6** Unfamiliar words	**Objective 7** Grammar	**Objective 8** Paraphrasing	**Objective 9** Synonyms, Antonyms	
Medical Terminology		1,2,5,7,9	20,21,22,23	28,29,30,31, 32	33,34,35,36, 37	38,39,40, 41,42,43, 44,45,46, 47,48,49, 50	3,4,10	11,12,15, 16,17,18, 19	13,14	6,8,24,25,26, 27	
Basic Word parts											
Translation											
Reading, selected passages of medicine											
Medical Vocabulary											
Grammar											
Paraphrasing											
Synonyms, Antonyms											
Medical Topics											
	Total	5	4	5	5	13	3	7	2	6	50

APPENDIX C

Project

In the 8th week, the subjects in the experimental group were asked to conduct a project. The project included 22 medical education topics. These topics were chosen since medical students should deal with them frequently and also these topics are general topics for their studies. The topics are as follow:

1. Common Diseases
2. Medical Biology
3. Genetics
4. First Aid
5. Public Health
6. Biochemistry
7. Organic Chemistry
8. Microbiology
9. Histology-Embryology
10. Immunology
11. Biophysics
12. Biostatistics
13. Metabolism
14. Physician and Medical Specialist
15. Anatomy
16. Surgery
17. Radiology
18. Parazitology
19. General Pathology
20. Circulatory-Respiratory Systems
21. Endocrine System
22. Digestive System

There were 22 groups in the first year due to practical lesson such as laboratory lesson. Accordingly 22 medical topics were chosen. There were about 6 students in each group. Since the first year medical students were grouped at the beginning of the semester by the first year coordinator, the groups for the project were the same group.

The topics were assigned to each group by the instructor to avoid mismanagement of choosing the topics and among the groups. The time allotted to conduct the project was three weeks. The students could use any type of sources. They could consult one another, the instructor, and the other medical lesson instructors. After three weeks the students were asked to present their project group by group in 10 minutes in any way they wanted. Discussion and questioning were allowed after the presentation for 10 minutes for each group. Peer evaluation was included in the project. After the presentations, each group received feedback by the instructor orally and in written form.

Regarding the evaluation, the evaluation in the medical English course is conducted through two mid-term examinations and one final examination. This was used for the control group. However, for the experimental group, the project had 30 points (15 points for conducting the project, 10 points for presentation, and 5 points for peer evaluation) out of 100. The two mid-term examinations and one final examination had 70 points.

APPENDIX D

Achievement Test

A. Choose the best answer

1. Senior doctor in a hospital is called.....

a. prospective doctor b. consultant c. intern d. manager

2. Biochemistry is the chemistry of ..... matter.

a. life b. living c. inanimate d. non-existent

3. Drowsy means.....

a. happy b. unhappy c. sleepy d. awake

4. Fatigue means.....

a. tiredness b. freshness c. hyper-activity d. relaxation

5. A blue discoloration of the skin due to blood under the skin is called.....

a. tumor b. flu c. diabetes d. bruise

6. Respiration is the same as.....

a. vomiting b. breathing c. fracturing d. digesting

7. The use of scientific methods to determine the cause and nature of a patient's illness is.....

a. x-ray b. case history c. diagnosis d. prognosis

8. Without the power to feel or move is the same as.....

a. numb b. dull c. dumb d. blind

9. Due to …….. the baby was dehydrated.

a. nutrition b. diarrhoea c. allergy d. hypertension

10. Burns are also classified according to depth or degree of skin……..

a. sensitivity b. damage c. tissue d. surface

11. In the human body the malaria parasites pass……several stages of development.

a. at b. over c. on d. through

12…….heart rate may imply insufficient oxygen intake.

a. Increased b. To increase c. Increasing d. To be increased

B. Choose the Best Answer That Gives the Closet Meaning of the Following Sentences.

13. Medical authorities had not foreseen that AIDS would be the worst enemy of mankind in the twentieth century.

a. What medical authorities had realized was that AIDS was to be the worst enemy of mankind.

b. AIDS was turned into the worst enemy of mankind by medical authorities.

c. AIDS became the worst enemy of mankind as medical authorities had foreseen.

d. What medical authorities had not foreseen was that AIDS would be the worst enemy of mankind in the twentieth century.

14. The heart specialists tried in vain to find out a way to save the life of the old man.

a. The heart specialists failed to save the life of the old man.

b. The heart specialists tried to find a good life for the old man.

c. The heart specialists finally found a treatment for the sickness.

d. The heart specialists found a way to cure the old man.

C. Choose the Best One to Complete the Following Sentences.

15……., my father went on smoking.

a. Whenever he feels worse

b. According to the warnings and reminders on billboards

c. Despite such warnings and reminders

d. Although he was healthy

16. She was ill,……..

a. instead she was sent to the hospital.

b. that's why she was taken to the hospital.

c. yet she went to the hospital.

d. though she was seen in the hospital.

17. However risky the operation maybe,……..

a. he had to be operated on.

b. he needn't be operated on.

c. the surgeon can't choose to operate on him.

d. the surgeon will do his best to cure him.

18. Doctors no longer use this drug,…….

a. because they will see the side-effects on the patients.

b. so that they can check the results.

c. seeing that it had some undesirable effects on a patient.

d. as a result they will use it.

19. To prevent him from a heart attack will be more difficult now…….

a. even if he has put on 10 more kilograms.

b. than 10 years ago when he was much fatter.

c. that he has put on 10 more kilograms.

d. when he is 10 years younger than your husband.

20. The prefix apo- means……

a. extremely

b. against

c. separation or derivation from

d. around

21. The prefix homeo- means……..

a. unchanged

b. same

c. bad

d. normal

22. The suffix -fugal means……..

a. making or causing to become

b. having the qualities of or capability for

c. having nature or equality of

d. driving or traveling away from

23. The suffix –oma means…….

a. tumor

b. love of

c. softening

d. condition

24. The synonym of “dystrophy” is ……

a. faulty development

b. complete development

c. partial development

d. nice development

25. The synonym of “frontal” is…….

a. in front

b. in the middle

c. at the back

d. in the center

26. The opposite of “superficial” is……

a. central

b. fundamental

c. partial

d. same

27. The opposite of “perpetual” is …….

a. permanent

b. temporary

c. continuously

d. continuing indefinite

D. Translation, English to Turkish. Choose the Best Answer.

28. Hippocrates, the famous Greek physician, is so revered by doctors that even today medical authorities insist that every new doctor take the Hippocratic Oath.

a. Ünlü Yunanlı doktor Hippocrates doktorlar tarafından öyle saygı görür ki bugün bile bütün genç doktorların ona saygı göstermesi istenir.
b. Ünlü Yunanlı doktor Hippocrates doktorlar tarafından öyle saygı görür ki bugün bile tıp otoriteleri her yeni doktorun Hipokrat yemini etmesinde ısrarlıdır.
c. Ünlü Yunanlı doktor Hippocrates doktorlar tarafından öyle saygı görür ki bugün bile her yeni doktor Hipokrat yemini etmekte direnir.
d. Ünlü Yunanlı doktor Hippocrates doktorlar tarafından öyle saygı görür ki bugün bile tıp otoriteleri her yeni doktorun Hipokrat yeminine sadık kalmasını şart koşar.

29. Some doctors believe that a doctor should conceal the truth from a patient with a terminal disease.

a. Bazı doktorlar gerçeğin ölümcül hastalardan son ana kadar saklanması gerektiğini düşünürlar.
b. Bazı doktorlar doktorların ölümcül hastalardan gerçeği saklamaları gerektiğine inanırlar.

c. Bazı doktorlar iyice emin olmadan hastalara ölacaklarinin söylenmemesi gerektiğine inanirlar.
d. Bazı doktorlar her ölümcül hastanın sonuna kadar bu gerçeği öğrenmemesi gerktiğine inanırlar.

30. What evidence there is does not suggest that the sugar that Americans eat presents a major public health problem.

a. Amerikalıların çok tatlı yemesi genel bir sağlık sorununun olduğunu göstemez.
b. Bulunan kanıtlar Amerikalarının sağlıklarını tehlikeye sokacak kadar şeker yediklerini göstermekredir.
c. Elimizdeki kanıtlar Amerikalıların yediği şekerin önemli bir sağlık sorunu yarattığını göstermektedır.
d. Amerikalıların yediği şekerin önemli bir sağlık sorunu yarattiğını gösteren hiçbir kanıt bulunamamıştır.

31. Medical scientists have noted an alarming increase in disease of the heart and circulation among people who smoke cigarettes.

a. Tıp bilimadamları sigara içenlerarasında çok fazla kalp ve dolaşım hastası olduğunu belirtmişlerdir.
b. Sigara içenler arasındaki kalp ve dolaşım hastaları tıp bilimadamlarının artışları karşısında dehşete düştüklerinin farkına varmışlardır.
c. Tıp bilim adamları sigara içenler arasında kalp ve dolaşım hastalıklarında ürkütücü bir artış gözlemlemişlerdır.
d. Tıp bilimadamları sigara içen kişilr arasında bulunan kalp ve dolaşım hastalarını hemen farkederler.

32. However beneficial some drugs may appear, they must nevertheless be employed judiciously.

a. Bazı ilaçlar ne kadar yararlı görünürlerse görünsünler yeni de dikkatle kullanılmaları gerekir.
b. Bazı ilaçlar yararlı görünürler ama dikkatlı kullanılmazlarsa çok zararlı olabilirler.
c. Bazı ilaçlar ne kadar görünürlerse görünsünler yine de mehkemelerce yasaklanabilirler.
d. Mahkeme tarafından yasaklanmış ilaçlar ne kadar yararlı görünürse görünsünler zaralıilaçlardır.

E. Translation, Turkish to English. Choose the Best Answer.

33. Uzmanlar sık sık belirtildiği gibi, sigara ile akciğer kanseri arasında doğrudan bir ilişki vardır.

a. As is often stated by experts, there is a direct link between smoking and lung cancer.
b. As is stated by experts, there is often a direct link between smoking and lung cancer.
c. There is often, as is often stated by experts, a direct link between smoking and lung cancer.
d. As there is a direct link between smoking and lung cancer, experts often state the fact.

34. Zatürre ve frengi gibi hastalıklar artık bir zamanlarki kadar ürkütücü değildir.

a. Illnesses like pneumonia and syphilis were no longer so terrifying as they are now.
b. Illnesses like pneumonia and syphilis are no longer so terrifying as they once were.
c. That illnesses like pneumonia and syphilis are the diseases of the past is no longer terrifying.

d. People are no longer afraid of illnesses like pneumonia and syphilis as in the past.

35. Yendiğinde zehirleyici olan aşırı miktarda bakır karaciğer tahribine ve böbrek yetmezliğine neden olabilir.

a. Excessive amounts of copper, when eaten, will cause liver damage and renal malfunction, poisoning the eater.
b. Liver damage and renal malfunction can be caused by copper when eaten in excessive amounts.
c. As a poison, copper will cause liver damage and renal malfunction when eaten in excessive amounts.
d. Excessive amounts of copper, which are toxic when in-digested, can result in liver damage and renal malfunction.

36. Ister fiziksel, ister zihinsel, ister ruhsal sorunlarımızı çözmek için ilaçlara güvenmek sosyal nedenlere içki içmek kadar yagındır.

a. To solve our problems, whether physical, mental or emotional, we rely on social drinking as well as on drugs.
b. Whether physical, mental or emotional, our problems can be solved relying on drugs as well as on social drinking.
c. Relying on drugs to solve our problems, whether physical, mental or emotional, is as common as social drinking.
d. Social drinking is as common as relying on drugs to solve our problems, whether physical, mental or emotional.

37. Bazı bebeklerdeki zihinsel kusurkarın vücuttaki bakırı kontrol etmedeki genetik yetersizliğe bağlı olabileceği ancak bir zaman önce farkedilmiştir.

a. Some babies with mental deficiency due to a genetic inability to deal with copper in the body have only recently been recognized.
b. People have only recently recognized some babies with mental deficiency due to a genetic inability to deal with copper in the body.
c. It has been only recently recognized that babies may suffer from mental

deficiency because they have not been received enough copper in the body.

d. Only recently has it become recognized that mental deficiency in some babies may be due to a genetic inability to deal with copper in the body.

F. Reading Comprehension: Read the following paragraphs and choose the best answers.

Of the three leading contributors to heart disease, only high blood cholesterol can be controlled by change in diet. This fact is important in view of the estimate that over 150 million Americans have excessive levels of cholesterol in their bloodstreams.

Cholesterol, a waxy substance found in all animal tissues, helps to form hormones and to maintain the structure of cells. Most cholesterol is manufactured by the body, but some surplus quantities enter the blood through food intake. Foods heavy in saturated fats, such as beef, butter, and whole milk, increase the natural level of cholesterol in the body.

Problems occur when fatty compounds build up on the walls of arteries. The deposits gradually narrow blood vessels, and at some point the flow of blood to the heart or brain can be blocked. A clot that blocks an artery to the brain can cause a stroke, while one that blocks an artery to the heart can cause a coronary attack.

38. What is the main idea of this passage?

a. Leading causes of heart disease
b. Changes in diet
c. High blood cholesterol
d. Contributions to heart research

39. It can be inferred from the passage that millions of Americans

a. are overweight
b. should have blood transfusions
c. should alter their eating patterns
d. frequently check their

40. In what way does cholesterol benefit the body?

a. It regulates the release of hormones.
b. It cleans away wax in animal tissues.
c. It increases the flow of blood in the bloodstream.
d. It preserves cell structure.

41. How can surplus amounts of cholesterol build up in the body?

a. From eating foods rich in saturated fats
b. From increasing overall food intake
c. From failing to check blood pressure
d. From hormonal imbalances

42. In line 10, the phrase “build up” is closest in meaning to which of the following?

a. detach
b. accumulate
c. combine
d. dissipate

43. According to the passage, what can cause a stroke?

a. A clot in the heart
b. An increased flow of blood
c. A blocked artery to the brain
d. A sudden drop in the blood cholesterol level

44. In line 12, the word “one” can best be replaced by

a. stroke
b. brain
c. artery
d. clot

Medical research on the prevention of strokes has recently made several breakthroughs. The researchers studied strokes that are caused by an irregular heart rhythm that produces blood clots. When those clots get lodged in an artery that supplies blood to the brain, they reduce blood flow and produce a stroke. Up to 75,000 Americans who have strokes each year suffer from irregular heart rhythms. The use of the blood – thinning drug warfarin cuts the risk of a stroke by 67 percent. The data also suggest that aspirin is effective and is a reasonable alternative. Doctors might feel more comfortable prescribing aspirin because of the slight possibility that warfarin may lead to internal bleeding.

In separate studies with patients with severe narrowing of the carotid artery, on of the most common causes of a stroke, a form of surgery now exists which effectively prevents strokes. The surgery involves the removal of a portion of the carotid artery in the neck when it is partially blocked by cholesterol deposits. When the blocked portion has been removed, the artery is reconnected with an artificial tube or a vein from elsewhere in the body.

The research on stroke prevention has showed such dramatic results that doctors have abruptly halted the studies in order to make in information immediately available to all patients.

45. What does this passage mainly discuss?

a. Surgery to prevent strokes
b. Strokes and their causes
c. New measures for preventing strokes
d. Medication for stroke victims

46. The word “breakthroughs” in line 2 is closest in meaning to

a. publications
b. advances
c. awards
d. operations

47. According to the passage, which of the following is NOT true of the drug warfarin?

a. It might possibly lead to internal bleeding
b. It has been effective in preventing strokes
c. It has been used in research studies on people with irregular heartbeats
d. It eliminates cholesterol deposits in arteries

48. It can be inferred from the passage that strokes are a result of

a. reduced blood flow to the brain
b. expansion of the carotid artery
c. taking too many aspirin
d. internal bleeding

49. The word “cuts” in line 6 is closest in meaning to

a. severs
b. interferes
c. illustrates
d. reduces

50. According to the article, the data about aspirin suggest that

a. it is not as useful as warfarin
b. it is linked to internal bleeding
c. it could be used instead of warfarin
d. it is a substitute for surgery of the carotid artery

APPENDIX E

Attitude Scale

Survey of Attitudes towards Medical English Course

Dear Students

The questions below are designed to identify your expected attitudes toward medical English course. The item scale has 5 possible responses; the responses range from1 (strongly disagree) through 3 (neither agree nor disagree) to 5 (strongly agree). Please read every statement and put a mark in the box that corresponds most to your agreement. Please note that the results will be used for research purposes only. Thank you for your cooperation.

Samad Joshani-Shirvan
Middle East Technical University
Department of Educational Sciences
Ph.D. Student

1 = Strongly Disagree 2= Disagree 3= Undecided 4= Agree 5=Strongly Agree

All these items are related to medical English course.	1	2	3	4	5
1. Medical English course is one of the courses I like the best.					
2. I like discussing about medical English course.					
3. I think learning about medical English is useful for my future.					
4. I am stressful during medical English course.					
5. I am enthusiastic about learning medical English.					
6. I enjoy taking medical English course.					
7. Even thinking about medical English course makes me annoyed.					
8. Medical English course is not necessary.					
9. I like studying on medical English apart from course requirement.					
10. I fell uneasy in medical English course.					
11. I do not like spending time on medical English course assignments.					
12. Reading about medical English is not important.					
13. Learning about medical English is interesting.					
14. I do not like medical English exams.					
15. I have no self- confidence in studying medical English course.					
16. I am irritated when I hear about medical English course.					
17. Discussing medical English course is important.					
18. I do not like the way we learn medical English.					
19. I do not like medical English test in the class.					
20. I am anxious while doing medical English course assignments.					
21. Learning medical English skills is easy.					
22. It is worthless to learn about medical English.					
23. In my opinion, medical English course is very important.					
24. I am more concerned about getting higher grades in medical English.					
25. I find medical English course activities important.					
26. I get irritated getting over medical English course test in the class.					
27. Medical English course activities are challenging.					
28. I like medical English course very much.					
29. I like reading books on medical English course.					
30. I like dealing with medical English course subjects.					
31. I hesitate to participate in medical English course lessons.					
32. I like participating in medical English course lessons.					
33. I like to have more English lesson-hour of medical English course.					
34. I get bored with studying medical English.					
35. Learning medical English is important for improving my learning style.					
36. Learning medical English is important for improving my thinking style.					
37. Learning medical English leads to learning medicine better.					
38. I like spending time on studying medical English.					

Please specify if your expectation from medical English course (e.g., knowledge, skills, perspective, evaluation, etc.) are fulfilled. You may use the backside of this page.

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APPENDIX F

Interview Schedule

Post-course (Summative) Interview Schedule

Hello dear students. My name is Samad Joshani-Shirvan. I am a Ph.D. student at Middle East Technical University, Faculty of Education. I am doing a research on the learner-centered instruction in medical English. My purpose is to obtain your perceptions regarding the medical English lesson you are taking. Please note that this interview is conducted JUST FOR THE RESEARCH PURPOSES. Therefore, the whole process is going to be kept completely confidential. Your sincere answers to each question will help us to understand your perception regarding the medical English lesson. Moreover, it will contribute to the improvement of this lesson. I am quite sure that this interview will contribute to the medical English lesson in the coming years a lot.

1. If you don't mind, I would like to record the whole conversation. As I mentioned earlier, it is going to be completely confidential. Your names are not going to be published or publicized anywhere at all.
2. You may either answer in TURKISH OR ENGLISH. PLEASE FELL FREE.
3. Are there any questions that you want to ask me? I'd be happy to answer them.

The Interview

1. What were your goals when you took the Medical English Lesson? Have your goals been fulfilled?

a. Learning about medical topics, medical literature, medical terminology
b. Coping with medical themes, medical subjects

2. Was the content of the Medical English Lesson in line with your expectations?

* Do you believe that the content will contribute to your future medical knowledge as a would-be medical doctor?

3. How have you found the materials which were used in the Medical English Lesson?

a. Informative
b. Understandable
c. parallel to your other medical lessons
d. Motivating

4. What do you think about the activities which were used (you conducted) in the Medical English Lesson?

a. Related to the other medical lessons you are taking
b. Challenging
c. Enjoyable

5. How did group-work project contribute to improving your medical knowledge? Please explain.

a. What do you like and/or not like about doing the project?
b. What influences the content of your project? Please explain.

6. What suggestions can you provide us to improve conducting group-work activities, such as the project?

*For you to learn better, how should group-work activities, such as project, be conducted?

7. What do you think about the alternative evaluation methods used so far?

a. Presentation
b. Peer-evaluation

8. How do you think you should be evaluated in the Medical English Lesson?

* What alternative suggestions do you have for evaluating your performance in the Medical English Lesson? Please give reasons for your explanations.

Conclusions

9. Is there anything else that you consider as important and has not been mentioned? I really would appreciate if you share them with us.

This talk has really been very helpful for me. I believe that your sincere reflections will contribute to the improvement of the present Medical English Lesson. I appreciate you a lot.

And please, if there could be any new aspects or ideas that you want to share with us, don't hesitate to contact us. You can contact me or your instructor so that we can keep in touch. This is my e-mail: samadjs@hotmail.com

APPENDIX G

Program for Control Group

The Weekly Plan of the Lessons of the Control Group

Week 1

Conducting the pre-test and attitude scale.

Week 2

Topics: Introduction to the program, and First Aid for Chocking.

Objectives: Be clear about the purpose and goals, principles and procedures of the program. To familiarize students with first aid and one of the expected problems and the ways it should be tackled; enable them to understand the needed information.

Activities: Reading

The students read the passage. The teacher explained the passage paragraph by paragraph and translated it into Turkish. The related exercises were done in the class. The teacher gave the corrected answers and explained the reasons for the answers. The teacher answered the students' questions.

Assignments: Reading passage; Computers and the exercises.

Week 3

Topics: Computers; Tenses in English.

Objectives: Understand reading passages and different tenses in English in the context.

Activities: Reading and Structure; Tenses in English; Question tags.

The way of covering this passage was the same as week 2. The teacher also explained tenses in English and question tags. The teacher wrote the tenses and one example for each. The students took notes. Then the teacher explained question tag in brief with few examples.

Assignments: Work sheet about matching medical terminologies with their meanings, reading short passages, and answer the questions as true/false, multiple choice, reference, cloze test, vocabulary, and definitions.

Week 4

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Be aware of and able to understand the language structures of medical readings, terminologies and vocabulary.

Activities: Reading and structure, medical terminologies and their definitions; conjunctions as: and type, or type, but type, and so type.

The teacher read the passages quickly and checked the answers. The teacher answered the students' questions. The rest of the work sheet about the medical terminology was explained and checked by the teacher. Then the teacher taught conjunctions. The teacher wrote some examples for each type of conjunctions and the students took notes.

Assignments: Work sheet; reading passages, medical terminologies and vocabulary, grammar test as multiple choice question, synonyms, antonyms.

Week 5

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary.

Activities: The teacher answered the questions of the work sheet. The teacher explained the medical terminologies and vocabulary of the related materials such as: dysuria, dyspepsia, infection, symptoms, stethoscope, arteriosclerosis, etc. The teacher also explained if clauses as five types. Then the teacher explained wish clauses. The students took notes of the explanations and examples. The teacher answered the students' questions.

Assignments: Work sheet; reading comprehension with related exercises, a grammar test as 65 multiple choice questions.

Week 6

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher answered the questions of the work sheet. The teacher explained the medical terminologies and vocabulary of the related materials. The teacher asked two students to read the passage. The teacher translated this passage sentence by sentence into Turkish. Then the teacher wrote some Turkish sentences about medicine and the teacher wrote English translations for them. The teacher answered the students' questions.

After that the teacher taught active/passive voice as well as direct/indirect speech. The teacher wrote some examples for each and translated them into Turkish. The teacher answered the students' questions.

Assignments: Work sheet; dialogue and 3 reading passages with the related exercises.

Week 7

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher taught auxiliaries and modals with the related examples. Then the teacher asked two students to read the dialogue. Then the teacher checked the answers. After that the teacher answered the questions of the three reading passages as: Dr. Rogers, Effects of cigarette smoking, and Microscopic organisms.

Assignments: Work sheet; industrial medicine and safety; learning about computers; cold and flu.

Week 8

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher taught adjectives and adverbs with the related examples and translated the sentences into Turkish. Then the teacher wrote some Turkish sentences and the English translations as well. Then the teacher asked four students to read the first passage, industrial medicine and safety. The teacher asked the students to give the answers to the related questions. The teacher checked the answers. After that the teacher provided the answers for the second passage, learning about computers.

Assignments: Worksheet; cold and flu, SPAS: Good or Bad? and Arts or Science?

Week 9

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher taught determiners, nouns, and pronouns with the related examples. Then the teacher answered the questions for the second and third passages. The teacher answered the students' questions. After that the teacher read the exercises of the first passage, answered them and translated the sentences, terminologies and words into Turkish.

Assignments: Worksheet; the reading passages: Your diet and danger for the fun of it. The teacher asked the students to translate the first passage (your diet) into Turkish sentence by sentence.

Week 10

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher taught noun clauses with the related examples .Then some students read their translations sentence by sentence and the class discussed them. Then the teacher translated the sentences. The teacher answered the students' questions. After that the teacher answered the questions for the second passage, Danger for the fun of it.

Assignments: Worksheet; the reading passages: Ordinary Aspirin is truly wrong drug, and Are you really a non-smoker?

Week 11

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with different types of prepositions, translation of medical sentences from English to Turkish and vice versa, and paraphrasing.

Activities: The teacher taught prepositions with the related examples. Then the teacher read the first passage, Ordinary aspirin is truly a wrong drug. The teacher paraphrased some of the sentences. The teacher answered the questions. The teacher translated some of the related words, phrases and sentences. Then the teacher asked 6 students to read the second passage, Are you really a non-smoker? The students answered the questions and the teacher checked them. The teacher answered the students' questions.

Assignments: Worksheet; the reading passages: Pain and the mind and the body.

Week 12

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with adverbial clauses, translation of medical sentences from English to Turkish and vice versa, and paraphrasing.

Activities: The teacher taught adverbial clauses with the related examples. The examples were translated into Turkish by some students and the teacher wrote the Turkish translations on the board. Also, the teacher wrote some Turkish sentences with the English translations as well. Then 4 students read the first passage: Pain. These students tried to paraphrase the sentences. Then the teacher again paraphrased the sentences. The teacher gave the answers for the related exercises. After that 4 other students read the second passage: The mind and the body. Then these students tried to paraphrase the sentences. Then the teacher paraphrased them. The related exercises were answered by the teacher. The teacher answered

the students' questions.

Assignments: Worksheet; basic word parts, prefixes, suffixes.

Week 13

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, combining form, prefix and suffix; medical terminologies and vocabulary; to familiarize the students with causative and inversion; translation of medical sentences from English to Turkish and vice versa; and paraphrasing.

Activities: The teacher taught causative as well as inversion with the related examples. The teacher translated the sentences into Turkish and the teacher also wrote some Turkish sentences with the English translations. After that the teacher explained word root, compound words, combining forms, the definitions for prefix and suffix. Then the class did one exercise in the form of fill in the blanks as 11 questions. Then the teacher checked the answers.

Assignments: Worksheet; basic word parts, prefixes, suffixes.

Week 14

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, and combining form; define prefix, describe functions of prefixes and list and define prefixes for each function; medical terminologies and vocabulary.

Activities: The teacher explained medical prefixes with the related meanings and examples. The prefixes were divided into sets according to the various functions and they were explained accordingly. The sets of prefixes were: prefixes related to position regarding time and place; prefixes describing position in relation to other parts; prefixes related to type; prefixes describing direction; prefixes describing

number; prefixed related to size and amount; prefixes denoting color. Then the teacher answered some of the exercises for each part and gave the answer key for all the exercises.

Assignments: Worksheet; basic word parts, prefixes, suffixes.

Week 15

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, and combining form; define suffix, describe seven functions of suffixes and list and define suffixes for each function; medical terminologies and vocabulary.

Activities: The teacher explained medical suffixes with the related meanings and examples. The suffixes were divided into groups according to their functions and they were explained accordingly: suffixes which change a root word to a noun; suffixes which change a root word to an adjective; suffixes which denote a state or condition; suffixes which indicate a surgical or diagnostic procedure; diminutive suffixes which indicate smallness; suffixes which indicate a chemical compound; suffixes which form plurals. Then the teacher answered some of the exercises for each part and gave the answer key for all the exercises.

Assignments: Worksheet; basic word parts, prefixes, suffixes.

Week 16

Conducting the post-test and the attitude scale.

APPENDIX H

Program for Experimental Group

The Weekly Plan of the Lessons of the Experimental Group

Week 1

Conducting the pre-test and attitude scale.

Week 2

Topics: Introduction to the program, and First Aid for Chocking.

Objectives: Be clear about the purpose and goals, principles and procedures of the program. To familiarize students with first aid and one of the expected problems and the ways it should be tackled; enable them to understand the needed information.

Activities: Reading

The teacher asked the students what first aid is. Some of the students expressed their ideas. There were class discussions about chocking, its causes and treatments. The students were divided into groups. Each group had 5-6 members. Each group read the passage. The groups answered the questions and they compared their answers. Then the teacher checked the answers with the explanations.

Assignments: Reading passage; Computers and the exercises.

Week 3

Topics: Computers; Tenses in English.

Objectives: Understand reading passages and different tenses in English in the context.

Activities: Reading and Structure; Tenses in English; Question tags.

The way of covering this passage was the same as week 2. The teacher also explained tenses in English and question tags. First the teacher asked the students to mention the form, usage and adverbs of time for each tense with the related examples. Then the teacher wrote the tenses and examples. The students took notes. The same procedure was done for question tag.

Assignments: Work sheet about matching medical terminologies with their meanings, reading short passages and answer the questions as true/false, multiple choice, reference, cloze test, vocabulary and definitions.

Week 4

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Be aware of and able to understand the language structures of medical readings, terminologies and vocabulary.

Activities: Reading and structure, medical terminologies and their definitions; conjunctions as: and type, or type, but type, and so type.

The groups read the passages quickly and checked the answers. There was class discussion. The groups answered the questions. The rest of the work sheet about the medical terminology was discussed and checked in group work and class discussion. The teacher checked the answers at the end. Then the teacher wrote some examples for each type of conjunctions and asked the groups to explain them. In the end, the teacher explained the conjunctions with reference to the

groups' explanations and the examples in brief.

Assignments: Work sheet; reading passages, medical terminologies and vocabulary, grammar test as multiple choice question, synonyms, antonyms.

Week 5

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary.

Activities: The groups answered the questions of the work sheet and discussed them. The teacher explained the medical terminologies and vocabulary of the related materials such as: dysuria, dyspepsia, infection, symptoms, stethoscope, arteriosclerosis, etc. Then the teacher wrote if clauses on the board and the five types of it. Then the teacher asked on member of each group to come to the board to explain and exemplify if clause with the alternatives such as "unless, only if, provided that, etc." The teacher explained if clause briefly at the end. The same procedure was done for wish clause. There was class discussion about the above points.

Assignments: Work sheet; reading comprehension with related exercises, a grammar test as 65 multiple choice questions.

Week 6

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: Group work and class discussion were conducted for covering the reading passages. The teacher checked the answers quickly at the end. The teacher explained the medical terminologies and vocabulary of the related materials. The

teacher asked some students from different groups to read the passage. They translated this passage sentence by sentence into Turkish. There was group discussion. In the end, the teacher gave the Turkish translation. Then the teacher wrote some Turkish sentences about medicine and asked the groups to translate them into English. After the group discussion, the teacher wrote the English translations on the board and answered the students' questions.

After that, the teacher asked some members of each group to come to the board and explain active/passive voice with the related examples. Then the teacher explained them briefly. The same procedure was done for covering direct/indirect speech. Then teacher wrote some examples for each and asked the groups to translate them into Turkish. After the groups mentioned their answers, the teacher wrote the translations. The teacher answered the students' questions.

Assignments: Work sheet, dialogue, and 3 reading passages with the related exercises.

Week 7

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher asked the groups to explain auxiliaries and modals with the related examples in the same way they did in the previous week in (group work, class discussion, exemplification). Then the teacher asked the groups to read the dialogue. Then the teacher checked the answers. After that the groups discussed and answered the questions of the three reading passages as: Dr. Rogers, Effects of cigarette smoking, and Microscopic organisms. Then the teacher checked the answers in the end.

Assignments: Work sheet: industrial medicine and safety; learning about computers; cold and flu.

Week 8

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

Activities: The teacher asked the groups to explain and exemplify adjectives and adverbs with the discussions and translated the sentences into Turkish. Then the teacher wrote some Turkish sentences and asked the groups to translate them into English. After group discussion, the teacher provided the translations. Then the teacher asked the groups to read the first passage, industrial medicine and safety. The teacher asked the groups to give the answers to the related questions. The teacher checked the answers. The same procedure was done for the second passage, learning about computers. Then the teacher explained about the project (Appendix C), its aim and the topics in brief.

Assignments: Worksheet; cold and flu, SPAS: Good or Bad? and Arts or Science? Conducting the project.

There were 22 groups in the first year due to practical lesson such as laboratory lesson. Accordingly 22 medical topics were chosen. There were about 6 students in each group. Since the first year medical students were grouped at the beginning of the semester by the first year coordinator, the groups for the project were the same group.

The topics were assigned to each group by the instructor to avoid mismanagement of choosing the topics and among the groups. The time allotted to conduct the project was three weeks. The students could use any type of sources. They could consult one another, the instructor, and the other medical lesson instructors. After three weeks the students were asked to present their project group by group in 10 minutes in any way they wanted. Discussion and questioning were allowed after the presentation for 10 minutes for each group. Peer evaluation was included in the project. After the presentations, each group

received feedback by the instructor orally and in written form. Regarding the evaluation, the evaluation in the medical English course is conducted through two mid-term examinations and one final examination. This was used for the control group. However, for the experimental group, the project had 30 points (15 points for conducting the project, 10 points for presentation and 5 points for peer evaluation) out of 100. The two mid-term examinations and one final examination had 70 points.

These topics were chosen since medical students should deal with them frequently and also these topics are general topics for their studies. The topics are as follow:

1. Common Diseases
2. Medical Biology
3. Genetics
4. First Aid
5. Public Health
6. Biochemistry
7. Organic Chemistry
8. Microbiology
9. Histology-Embryology
10. Immunology
11. Biophysics
12. Biostatistics
13. Metabolism
14. Physician and Medical Specialist
15. Anatomy
16. Surgery
17. Radiology
18. Parazitology
19. General Pathology
20. Circulatory-Respiratory Systems
21. Endocrine System
22. Digestive System

Week 9

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

The teacher asked the groups to explain and exemplify determiners, nouns, and pronouns with the discussions and translated the sentences into Turkish. Then the teacher wrote some Turkish sentences and asked the groups to translate them into English. After group discussion, the teacher provided the translations. Then the teacher asked the groups to read the first passage. The teacher asked the groups to give the answers to the related questions, and translate the related terminologies and words into Turkish. The teacher checked the answers. This lesson plan is explained in detail in Appendix A.

Assignments: Worksheet; the reading passages: Your diet and danger for the fun of it. The teacher asked the groups to translate the first passage (your diet) into Turkish sentence by sentence.

Week 10

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with translation of medical sentences from English to Turkish and vice versa.

The teacher asked the groups to explain and exemplify noun clauses with the discussions and translated the sentences into Turkish. Then the teacher wrote some Turkish sentences and asked the groups to translate them into English. After group discussion, the teacher provided the translations. Then the teacher asked the groups to read the first passage. The teacher asked the groups to give the answers to the related questions, and translate the related terminologies and words into

Turkish. The teacher checked the answers. Then the translations for the second passage were discussed and the teacher gave the translation in the end.

Assignments: Worksheet; the reading passages: Ordinary Aspirin is truly wrong drug, and Are you really a non-smoker?

Week 11

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with different types of prepositions, translation of medical sentences from English to Turkish and vice versa, and paraphrasing; give feedback about the projects.

Activities: The teacher taught prepositions with the related examples. The teacher asked the groups to explain some of the key points about some prepositions. Then the groups read the first passage, Ordinary aspirin is truly a wrong drug. The groups paraphrased some of the sentences. The teacher answered the questions. The groups translated some of the related words, phrases and sentences. Then the teacher asked the groups to read the second passage, Are you really a non-smoker? The groups discussed and answered the questions and the teacher checked them. The teacher answered the students' questions. Then the students submitted their projects.

Assignments: Worksheet; the reading passages: Pain and the mind and the body.

Week 12

Topics: Reading passages, medical terminologies, vocabulary, structures.

Objectives: Understand medical readings, medical terminologies and vocabulary; to familiarize the students with adverbial clauses, translation of medical sentences from English to Turkish and vice versa, and paraphrasing, enable students to review /revise their project after receiving feedback.

Activities: The teacher asked the groups to explain and exemplify adverb clauses with the discussions and translated the sentences into Turkish. Then the teacher wrote some Turkish sentences and asked the groups to translate them into English. After group discussion, the teacher provided the translations. Then the teacher asked the groups to read the first passage: Pain. The groups tried to paraphrase the sentences. After class discussion, the teacher checked them. The groups gave the answers to the related exercises and the teacher checked them. After that, the groups read the second passage: The mind and the body. Then the groups tried to paraphrase the sentences. Then the teacher checked them. The related exercises were answered by the groups and checked by the teacher. The teacher answered the students' questions. In the end, the teacher gave the feedback about the projects to the groups.

Assignments: Worksheet; basic word parts, prefixes, suffixes, presenting the project.

Week 13

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, combining form, prefix and suffix; medical terminologies and vocabulary; to familiarize the students with causative and inversion; translation of medical sentences from English to Turkish and vice versa; and paraphrasing, provide opportunities for students to demonstrate their presentation skills.

Activities: The teacher taught causative as well as inversion with the related examples. The teacher translated the sentences into Turkish and the teacher also wrote some Turkish sentences with the English translations. After that the teacher explained word root, compound words, combining forms, the definitions for prefix and suffix. Then the groups did one exercise in the form of fill in the blanks as 11 questions. Then the teacher checked the answers. After that the groups (7 groups out of 22) started to present their projects. There was class and group

discussion.

Assignments: Worksheet; basic word parts, prefixes, suffixes, project presentation.

Week 14

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, and combining form; define prefix, describe functions of prefixes and list and define prefixes for each function; medical terminologies and vocabulary, provide opportunities for students to demonstrate their presentation skills.

Activities: The teacher explained medical prefixes with the related meanings and examples. The prefixes were divided into sets according to the various functions and they were explained accordingly. The sets of prefixes were: prefixes related to position regarding time and place; prefixes describing position in relation to other parts; prefixes related to type; prefixes describing direction; prefixes describing number; prefixed related to size and amount; prefixes denoting color. Then the teacher answered some of the exercises for each part and gave the answer key for all the exercises. After that the groups (the other 7 groups out of 22) started to present their projects. There was class and group discussion.

Assignments: Worksheet; basic word parts, prefixes, suffixes, project presentation.

Week 15

Topics: Basic word parts, medical terminologies, vocabulary, structures.

Objectives: Identify the parts of a word; define the terms related to word root, compound word, and combining form; define suffix, describe seven functions of suffixes and list and define suffixes for each function; medical terminologies and

vocabulary, provide opportunities for students to demonstrate their presentation skills.

Activities: The teacher explained medical suffixes with the related meanings and examples. The suffixes were divided into groups according to their functions and they were explained accordingly: suffixes which change a root word to a noun; suffixes which change a root word to an adjective; suffixes which denote a state or condition; suffixes which indicate a surgical or diagnostic procedure; diminutive suffixes which indicate smallness; suffixes which indicate a chemical compound; suffixes which form plurals. Then the teacher answered some of the exercises for each part and gave the answer key for all the exercises. After that the groups (the other 8 groups out of 22) started to present their projects. There was class and group discussion.

Assignments: Worksheet; basic word parts, prefixes, suffixes.

Week 16

Conducting the post-test and the attitude scale.

APPENDIX I

Turkish Summary

GİRİŞ

İngilizce, bugün tüm dünyada en yaygın şekilde kullanılan dillerden biridir. İngilizce, anadili İngilizce olmayan pek çok ülkede uluslararası iletişimin ana aracı haline gelmiştir. Bu nedenle, çoğu ülkede İngilizce'yi bir yabancı dil olarak öğretme ve öğrenme gereksinimi ortaya çıkmıştır. Dolayısıyla İngilizce, günlük yaşamda ve mesleki kariyerde, iletişimi gerçekleştirmek üzere yabancı bir dil olarak hızla büyüyen ihtiyacı karşılamak üzere pek çok eğitim kurumunda bir iletişim aracı haline gelmiştir (Crystal, 1977).

Çoğu İngilizce öğretmeni için Tıbbi Amaçlı İngilizce, genel olarak belirli bir kullanım bağlamı açısından "genel" ya da özel bir dil şekli ve diğer şekillerden tür olarak farklı tanımlanan bazı özellikleri yansıtmaktadır. Tıbbi Amaçlı İngilizce özel bir İngilizce türünün - bilimsel kelimelerin ve gramerin - öğretilmesi olayı olarak görülmektedir ve dolayısıyla Tıbbi Amaçlı İngilizce özel bir dil olarak görülmekte ve özel bir şekilde öğretilmektedir. Tıbbi İngilizce'nin öğretilmesinde öğretmenler, genellikle özel kelime dağarcığına ek olarak edilgen yapıları ve geniş zaman gibi resmi şekillerin özelliklerini vurgulamaktadırlar. Bu şekilde Tıbbi İngilizce sınıfı yalnızca dil yapısının ve gramer kurallarının öğretilmesi olarak ele alınmaktadır.

Öğrenci merkezli kurs tasarımı, genel olarak kursun planlanıp uygulanması ve öğrencinin bireysel gereksinimlerine uyarlanması prensibine dayalıdır. Hutchinson ve Waters'ın (1987), öğrencinin öğrenme sürecindeki her şeyin belirleyicisi olma olasılığını reddetmesine ve öğrenmeyi bir dikkat odaklanması olarak daha geniş bir şekilde tanımlamayı tercih etmelerine rağmen bu yaklaşım, öğrenme odaklı görüşe benzerdir.

Şu ana kadar Tıbbi İngilizce eğitimi ve öğrenimine ilişkin birkaç araştırma

olmasına rağmen, öğrenci merkezli öğretimin etkisi çok fazla incelenmemiştir. Şu ana kadar gerçekleştirilen araştırmalar çoğunlukla gereksinimleri değerlendirmeye ve araç-gereç hazırlanmasına odaklanmıştır. Bunun yanı sıra, birinci sınıf tıp öğrencileri hakkında tatmin edici düzeyde araştırmalar yoktur. Bu bağlamda, Türkçe olarak yapılmış birkaç araştırma bulunmaktadır. Dolayısıyla öğrenci merkezli öğretimin Tıbbi İngilizce alanında birinci sınıf tıp öğrencilerinin performansı, tutumları ve öğrenmeleri üzerinde inceleme yapmaya gereksinim bulunmaktadır.

Araştırmanın Amacı

Bu araştırmanın amacı, öğrenci merkezli eğitim ve öğrenim sürecinin alt ileri düzey İngilizce seviyesinde olan birinci sınıf tıp öğrencilerinin öğrenme performansları, tutumları ve Tıbbi İngilizce'yi öğrenmeleri üzerine etkilerini incelemektir. Bu amaca bağlı olarak, aşağıdaki özel araştırma soruları tüm araştırma sürecine rehberlik edecektir:

1. Deney grupları (öğrenci merkezli eğitime tabi tutulmuş) ve kontrol gruplarının (geleneksel eğitime tabi tutulmuş) yapılan Tıbbi Ingilizce başarı testlerindeki başarı performanslarında belirgin bir fark var mıdır?
2. Tıbbi İngilizce'nin kavranmasında deney ve kontrol gruplarının performansında belirgin bir fark var mıdır?
3. Tıbbi İngilizce'nin eğitimine yönelik olarak deney ve kontrol gruplarının tutumlarında belirgin bir fark var mıdır?
4. Deney grubundaki tıp öğrencilerinin öğrenci merkezli eğitime ilişkin görüşleri nelerdir?

Araştırma Soruları

1. Deney grupları (öğrenci merkezli eğitime tabi tutulmuş) ve kontrol gruplarının (geleneksel eğitime tabi tutulmuş) yapılan Tıbbi İngilizce başarı testlerindeki başarı performanslarında belirgin bir fark var mıdır?
2. Tıbbi İngilizce'nin kavranmasında deney ve kontrol gruplarının performansında belirgin bir fark var mıdır?
3. Tıbbi İngilizce'nin eğitimine yönelik olarak deney ve kontrol gruplarının tutumlarında belirgin bir fark var mıdır?

4. Deney grubundaki tıp öğrencilerinin öğrenci merkezli eğitime ilişkin görüşleri nelerdir?

Hipotezler

1. Deney grupları (öğrenci merkezli eğitime tabi tutulmuş) ve kontrol gruplarının (geleneksel eğitime tabi tutulmuş) Tıbbi İngilizceyi öğrenmelerinde belirgin bir fark yoktur.

1.1. Deney grupları (öğrenci merkezli eğitime tabi tutulmuş) ve kontrol gruplarının (geleneksel eğitime tabi tutulmuş) test öncesi Tıbbi İngilizce başarı testlerinde belirgin bir fark yoktur.

1.2. Deney grupları (öğrenci merkezli eğitime tabi tutulmuş) ve kontrol gruplarının (geleneksel eğitime tabi tutulmuş) test sonrası Tıbbi İngilizce başarı testlerinde belirgin bir fark yoktur.

2. Tıbbi İngilizce'nin öğrenilmesinde deney ve kontrol grupları arasında belirgin bir fark yoktur.

3. Tıbbi İngilizce programına yönelik deney ve kontrol gruplarının öğrenmeye ilişkin tavırlarında belirgin bir fark yoktur.

3.1. Tıbbi İngilizce programına yönelik olarak deney ve kontrol gruplarının test öncesi tavırlarında belirgin bir fark yoktur.

3.2. Tıbbi İngilizce programına yönelik olarak deney ve kontrol gruplarının test sonrası İngilizceyi öğrenmeye tavırlarında belirgin bir fark yoktur.

Araştırma Deseni

Bu araştırmada test öncesi ve test sonrası planlanan deneysel tasarım kullanılmıştır. Ek olarak, araştırmadaki deneklerin görüşlerini tanımlamak üzere bir niteliksel plan kullanılmıştır.

Deneyden önce, bir başarı testi ve bir tutum testi ön testler olarak verilmiştir. Kontrol grubu geleneksel eğitimle devam ederken, deney grubu öğrenci merkezli eğitime tabi tutulmuşlardır.

Araştırmacı, her dersin başlamasından bir hafta önce, her iki gruba eğitim veren öğretmeni, öğrenci merkezli yaklaşıma ilgili olarak eğitmiştir.

Daha sonra deney grubu, öğrenci merkezli eğitime devam etmiştir. İşlemin sonunda, test sonrası testler olarak başarı testi ve tutum testi yapılmış ve öğrenci

merkezli öğretim hakkındaki görüşlerini belirlemek üzere deney grubundakilerle bir kurs sonrası görüşme gerçekleştirilmiştir. Test sonrası testler yapıldıktan bir ay sonra, öğrenme testi olarak aynı başarı testi her iki gruba uygulanmıştır.

Dersin Tanımı

Tıbbi İngilizce dersi, Gazi Üniversitesi, Tıp Fakültesi birinci sınıf tıp öğrencilerine zorunlu ders olarak verilmektedir. Öğrenciler 28 haftalık akademik yıl içerisinde 56 saat Tıbbi İngilizce dersi almıştır: İlk akademik yıl 5 komite içermektedir ve her komitede sırasıyla 10 saat, 10 saat, 12 saat, 14 saat ve 10 saat olmak üzere ders almıştır.

Tatbikten önceki ilk haftada, başarı testi (çoktan seçmeli test) ve tutum ölçeği hem kontrol hem de deney gruplarına uygulanmıştır. Uygulama, 2005 – 2006, 2006 – 2007 akademik yıllarında kontrol ve deney grupları için 14 hafta sürmüştür.

Son olarak, 14 hafta sonunda uygulama tamamlanmış ve uygulamadan önce yapılan işlemler (başarı testi, tutum ölçeği) uygulamadan sonra da yapılmıştır. 17 ve 18'inci haftalarda, deney grubu öğrencileriyle özel görüşme yapılmıştır.

Veri Kaynakları

Bu araştırmanın katılımcıları, 2005 – 2006 ve 2006 – 2007 akademik yıllarında, Gazi Üniversitesi Tıp Fakültesinde (Ankara, Türkiye) Tıbbi İngilizce dersi alan birinci sınıf öğrencileridir (n = 180).

Veri Toplama Araçları

Bu araştırmada deneysel bir tasarım kullanılmıştır. Bir başarı testi, bir tutum ölçeği, ve yarı yapılandırılmış görüşmeler kullanılmıştır.

Başarı Testi

Tıbbi İngilizce başarı testi, araştırmacı tarafından geliştirilmiş 50 madde içermektedir. Test, öğrencilerin Tıbbi İngilizce bilgisini ve başarısını deneyden önce, deney sonunda ve deneyden bir ay sonra belirlemek üzere kullanılmıştır.

Tutum Ölçeği

Tutum ölçeği, öğrencilerin pek çok perspektiften Tıbbi İngilizce programına yönelik tutumlarını incelemeyi hedefleyen 38 maddeden oluşmaktadır: Tutum ölçeği kurs, etkinlikler, ödevler ve genel olarak etkileyici yönleri kapsamaktadır. Bu kalemler hoşlanmak / hoşlanmamak, meraklı olmak / sıkılmak, ilgili / ilgisiz, faydalılık, önemli / önemsizlik, ilgili olma / ilgisiz olma, gereklilik / gereksizlik, unutkanlık, kendine güven / kaygı, kolaylık / zorluk ve zorunluluk / isteklilik gibi tutumları yansıtabilen sıfatlardan oluşmaktadır.

Yarı - Yapılandırılmış Görüşme

Deney grubundaki 25 öğrenci ile Öğrenci Merkezli Öğretime ilişkin görüşlerini almak üzere uygulamadan sonra yarı yapılandırılmış bir görüşme yapılmıştır. 12 öğrenci ile türkçe olarak türk çevirmen tarafından, 13 öğrenci ile İngilizce olarak araştırmacı tarafından görüşme yapıldı. Görüşmeler kayıt edildi. Görüşme kayıtları görüşmelerden hemen sonra Türk çevirmen ve araştırmacı tarafından cümle cümle incelendi.

Görüşme aşağıdaki boyutları içermektedir: 1) Ders hakkındaki algılar 2) Ders hakkındaki beklentiler 3) Beklentilerin, hedeflerin ve amaçların yerine getirilmesi 4) Ders materyalleri hakkındaki düşünceler 5) Öğrenme etkinlikleri gibi kullanılan teknik ve stratejiler hakkındaki algılar 6) Motivasyon 7) Değerlendirme süreci yaklaşımları ve 8) Ek yorum ve öneriler.

Veri Toplama İşlemleri

Uygulamadan önce ve sonra, çoktan seçmeli başarı testi (n=50) ve tutum ölçeği (n=38) sırasıyla 2005 – 2006, 2006 – 2007 akademik yıllarının başında (sırasıyla Eylül 2005 ve Eylül 2006) hem kontrol grubuna hem de deney grubuna uygulanmıştır.

Veri Analiz İşlemleri

Başarı testindeki ve tutum ölçeğindeki sayısal veriler betimsel ve tahmine dayalı istatistik yöntemleri kullanılarak analiz edilmiştir. Söz konusu sayısal işlemler, başarıya ilişkin olarak deney grubu ve kontrol grupları arasındaki farkı anlamak üzere bağımsız gruplar t-testi yapılmasını içeriyordu. Tutum ölçeği için

negatif maddeler pozitif hale getirildi. Daha sonra test öncesi ve test sonrası sonuçlar için ortalama puanlar elde edildi. Son olarak, öğrencilerin Tıbbi İngilizce dersine yönelik tutumlarını incelemek üzere bağımsız gruplar t-testi gerçekleştirildi. Bütün bağımsız gruplar t-testi bulguları için istatistiksel önem düzeyi olarak $\alpha < .05$ kullanılmıştır.

Araştırmanın Sınırlılıkları

Bu araştırmanın sınırlamalarından birisi, kontrol grubu ve deney grubu uygulamalarının iki farklı dönemde olmasıdır. Araştırmacının uygulamaları aynı dönemde eşitleyememesinin nedeni, kontrol grubunun bazı öğrencilerinin deney grubu derslerinde yer almaları ve bunun tam tersinin meydana gelmesidir. 2005 – 2006 akademik yılındaki kontrol grubundaki öğrencilerin iki bölüme ayrılmış olmaları nedeniyle, ilk bölümdeki bazı öğrenciler ikinci bölüme katılmış ve ikinci bölümdeki bazı öğrenciler birinci bölüme katılmıştır. 2006 – 2007 akademik yılındaki deneysel grup için de bu durum aynı şekilde geçerlidir. Bu nedenle araştırmacı uygulamayı iki ayrı dönemde gerçekleştirmek zorunda kalmıştır.

Bu araştırma yalnızca tek bir tıp fakültesiyle sınırlıdır. Araştırma için tahsis edilen süre nedeniyle bütün tıp fakültelerindeki birinci sınıf öğrencilerini dahil etmek mümkün olmamıştır. Sonuç olarak bu araştırma tüm tıp fakültelerine genellenemez. Bu araştırmanın bir tıp fakültesinde gerçekleştirilmesi nedeniyle, diğer tıp fakültelerine genellenebilirlikleri sınırlanabilir.

Gazi Üniversitesi Tıp Fakültesi'ndeki öğrenci grupları için değerlendirilen gereksinimler, kurumsal ve bireysel hedeflerin ve gereksinimlerin değişebilecek olmasından dolayı gelecek yıllarda okuyan diğer öğrenci gruplarıyla uyumlu olmayabilir.

Kontrol ve deney grupları yaş, cinsiyet ve Genel İngilizce alanındaki genel arka planları ve öğrenme tarzları açısından aynı değildir. Genel olarak bireysel farklar bulunmaktadır.

Bu araştırmanın diğer bir sınırlanması, bu çalışmada kovaryans testinin uygulanmamasıdır. Bu durum, araştırmadaki katılımcıların önceki İngilizce bilgileri üzerinde etkili olabilir.

Bu araştırmanın katılımcılar tıbbi İngilizce dersini almalarının yanı sıra İngilizceyi öğrenmiş veya geliştirmiş olabilirler. Bu durum araştırma bulgularını etkileyebilir.

BULGULAR

Test sonrası sonuçlardaki tanımlayıcı istatistik, Öğrenci Merkezli Öğretime tabi tutulan deney grubunda daha yüksek bir başarı seviyesinin olduğunu göstermiştir. Bununla birlikte bu bulgu bağımsız gruplar t-testi tarafından ölçüldüğü şekliyle belirgin değildir.

Öğrenme testi puanları, bağımsız gruplar t-testi ile karşılaştırılmış ve bulgular deneysel grup lehine belirgin bir ortalama fark ($\overline{X}$ = 92,18) ortaya koymaktadır.

Tutum Ölçeği Sonuçları

Deneysel gruptaki öğrencilerin Tıbbi İngilizce'ye yönelik tutumlarının ortalama puanları Tıbbi İngilizce dersine yönelik olumlu bir tutum göstermiştir. Buna uygun olarak yarı yapılandırılmış görüşmedeki tanımlayıcı veriler, bizlere daha fazla tanımlayıcı veri sağlayabilir.

Görüşme Sonuçları

Hedeflerin Yerine Getirilmesi

Yerine getirilen hedeflere ilişkin olarak, görüşmelerde çoğu tıbbi kelimeleri, terminolojiyi ve literatürü öğrenmenin hedefleri olduğunu ve bunları çoğunlukla yerine getirdiklerini söylemişlerdir. Görüşülen 16 öğrenci sömestrin başında derse ilişkin açık beklentilerinin olmadığını söylemiştir. Bununla birlikte, aynı zamanda Tıbbi İngilizce dersinde ve diğer derslerde ilerledikçe beklentileri şekillenmiştir. Bu öğrenciler konuları beklediklerinin ötesinde öğrendiklerini söylemişlerdir. Görüşme yapılan 10 öğrenci, çoğunlukla tıbbi eğitimde İngilizcelerini iyileştirmeleri gerektiğinden dolayı, literatürü takip etmek üzere tıbbi terminolojiyi öğrenmek istediklerinden söz etmiştir.

Ders ve Öğrenme Ortamı Hakkındaki Algılar

Öğrenci – Merkezli Etkinlikler

Görüşmede bulunulan öğrenciler tabi oldukları öğretim şeklinden memnun kaldıklarını ifade etmişlerdir. Funda, ilgili konuları öğrenmekten hoşlanmaları, özellikle grup çalışması olanlar dahil olmak üzere etkinliklerde yer almaktan memnun olmalarının öğrenme şekillerinin bunda etkili olduğunu söylemiştir. Bu yaklaşımın ilgi çekici olması öğrencilerin motivasyonunu da artırmıştır. Öğrenciler arkadaşları tarafından gerçekleştirilen sunumların akıllarında kaldığını ve aynı konuları hatırlamalarını ve diğer tıbbi derslerdeki benzer konuları öğrenmelerini kolaylaştırdığını söylemişlerdir. Örencilerin çoğu, grup proje çalışmasından hoşnuttur. Zayıflıklar grup oluşturdukları öğrencilerle ilişkilendirilmiştir. Kaza sonucu ya da rastgele gruplandırmalar çok verimli olarak görülmemektedir.

Öğrenmeyi Sahiplenme

Öğrenmeyi sahiplenme pek çok açıdan algılanmaktadır. Örneğin Canan, bunu sorun çözümleme etkinliklerinde, konu ya da sorular ileri sürüldüğünde, sınıf tartışmalarında kendi fikirlerini söyleyebilme olarak görmektedir. Bu durum, makul çözümler ve yanıtlar aramak için kendisini daha rahat ve daha kendine güvenir hale getirmiştir. Canan özellikle öğretmenin bu anlarda olmaması ve sınıfta bu etkinliği yönetebilmesi nedeniyle hoşnut olmuştur.

Karar Alma

Mülakat yaptığımız öğrencilerden biri olan Sibel, proje yürütme açısından kendilerine seçenekler verildiğini ifade etmiştir. Bununla birlikte, eğer öğrenciler kendi grup üyelerini seçme şansına sahip olurlarsa daha iyi motive olabileceklerinden bahsetmiştir. Özellikle hoşlanmadıkları öğrencilerin olduğu bir grupta oldukları söylendiğinde rahatsız olmuşlardır.

Öğrenci Merkezli Öğrenme Ortamlarının Gerçekliği

Ders Hedeflerinin Doğruluğu

Öğrenciler ders hedeflerinin gerçekleştirildiğini anlayabilmeleri için daha fazla zamana ve tıbbi eğitimde daha fazla pratik yapmaya ihtiyaçları olduğunun farkındalar. Böylelikle, öğrenciler tıbbi ingilizcenin ne olduğu hakkında bilinçlerinin artacağına kuvvetle inanmaktadırlar.

Öğrenme Ortamının Doğruluğu

Emel, gerçekleştirdikleri etkinlik tipleri hakkındaki takdirine ve mutluluğuna işaret etmiş ancak sınıfların kalabalık olması nedeniyle yeterince Tıbbi İngilizce pratiği yapamamaktan ve yetersiz süreden şikayet etmiştir. Tıbbi eğitim programının ve Tıbbi İngilizce dersinin politika ve programı hakkında bilgilendirilmiş ve bilinçli olmasından dolayı öğrendiklerini, eğer daha fazla saat ya da sınıfta daha az sayıda öğrenci sağlanırsa özellikle konuşma açısından doğru kapsamlarla ilişkilendirebileceklerini iddia etmiştir. 10 saat fazladan yapılan dersin bile Tıbbi İngilizce'yi daha fazla öğrenmelerine yardımcı olduğuna inanmaktadır.

Ödevler

Öğrenciler belirli tıbbi konuları ele alma şekillerinin pratik yapmalarına neden olduğunu, grup çalışması, proje ve sunumlar gerçekleştirme yoluyla bu belirli konulardaki bilinçlerinin arttırdığını ifade etmişlerdir. Emel tıbbi eğitimde öğrenmesi gereken çok fazla şey olduğunu, birinci sınıf tıp eğitiminde öğrenilecek özel konu ve derslerin bulunduğunu belirtmiştir. Ayrıca, Tıbbi İngilizce'nin birinci sınıf eğitimi ile uyum içerisinde olduğunda kendilerine birinci sınıf tıp dersleri ve tıp eğitimi hakkında daha fazla ve destekleyici bilgi sağlayabileceğini ifade etmiştir.

Tıbbi İngilizce Öğrenme Ortamındaki Motivasyon Yönleri

Katılımcı Öğrenme

Öğrenciler, dahil oldukları belirli etkinliklerin özellikle çok motive edici olduğunu ve kendilerine gelecekteki tıbbi eğitim çalışmalarında göz önünde bulundurabilecekleri ve kullanabilecekleri bilgiyi sağladığını ifade etmişlerdir. Esra, öğretmenin rolünün eksiksiz yardımının, yanıt ve öğrenme kaynağına ulaşmayı sağlamasının kolaylaştırıcı ve rehberliğinin çok etkili olduğunu, bu değişimin öğrencilerin çeşitli öğrenme açılarına tabi olmalarını sağladığını söylemiştir.

Bir Motivasyon Faktörü Olarak Öğrenme Ortamı

Öğrenciler, ayrıca esnek bir sınıf ortamında bulunmaktaki memnuniyetlerini ifade etmişlerdir. Öğrenciler, hata yapma korkusu olmaksızın ve hata yaptıklarında başkalarına göre küçük düşme duygusu olmaksızın kendilerini serbestçe ifade edebildikleri bir ortamda hissetmektedir. Bu durum öğrencileri gelecekteki çalışmaları için olumlu bir şekilde motive etmiştir. Özellikle projeyi grup olarak kendi başlarına yönetme fırsatına sahip olma ve öğrenmelerinde önemli rollere sahip olma, öğrencileri büyük oranda motive etmiştir. Kaan ilk defa sunumda bir mikrop / bakterisi olarak rol alıp sunum yapma fırsatına sahip olduğunu söyledi.

Değerlendirme Hakkındaki Algılar

Değerlendirme hakkındaki öğrenci algıları aşağıdaki iki konu altında açıklanmıştır.

Son Değerlendirme Aracılığıyla Bilgi Birikimi Oluşturma

Görüşme yapılan bütün öğrenciler proje değerlendirmesinin belirli bir konu ile tıbbi eğitim genel konularını öğrenmelerini sağlamada çok etkili bir aracı olduğu konusunda mutabık kalmışlardır. Aysun, arkadaşlarının fikirlerini ve yorumlarını dinleme gereksinimi ve ne söylendiğini daha dikkatli ve eleştirel bir şekilde düşünmelerine gereksinim olduğunu söylemiştir. Ali, bir proje yapma hakkında ilk başta yanlış kavramları olduğunu söylemişti. Gerçekte, bunu yazmaları ve öğretmene sunmaları gerektiğini düşündüler. Öğretmen proje verme ve yönetme amacını netleştirdikten sonra, öğrenciler öğrenme, paylaşma, işbirliği yapma ve değerlendirme yöntemlerini anladılar.

Öğrenci Değerlendirme

Görüşme yapılan bütün öğrenciler, birbirlerini değerlendirmenin çok etkili ve faydalı olduğu konusunda mutabık kalmışlardır. Bununla birlikte, hemen hepsinin aynı sınıfta olmaları ve eksikliklerden çok, olumlu tarafları ifade etmeye çalışmalarından dolayı objektif olabileceklerinin sorgulanması gerektiği vurgulamıştır. Dahası, öğrenciler değerlendirmeye iki adet vize sınavı ve bir adet final sınavı olarak resmi sınavlara eşlik etmesi fikrini olumlu karşılamışlardır. Buna uygun olarak, değerlendirmede denge vardı. Bununla birlikte, öğrencilerin birbirini değerlendirmesinin olumlu etkileri göz önünde bulundurulmalıdır.

Gelecekteki Uygulamalar için Öğrenciler Tarafından Yapılan Öneriler

Öğrenci Merkezli Eğitim için Kaynaklar

Kaynakların paralel metinleri, birinci sınıf tıp eğitimi ile ilgili malzemeleri yansıtması önerilmiştir.

Öğrenci Merkezli Eğitim için Eğitim Yaklaşımı

Öğrenciler kalabalık sınıflardan ve derste çok fazla öğrenci olmasından hoşlanmadıklarını ifade etmişlerdir. Öğrenciler öğrenci sayısının daha az olması gerektiğini önermiştir.

Proje Hazırlama

Ebru, grup üyelerinin birbirinden hoşlanmaması ve yeterince iyi bir şekilde işbirliği yapamayabilecekleri nedeniyle öğrencilerin proje yapma grubu üyelerini seçme şansına sahip olmaları gerektiğini önermiştir. Diğer bir öneri ise öğretmen tarafından kılavuzluk yapılmasıdır. Öğretmenin proje sayfa sayısı, renkli ya da siyah beyaz resimli ya da değil vb. gibi kriterleri, proje ayrıntılarını netleştirmesi gerekmektedir.

Ara ve Final Sınavları

Vize ve final sınavlarına ilişkin öğrenci algıları öğrencilerin bunları bir gereklilik olarak düşündüklerini göstermektedir. Aksi takdirde, özellikle diğer tıp dersleri de benzer bir şekilde değerlendirildiğinde değerlendirmenin kalitesi, objektifliği ile resmiliğini sorgulayabilirler.

Sonuçlar

Deney ve Kontrol Gruplarının Başarıları

Test sonrası sonuçlar, deney grubundaki ortalama puanın, kontrol grubundakilerinden daha yüksek olmasına rağmen, çoktan seçmeli başarı testi aracılığıyla ölçülen başarı oranında, kontrol ve deney gruplarının performansı arasında istatistiksel açıdan belirgin bir fark olmadığı görülmektedir.

Deney ve Kontrol Gruplarının Tutumları

Bulgular, deney grubundaki öğrencilerin tutumlarının kontrol grubundaki öğrencilerden istatistiksel olarak farklı olduğuna işaret etmektedir. Ortalama notlar incelendiğinde, farkın deney grubunun lehine olduğu tespit edilmiştir. Bu

bulguyu anlamak için sayısal veriler, öğrencilerin öğrenme ortamına ve tabi oldukları eğitim şekline yönelik tutumları hakkında bilgi sağlamaktadır.

Bulgular, öğrencilerin grup çalışmasından, işbirliğinden ve proje yapmaktan hoşlandıklarını göstermektedir. Öğrencilerin verilen ödevlerde kendilerini rahat hissettikleri ve memnun oldukları sonucu çıkarılabilir.

Öğrenci Merkezli Öğrenme Sürecinin Öğrencilerin Tıbbi İngilizce Dersindeki Gelişmeleri Üzerindeki Etkisi

Tartışma, Grup Çalışması ve İşbirliği İle Öğrenme

Bu araştırmada, öğrencilerin tartışma, grup çalışması ve işbirliğinin Tıbbi İngilizce hakkında bilgi birikimi oluşturmakta kaçınılmaz olduğu bulunmuştur. Zaman azlığı ve kalabalık sınıflar programdaki kritik sınırlamalar olarak ifade edilmiştir. Bulgular grup çalışması, sorun çözme ödevleri ve işbirliği ile çalışma gibi öğrenci merkezli öğretim etkinliklerinin Tıbbi İngilizce ile tıbbi bilginin anlaşılması ve kavranması ile bağlantılı olduğunu göstermektedir.

İşbirliği Yoluyla Projenin Gerçekleştirilmesi

Bulgular, proje yapılmasının öğrencinin başarısı üzerinde olumlu bir etkiye sahip olduğunu göstermektedir. Genel olarak öğrenciler, fikirlerini ifade etmek ve onları başkalarıyla paylaşma şansını elde etmiştir. Öğrenciler konuları ve sorunları ele almak üzere birbirlerinin yetenek ve yetilerinden yararlanabilmişlerdir. Projeyi yürütmek ve sunmak, aynı hedefe ulaşmak üzere birbirleriyle işbirliği yapmak öğrencilerin tıbbi konuları anlamalarına ve bu konulardan hoşlanmalarına neden olmuştur.

Bununla birlikte, kalabalık sınıflar ve Tıbbi İngilizce dersi için tahsis edilen sürenin azlığı hakkındaki yorumlar da gözardı edilmemelidir. Öğrenciler daha az grup üyesi ile daha iyi performans gösterebilir ve projelerini sunmak için daha fazla zamana sahip olabilir. Buna uygun olarak tartışma ve öğrencilerin birbirine öğretmeleri için daha fazla zaman kalmış olur.

Alternatif Değerlendirme

Alternatif değerlendirme hakkındaki öğrenci algılarına ilişkin bulgular temel olarak öğrencilerin birbirlerini değerlendirmeleriyle ilgilidir. Bulgular, öğrencilerin bu gibi değerlendirme yaklaşımının yararlı ve motive edici olduğuna işaret etmektedir. Öğrenciler, öğrencilerin birbirlerini değerlendirmelerinin bir

grubun ürünleri ya da katkısı hakkında olumlu algılara sahip olduğunu ve çeşitli tıbbi konuların daha iyi anlaşılmasına neden olabileceğini iddia etmişlerdir. Bulgular, ayrıca öğrencilerin proje yönetiminde ellerinden geleni yaptıklarına, birbirleriyle işbirliği yaptığına ve gruplarda bilgileri ve fikirleri paylaştığına da işaret etmektedir.

Öğrenci Merkezli Öğretim Etkinliklerinin Öğrenci Motivasyonu Üzerindeki Etkileri

Motivasyon deney grubundaki pek çok değişken yardımıyla artmıştır. İlk olarak Tıbbi İngilizce dersi, birinci sınıf tıp öğrencileri açısından hayati olarak görülmektedir. Diğer tıbbi dersleri ve tıp eğitimiyle doğrudan ilişkili olmasından dolayı öğrenciler Tıbbi İngilizce'yi öğrenmeye içsel olarak motive olmuşlardır.

Uygulama Önerileri

1. Öğrencileri motive edici öğrenme etkileri uygulayabilecekleri bir bağlama yerleştirmek üzere Tıbbi İngilizce eğitiminde yeni bir hareket gerçekleştirilmesi önerilmektedir.
2. Proje değerlendirmesinin ve öğrenci merkezli etkinliklerin kullanılması öğrenci yeteneklerini artırmada önemlidir.
3. Değerlendirme işlemlerine ek olarak, öğrencilerin birbirlerini değerlendirmesi öğrenci ürünlerinin iyileştirilmesi ve yeni bilgi yapıları oluşturulması amacıyla kullanılmalıdır.
4. "Eylemlerin ve anlayışın kişisel, kişilerarası, kurumsal ve sosyo kültürel olarak etkilendiği (Hyland, 2000, p. 9): öğrencilerin kendi mesleki yazıları ve diğerlerinin yazıları üzerindeki düşüncelerin alma" sınıf projesi öğrencilerin kendi seçtikleri araştırma alanında yazar ve okuyucu arasındaki karmaşık ilişkileri ortaya koymalarına ve "özelliklerin" samimi bir toplumun "aralarına kabul edilmemiş üyelerinin inanç ve uygulamalarıyla ilgili olduğunu görmek için" yardımcı olmada ilk adım olarak hizmet görebilir (Hyland, 2000, p.149).
5. Bilginin yapısı öğretmenin, öğrenci merkezli eğitim ve öğretme ile öğrenme olarak adlandırılan daha geniş kapsamlı süreçler hakkındaki anlayışını yaşam boyu iyileştirme aracına kendisini adamasını gerektirmektedir (Henson, 1993). Öğretmenlerin özellikle Tıbbi İngilizce

öğretmenlerinin bu metodu izlemesi önerilir, böylece öğrenciler için daha iyi fırsat sağlanabilir.

Araştırma Önerileri

1. Türkiye'de öğrenci merkezli yaklaşımın birinci sınıf tıp öğrencilerinin Tıbbi İngilizce öğrenmesi üzerindeki etkileri üzerinde günümüzde hala çok az araştırma bulunmaktadır. Dolayısıyla, öğrenci merkezli öğrenme sürecinin, genel ve özellikle Tıbbi İngilizce alanında tıp eğitimi alan birinci sınıf tıp öğrencileri üzerindeki etkisini anlamak üzere aynı türden araştırma yapmak gerekmektedir.
2. Ayrıca öğrenci merkezli eğitime farklı perspektiflerden yaklaşan araştırmalar yapılması da önerilmektedir. Araştırma belirli tıp fakültelerindeki belirli sayıdaki tıp öğrencisi ile sınırlandırılmamalıdır.
3. Öğrenciler öğrenmeyle ilişkili tutumlarını sınıflara taşımaktadır ve bütün öğrencilerin gereksinimlerini karşılamak zorlayıcı bir görevdir. Tıbbi İngilizce öğrencilerinin Tıbbi İngilizce derslerinin başlangıcındaki öğrenme hazırlıklarına dayalı olarak araştırmanın yapılması gerekmektedir.
4. Öğrenim etkinliklerinin etkisini doğrudan ölçen tutum testlerinin yapılması ve öğrencilerin öğrenme tarzlarıyla ilişkilendirilmesi gerekmektedir.
5. Bu araştırmadaki öğrencilerde gelecekteki tıbbi çalışma ve eğitimlerinde öğrenci merkezli yaklaşımın etkilerini belirlemek üzere temasa geçilmeli ve incelenmelidir. Bu araştırmanın farklı bir örnek büyüklüğü ve farklı tıp fakültelerinde farklı Tıbbi İngilizce dersleriyle tekrarlanması düşünülebilir.

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