Sudan University of Science and Technology

College of Graduate Studies

College of Languages

Investigating Strategies for Understanding the Meanings of Specialist English Vocabulary in Faculty of Medicine, University of Khartoum

تقصي استراتيجيات فهم معاني مفردات اللغة الإنجليزية المتخصصة في كلية الطب، جامعة الخرطوم

Thesis Submitted to College of Languages in Fulfilments of the Requirements for the Degree of Ph.D. in English (Applied Linguistics)

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Quranic Verses

الآية

قَالَ تَعَالَىٰ:

﴿ اقْرَأْ بِاسْمِ رَبِّكَ الَّذِى خَلَقَ ۝ خَلَقَ الْإِنسَٰنَ مِنْ عَلَقٍ ۝ اقْرَأْ وَرَبُّكَ الْأَكْرَمُ ۝ الَّذِى عَلَّمَ بِالْقَلَمِ ۝ عَلَّمَ الْإِنسَٰنَ مَا لَمْ يَعْلَمْ ۝ ﴾

صدق الله العظيم

سورة العلق: الآية ١ – ٥.

Holy Quran

Dedication

This thesis is dedicated to the souls of my Parents,

&

to my beloved family members specially:

Husband....

Children....

sister Nawal....

Acknowledgements

It is a great pleasure to extend my genuine praise & grateful to my supervisor **Dr. Abdalla Yassin**, for encouraging me to complete this thesis with precise supervision. I much appreciate his help and guidance throughout the stages of the study. My sincerely thanks and respect also to my colleague **Dr. Sidig Ahmed** for his help and support during my research.

Abstract

This study aims to investigate strategies for understanding specialist meaning of medical English vocabulary. The data were collected by using four research tools basically depend on descriptive and analytical methods qualitative and quantative information. The researcher designed two questionnaires, one for the teachers and the other for the medical students. An interview was conducted by the researcher with 10 experienced teachers in English language and medical fields. Finally, a vocabulary test was done with the same medical students. The tools of the study were carried out in 2016 at Faculty of Medicine, University of Khartoum. The samples size were 30 teachers and 100 third-year medical students. The validity and reliability of the tools were confirmed before distribution. The data obtained from the tools were statistically analysed by employing the Statistical Package for social (SPSS). for frequencies distribution and Chi- square, P-value, T-test and Graphs. The data were analysed and the results obtained were tabulated and discussed. The main results of the study showed that the medical students are encountered by different difficulties in understanding medical English vocabulary, words' roots, irregular plural, words with multiple meaning, synonyms of words, and frequency use of prefixes and suffixes. 62% of the medical students mentioned that the English courses were irrelevant to medical field, also 70% of teachers stated that the English courses should be EAP for medical students. In addition to that the text books teaching materials were not available according to 57% of teachers and the time to cover English syllabus's objectives was not sufficient. Finally, the teaching staff were sufficiently aware of medical students' difficulties in understanding medical vocabulary and that the current English syllabus does not cope sufficiently with their medical English needs. The study ended in some recommendations and suggestions for further studies: Medical students should use some effective strategies to teach and learn medical English vocabulary; visual and auditory activities, in class group discussion, people lecture note, dictionaries, and team project. Moreover, medical English syllabus designers should build up a solid foundation for terminology based on medical vocabulary in English language courses. The syllabus designers should revise the English courses regularly so as to remedy medical students' weakness. Faculty of medicine should have good qualified teachers for medical students and suitable environment for teaching and learning process. Finally, further researches should be done to investigate optimal strategies for understanding specialist meaning of medical vocabulary.

Abstract

(Arabic Version)

مستخلص الدراسة

تهدف هذه الدراسة إلي تقصي الاستراتيجيات التي تساعد علي فهم معاني مفردات اللغة الطبية الانجليزية المتخصصة. وقد جمعت هذه المعلومات باستخدام أربع من أدوات البحث وذلك بالاعتماد أساساً علي الطرق الوصفية والتحليلية للبيانات الكمية والنوعية. وقام الباحث بتصميم إستبانتين إحداهما للأستاذة وأخرى للطلاب وأجريت المقابلة مع 10 من الأستاذة ذوي الخبرة التدريسية في مجالي اللغة الانجليزية والحقل الطبي وقد وضعت الباحثة اختبارا في المفردات الطبية الانجليزية لهؤلاء الطلاب. وتم تطبيق هذه الدراسة في عام 2016م في كلية الطب جامعة الخرطوم، وتضمنت عينة المبحوثين علي 30 أستاذ، و100 طالب في المستوي الثالث. وقد أثبتت درجة ثبات ومصداقية أدوات جمع المعلومات قبل توزيعها ثم تم الحصول علي المعلومات من أدوات البحث وأدخلت هذه المعلومات بغرض التحليل الإحصائي في برنامج الحزم التقنية للعلوم الاجتماعية (SPSS) لحساب التوزيع التكراري ومربع كاي وقيمة (ب) ، واختبار (ت) والرسوم البيانية . وقد وضعت نتائج هذه البيانات التي أثبتت بالتحليل الإحصائي في جداول وتمت مناقشتها.

واهم النتائج التي توصلت إليها الدراسة هي:

- إن العديد من الطلاب في كلية الطب بجامعة الخرطوم لديهم صعوبات مختلفة في فهم المفردات الطبية الإنجليزية مثل الصعوبات في أصول الكلمات الطبية وجمعها غير المنتظم والمفردة الطبية ذات المعاني المتعددة والمفردات المترادفة واستخدام سوابق ولواحق المفردة. وأشار 62% من الطلاب إلي أن منهج اللغة الإنجليزية غير متخصص في مجال الطب. وأكد 70% من الأساتذة أن منهج اللغة الإنجليزية ينبغي أن يكون متخصصا في اللغة الانجليزية الطبية وأيضاً ذكر 57% من الأساتذة أن المواد التدريسية والمراجع غير متوفرة في كلية الطب، وأيضاً قصر زمن الأستاذ و المحاضرة لا يفي بتغطية أهداف المقرر. ونجد أن أعضاء هيئة التدريس يدركون ان الطلاب لديهم صعوبات كثيرة في فهم المفردات الطبية الانجليزية وان منهج اللغة الإنجليزية لا يتناسب مع احتياجاتهم اللغوية المتخصصة في الطب.

وتمثلت توصيات ومقترحات هذه الدراسة في الآتي:

- ينبغي استخدام استراتيجيات فعالة لتدريس وتعلم المفردات الطبية الانجليزية المتخصصة كالأنشطة المرئية والمسموعة ومجموعات النقاش والمحاضرات والقواميس والعمل في مشاريع جماعية.

- على الجهات المسئولة التركيز على تعلم المصطلحات الطبية وذلك بتضمين مناهج اللغة الانجليزية للمفردات الطبية الانجليزية المتخصصة في كل المستويات ومراجعة هذه المناهج بصورة منتظمة لمعالجة نقاط الضعف التي يعاني منها طلاب كلية الطب.

- توفر الأستاذة المؤهلون لكل الطلاب وتطوير البيئة والمواد التدريسية وكل مقومات العملية التعليمية في كلية الطب. أخيراً إجراء المزيد من البحوث في تقصي امثل الإستراتيجيات لفهم معاني المفردات الطبية الإنجليزية المتخصصة.

List of abbreviations

Abbreviations	Meanings
ESP	English for Specific Purposes
EAP	English for Academic Purposes
GEL	General English Language
EFL	English Foreign Language
TTT	Teacher Taking Time
ILP	Individual Learning Profile
NRP	The National Reading Panel
OSCE	Objectives Structured Clinical Examination
OED	Oxford English Dictionary
SCANS	Secretary's Commission on Achieving Necessary Skills
IGCSE	International Certificate of Secondary Education
VLS	Vocabulary Learning Strategies
SPSS	Statistical Package for Social Sciences

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Chapter One

Introduction

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Introduction

1.1 Overview

English language has a major role in many sectors including medicine, engineering and education. The importance of English language cannot be denied or ignored since English is the most common language spoken. Today English language is the first language of medical journals and magazines, and it has also become the language of international conferences. English medical vocabulary is very necessary to medical students to provide them solid English skills foundations, also to support and improve the quality of their studies. Taking into consideration that teaching English language in Sudanese faculties of medicine is influenced by learning process at the pre-university level and their own attitude as medical students which explain why medical students had been poor in understanding medical English vocabulary.

This study aims to investigate medical students' difficulties in understanding specialist medical English vocabulary and to suggest some vocabulary strategies to help them to overcome these difficulties.

1.2 The Context of the Study

The demand for English language at faculties of medicine in the Sudan is increasing rapidly for a variety of reasons, first of all English language plays a vital role for academic courses, second, medical students need to be able to write and communicate. Also teaching them English is not only to write or communicate, but to analyze and research, which is required skill for a lot of medical studies. Hence it's a faculty requirement, to learn how to write it properly. Finally, medical English required is for all stages at most faculties any way. Every medical student need to have basic communication skills so that, they can speak English fluently to their patients and medical staff.

Many Sudanese students at the faculties of medicine face some difficulties in English language generally in grammar, vocabulary, pronunciation, reading, writing, listening, and speaking fluency, accuracy and confidence. (Iua.edu.sd/iua magazine/art.com) states that:

> *"The Sudanese learners transition from school level to more advanced level in the university is difficult. English is not used in daily situation. Arabic is the language used in everywhere. In Sudan there are general outcries of deterioration of the standard of English proficiency among teachers and even university instructors. They all commit serious lexical errors while communicating in English. The English course are supposed to gear students to be able to communicate effectively about a broad range of topics. The communication should be free of lexical, syntactical and phonological errors."*

William, H. (2010) emphasized the importance of the syllabus. The English syllabus has undergone a lot of changes. Syllabus writers should be well paid.

The methods of language teaching and the learning environment is unsuitable for learning a foreign language in the Sudan. English language in Sudan where Arabic is the native language find it difficult in using English for communication. When engaged in authentic communication situations, they often lack some of the vocabulary or language items they need to get their meaning across. As a result, they cannot keep the interaction going for extended period of time. The weakness of English language in general can be attributed to a number of factors; Lack of knowledge on the part of school graduate when they join the university, teaching methodologies, Lack of target language environment,   and the learners' motivation.

Because of this, university students continue to make basic and frustrating errors in pronunciation, spelling, morphology and syntax. These learners cannot express themselves comfortably and efficiently when dealing with academic topics or common every day topics. Lack of fundamental standard in

curriculum design, testing and oral communication skills and productive skills. The Sudanese learners of English are an outcome a curriculum which is mainly dominated by grammar. Other skills are given every little prominence. This shows a lack of balance in the curriculum.

Vocabulary is central to English language teaching because without sufficient vocabulary students cannot understand others or express their own idea. Wilkins, D. (1972. P:111-112). says that

> "… *while without grammar very little can be conveyed,*
> *without vocabulary nothing can be conveyed*".

Students often instinctively recognize the importance of vocabulary to their own language learning. As Norbert, S. N (2010 P:4) state that,

> " *learners carry around Dictionaries and not grammar*
> *book"*

. Teaching vocabulary helps students understand and communicate with others in English. Baumann, J. and Ash, G. (2003) said, Language is very difficult to put into words. Learning English language helps students master English for their purposes. Dudley, T and Jo, M. (2001. P:2) state that

> *" The study of language for specific purposes has had along*
> *and interesting history going back, some would say, as far as*
> *the Roman and Greek Empires. Since 1960, ESP has become*
> *vital and innovative activities within the teaching of English*
> *as a foreign or second language movement".*

In this context, it is important to investigate some sufficient teaching strategies in teaching medical English vocabulary to medical students at level three faculties of medicine, University of Khartoum; these strategies cope with medical studies and to overcome their difficulties in medical English vocabulary.

1.3 The Statement of the Research Problem

According to above section, medical vocabulary is a scientific field, and there are plenty of very complex medical terms that medical students' use.

Learning medical vocabulary include a selected list of appropriate vocabulary and learning their definitions. Without medical vocabulary, it could be difficult or impossible for medical students to deal with the situation in the event of a medical emergency.

Teaching English language as University requirement at faculty of medicine, University of Khartoum taught just at the first and second year, so this study investigates the main vocabularies' difficulties facing medical students. it is of an importance to focus on these difficulties that face medical students at level three for understanding medical English vocabulary. It will suggest some suitable strategies to help them to overcome such difficulties.

1.4 The Research Questions

The following questions are raised in the study:

1-What are the main difficulties that medical students may encounter by both understanding and constructing meaningful of English sentences?

2- What kind of strategies are needed for understanding specialist vocabulary?

3- To what extent does the English language syllabus at Faculty of Medicine, University of Khartoum sufficiently cope with medical English vocabulary?

4- To what extent is the teaching staff at Faculty of Medicine, University of Khartoum aware of the students' difficulties in medical English vocabulary?

1.5 The Research Hypotheses

The following hypotheses are formulated:

1-There are many difficulties which encounter medical students in specialist vocabulary in medical English such as word root, frequent use of prefixes and suffixes, word formation, pronunciation, understand and use of medical terminology.

2- There are some possible strategies which should be used for understanding medical English vocabulary such as online course, experimental learning, in class group discussion and prepare lecture notes.

3- English languages syllabus at Faculty of Medicine does not cope sufficiently with medical English vocabulary.

4-Some of the teaching staff are not sufficiently aware of the problems which face medical students in understanding medical English.

1.6 The Research Objectives

The study objectives are:

1- To explore the main difficulties which encounter medical students for understanding and analysis of medical English.

2- To investigate important strategies for understanding specialist vocabulary of medical English.

3- To evaluate and suggest some amendments in the syllabus at faculties of medicine that cope with medical English vocabulary and meet students' needs.

4- To increase the awareness of teaching staff and syllabus designers about faculties of medicine to students' difficulties in medical English vocabulary.

5- To develop the medical students' proficiency in medical English.

1.7 The Research Significance

The importance of this study is mainly based on the following:

The significance of investigating some strategies for understanding and analysis medical English vocabulary, to make medical students overcome some difficulties in medical English vocabulary which is the basis of communication used by doctors, nurses, health-care providers, medical transcriptionists, medical office assistants, medical billers and insurance claims processing. Moreover, it is useful for subject teachers, syllabus designers and policy makers because identify the various anatomical structure, diagnoses, instrument, procedures and, protocols, prescriptions and medications.

1.8 The Research Limits

The study will investigate some strategies for understanding the meaning of medical English vocabulary. The study will focus on some difficulties which face medical students in understanding and analysis medical English vocabulary. The study will focus on medical students at level- three at Faculty of Medicine, Khartoum University.

1.9 The Research Methodology

The researcher will adopt both descriptive and analytical methods to investigate some difficulties for understanding and analyzing medical English vocabulary of medical students by utilizing a range of tools for data collecting and analysis.

Population

This study will be conducted at Faculty of Medicine, Khartoum University, and medical student's level three.

Sample

The researcher will use the stratified random sampling that involves the division of a population into smaller groups known as strata, the strata are formed based on members' shared attributes or characteristics. A random sample from each stratum is taken in a number proportional to the stratum's size when compared to the population.

The Research Tools

For the collection of the data the research will use the following research tools:

1- A test and questionnaire will be designed for medical students' level three.

2- A questionnaire will be designed for subjects' teachers.

3- An interview will be conducted with some professional experts in (both English language and medicine).

4- Finally the medical English syllabus in Faculty of Medicine will be evaluated by the researcher. The researcher will check the validity and reliability of the tools before their distribution.

Chapter Two

Literature Review and Previous studies

Chapter Two
Literature Review

2.1 Introduction

This chapter intends to provide literature review on some key concepts of the study as conceptual frame work, mainly the teaching strategies that are expected to help medical students in understanding medical English vocabulary at faculty of medicine. it consists of the background of the study, definition of some vocabulary concepts such as medical terminology, addition to note about English in Sudan and at Faculty of Medicine, University of Khartoum. And previous studies will be reviewed.

2.1.1 Historical Background

University of Khartoum is a multi – campus, co – educational, public university located in Khartoum. It is the largest and oldest university in Sudan. U of K was founded as Gordon Memorial College in 1902 and established in 1956 when Sudan gained independence. Since that date, the University of Khartoum has been recognized as a top university and a high – ranked academic institution in Sudan and Africa. The initial proposal to establish a medical school was put forward by Lord Kitchner on his last visit to Sudan in 1912 after his death in June 1916 an appeal for fund raising to fulfill his wish was started on 1923. On 29th February 1924 Kitchner medical school was opened by Sir Lee Stack, then Governor-General of the Sudan and Sirdar of the Egyptian army. In September 1951 the school was linked administratively to Khartoum University College. After independence in 1956 Khartoum University College was upgraded to Khartoum University, the medical school became a Faculty of Medicine and started offering the M.B.B.S. Degree. Up to 1933 the duration of teaching program was 4 years, in 1939 after the establishment of a Faculty of Science in Gordon Memorial School the study duration for the Diploma became 6 years. In its initial phase teaching in

kitchner School was executed by expatriate staff in the Sudan Medical Services and Welcome Laboratory Staff. In 1951 after joining Khartoum University College the academic departments were established. Full time teaching staff was recruited and Sudanese staff were chosen for postgraduate studies in UK to join the staff later. Over the years the Faculty expanded to include 14 academic departments. The student's intake was 7 candidates/ year in 1924 that increased progressively; the average annual intake was 40, 150 and 200 in the period 1951- 69, 1969- 73, 1973- 1990 respectively. The annual intake now is about 350/year. The number of national teaching staff increased steadily by 1965 almost all staff were nationals. The total number of fulltime staff is now 201 supported by a large number of part-time teachers from the ministry of health.

2.1.2 Curriculum of Faculty of Medicine, University of Khartoum

The curriculum of the Faculty of Medicine, University of Khartoum, is outcome-based. While it has a discipline-based structure, innovate educational experiences have been practiced, newer methods of instruction and evaluation have been developed. Community-based learning experiences, which have been practiced since the inception of the medical school, have received more emphasis since the 1970s. The new curriculum has several features worthy of vote. It provides for the first time, discrete and structured courses and planned theoretical and practical, and clinical learning experiences in behavioural sciences, an integrated course in neuroscience communication skills, medical ethics, basic clinical skills, and emergency medicine. Development of the educational resources have include the new physical facilities project, expansion of computer-based learning and information technology facilities, The clinical skills laboratory and WHO recognition of the Education Development Centre for Health Professions. The Faculty of Medicine is now poised to use these resources in teaching and learning as well as in student's assessment and staff development.

2.1.3 Medical Students-Third Level

To pass the third year examinations and precede to fourth year the candidate must successfully pass an examination in the following courses.

a):

1. Neuroscience (301)

2. Microbiology (303) (302)

3. Immunology (308)

4. Pharmacology (312)

5. Infectious and Endemic disease (314)

6. Basic Clinical Skills (309) (310)

7. Behavioral Sciences (311)

b) And sit for examination in the following continuing courses:

1. Community Medicine (307) (306).

2. Pathology (305) (30).

Failing in five or less in courses 1 – 7 the candidate will sit for a supplementary examination.

Failing in more than (5) or failure in a supplementary examination the candidate will repeat the year.

2.1.4 Teaching Staff

One of the Faculty strength is its excellent staff quality. The faculty has a large number of teaching assistants selected through open competition to satisfy strict criteria including academic excellence in the specialty, academic achievement in the undergraduate course, personal attributes and performance reports. The teaching assistants are trained through offering scholarships locally or abroad to obtain necessary postgraduate qualification and experience.

2.1.5 The Teaching Staff Grades Include

Full time staff: Assistant Professor, Associate Professor, Professor.

The minimum requirement for an assistant professor is an MD/PhD or its equivalent. Promotion to other status include strict promotion regulation including academic experience, teaching, service and research contributions.

After accepting a "Prima facial " cares the quality of scientific contribution is assessed through a system of external assessors.(http:/med.uofk.edu/index.com)

2.2 Conceptual Framework

English language plays a vital role in higher education all over the world. There has been a worldwide growth in demand for English for Academic purposes. Dudley,T. and Jo, M. (2001, P:2)   state that

> *"The study of languages for specific purposes has had a long and interesting history going back, some would say, as far as the Roman and Greek Empires. Since 1960, ESP has become a vital and innovative activities within the Teaching of English as a foreign or second language movement. For much of its early life ESP was dominated by the Teaching of English for Academic Purposes (ESP), most of the material produced, the course descriptions written and the research carried out were in the area of (ESP)''*.

The oldest written sources of Western medicine were the Hippocratic Writings from the 4th and 5th centuries BC which covered all aspects of medicine at that time and contained numerous medical terms. This was the beginning of the Greek Era of the language of medicine, which lasted even after the Roman conquest. Since the Romans, who had no similar medical tradition they imported Greek medicine and medical tradition. During the Middle Ages a third language gained importance as many of the classical Greek medical texts were translated into Arabic. Scholars from the Arab world also made original contributions to medical literature, and a few Arabic terms found their way into western medicine. However, at the time of the Renaissance, when Greek was no longer widely understood, both Greek and Arabic works were translated into Latin and the Era of medical Latin began. Almost all important medical works were published in Latin; the medical vocabulary expanded but basically did not change. Medical Latin continued to be ordinary Latin with the admixture of numerous Greek and Latin medical

terms. Today, almost all influential medical journals are written in English, and English has become the language of international conferences. In this way the Era of Medical English resembles the Era of Medical Latin. In that, once again, medical doctors have chosen a single language for international communication. Whereas informer times new medical terms were derived from classical Greek or Latin roots, but now they are often, partly or wholly, composed of words borrowed from ordinary English. Medical terminology often use words created by using prefixes and suffixes in Latin and Ancient Greek. In medicine, their meanings, and their etymology, are informed by the language of origin.

In Sudan medical students are poorly taught and they are little more than burdening the mind of the learners with an old medical syllabus and indigestible as well as impractical information which are of no practical significance". Mohdyddi, A. (2001).

A specialist vocabulary is important to appreciate that knowing specialist vocabulary involves more than simply recognizing it. As (www.hogrefe.com) mentioned that there are difficulties uses of medical vocabulary. e. g. Medical students can understand the meaning of a word when reading or listening and yet be unable to remember the same word when speaking or writing. In addition, medical students may remember the word, but use it incorrectly. This can be a grammatical problem. Then there is the question of the sound of the word. Can medical students pronounce it? And do medical students recognize it when they hear it pronounced? For these reasons it is important that medical students practice specialist medical vocabulary so that they can learn to use it more confidently and effectively.

Medical English is a branch of English education with a specific purpose. Medical English and terminology is used in the medical, nursing, and healthcare fields to accurately describe the human body and its components in a science-based manner. The goal of teaching medical terminology is to provide students with a basic understanding of the language commonly used in healthcare occupations, including the functions, purposes of medical terms, the

spelling, pronunciation of terms, abbreviations of terms, using word roots, prefixes, suffixes, and linking vowels to demystify medical terms. Medical English terminology offers a primary source of medical information for medical students and professionals, no matter what their native language may be; it provides a quick and efficient means of communicating with colleagues and members of the same discipline. Among the types of English for specific purposes, medical terminology is one of the most difficult, because it has diverse origins. Although Latin and Greek are the most common sources, more than 10 languages also influence this terminology, which combines old and new terms that must be sounded out, spelled, remembered, and understood. Because of its combination of old and new terms, medical students and professionals are often not proficient in medical English and terminology they may find doctor-patient and inter-professional communication difficult.

2.2.1 Lexicon

The lexicon is a catalogue of words and terms that are stored in a speaker's mind. The lexicon consists of words and bound morphemes, which are parts of words that can't stand alone, like affixes. In some analyses, compound words and certain classes of idiomatic expressions and other collocations are also considered to be part of the lexicon. Dictionaries represent attempts at listing, in alphabetical order, the lexicon of a given language; usually, however, bound morphemes are not included. Lexicography, closely linked with the domain of semantics, is the science of mapping the words into an encyclopedia or a dictionary. The creation and addition of new words (into the lexicon) is called coining, and the new words are called neologisms. It is often believed that a speaker's capacity for language lies in the quantity of words stored in the lexicon. However, this is often considered a myth by linguists. The capacity for the use of language is considered by many linguists to lie primarily in the domain of grammar, and to be linked with competence, rather than with the growth of vocabulary. Even a very small lexicon is

theoretically capable of producing an infinite number of sentences. (Wikipedia.org.com).

2.2.2 Understanding Language

Language is one of those words that we use all the time about whose meaning is far less straight forward that its frequent use suggests. Attempting to define, in an exhaustive way, the nature of language is in fact extremely complex.

2.2.3 Language as System

A sensible way to try and get a satisfactory explanation of what 'language'. Means is to consult relevant reference material. The Oxford English dictionary (OED), which always radiates with a sense of confident reliability, looks like a good place to start. The OED defined language as ' the system of spoken or written communication used by a particular country, people, community, etc, typically consisting of words used within a regular grammatical and syntactic structure'.

Nunan, D. (2012) said that, what is this thing called language? He calls language ' a defining characteristic of humanity'. That is' the phenomenon that defines us as humans'. Nuana also defines language as ' a tool for communication' for achieving ends that go beyond the language itself, that is, the meanings created and exchanged via language are normally not about language (except, of course, in cases where the subject matter is language, as it is right now) but reach beyond its boundaries.

2.2.4 The Field of Language Acquisition

Colm. P. (2011, P:56) states that

> *"In many ways, the study of language acquisition stands at the center of language science, subsumes all of its areas, and thus, perhaps, supersedes all in its complexity. It entails the study of linguistic theory in order that the system and complexities of the end state of language knowledge be*

understood, so the status of their acquisition can be evaluated. This involves all areas of linguistic, in addition to phonetics: Phonology, Morphology, syntax, semantics, and Pragmatics.

2.2.5 Definition and Usage of Vocabulary

Nation, P. (1994), said that, Vocabulary is commonly defined as " all the words known and used by a particular person". Knowing a word, however, is not as simple as merely being able to recognize or use it. There are several aspects of word knowledge that are used to measure word knowledge.

A person's vocabulary is the set of words within a language that are familiar to that person. A vocabulary usually develops with age, and serves as a useful and fundamental tool for communication and acquiring knowledge. Acquiring an extensive vocabulary is one of the largest challenges in learning a second language.

2.2.6 Importance of Vocabulary

Wilkins, D. (1972). Mention that, for a long time vocabulary has been one of the important aspects of learning a new language. During the last decades, however, the vocabulary has moved from the periphery into a central position. Even quick look at the recent linguistic research.

As we are confident that vocabulary, including not just words but also their meaning, orthography, pronunciation, context and conjugation, is in the very essence of the process of learning a new language. Here are three key reasons why increasing and evolving your vocabulary is well worth the effort: Vocabulary is the key to communication. For along majority of learners, the ultimate goal of studying is to be able to communicate in a new language. Mastering vocabulary is not just important, but crucial in a foreign language environment.

2.2.7 Depth Knowledge of Vocabulary

Nation, P. (1994). Stated that, the different degrees of word knowledge imply a greater depth of knowledge, but the process is more complex than that. There are many facts to knowing a word, some of which are not hierarchical so their acquisition does not necessarily follow a liner progression suggested by degree of knowledge. Several frame works of word knowledge have been proposed to better operational this concept. One such frame work includes nine facts:

- Orthography   (written form)
- Phonology   (spoken form)
- Reference   (meaning)
- Semantics   (concept and reference)
- Register   (appropriacy of use)
- Collocation   (lexical neighbours)
- Word associations
- Syntax   (grammatical function)
- Morphology   (word parts)

2.2.8 Aspects of Vocabulary Knowledge

The concept of a word can be defined in various way, but three significant aspects teachers need to be aware of and focus on are: form, meaning, and use. According to Nation, P. (2001), said that, the form of a word involves its pronunciation (spoken), spelling (writing form), and any word parts that make up this particular items (such as a prefix, root, and suffix).

Nation, P. (2001), stated that, meaning encompasses the way that formed meaning work together, in other words the concept and what items refers to, and the associations that come to mind when people think about a specific word or expression. Use, Nation noted involves the grammatical functions of the word or phrase, collocations that normally go with it, and finally any constrains on its use, in terms of frequency, level, and so forth. Form meaning, and use, Nation, P. (2001) declared there is both a receptive and productive

dimension, so knowing these three aspects for each word or phrase actually involves 18 different types of lexical knowledge, as summarized in table 1. When teachers teach vocabulary to build students' knowledge of words and phrases, helping them learn any and all of these different components assists them in enhancing their English vocabulary knowledge. Jack, R. (1976).

Table (2.1): Knowing of A word

Aspects	Component	Receptive knowledge	Productive knowledge
Form	Spoken	What does the word sound like?	How is the word pronounced?
	Written	What does the word look like?	How is the word written and spelled?
	Word parts	What parts are recognizable in this word?	What word parts needed to express the meaning?
Meaning	Form and meaning	What meaning does this word form signal?	What word form can be used to express this meaning?
	Concepts and referents	What is included in this concept?	What items can the concept refer to?
	Associations	What other words does this make people think of?	What other words could people use instead of this one?
Use	Grammatical functions	In what patterns does the word occur?	In what patterns must people use this word?
	Collocations	What words or types of words occur with this one?	What words or types of words must people use with this one?
	Constrains on use (register, frequency)	Where, when , and how often would people expect to meet this word?	Where, When, and how often can people use this word?

Jack, R. (1976)

2.2.9 Types of Vocabulary

2.2.9.1 Reading Vocabulary

A literate person's vocabulary is all the words he or she can recognize when reading. This is generally the largest type of vocabulary simply because a reader tends to be exposed to more words by reading than by listening.

2.2.9.2 Listening Vocabulary

A person's listening vocabulary is all the words he or she can recognize when listening to speech. People may still understand words they were not exposed to before using cues such as tone, gestures, the topic of discussion and the social context of the conversation.

2.2.9.3 Speaking Vocabulary

Words are used in various forms of writing from formal essays to social media feeds. Many written words do not commonly appear in speech. Writers generally use a limited set of words when communicating: for example: -
-If there are a number of synonyms, a writer will have his own preference as to which of them to use.
-he is unlikely to use technical vocabulary relating to a subject in which he has no knowledge or interest.

2.2.9.4 Writing Vocabulary

Words are used in various forms of writing from formal essays to social media feeds. Many written words do not commonly appear in speech. Writers generally use a limited set of words when communicating: for example
-If there are a number of synonyms, writers will have his own preference as to which of them to use.
-To use technical vocabulary relating to a subject.

2.2.9.5   Focal Vocabulary

Focal vocabulary is a special set of terms and distinctions that is particularly important to a certain group: those with a particular focus of experience or activity. A lexicon, or vocabulary, is a language's dictionary: Its

set of names for things, events, and ideas. Some linguistics believe that lexicon influences people's perception of things. Jack, R. (1976).

2.2.10 The Concept of an Academic Vocabulary

The idea of an academic vocabulary has a long history in teaching English for academic or specific purposes (EAP and ESP). Variously known as sub technical vocabulary, semi technical vocabulary or specialized nontechnical lexis, the term is used to refer to items which are reasonable frequent in a wide range of academic genres but are relatively uncommon in other kinds of texts. This vocabulary is seen as a key element of essayist literacy and an academic style of writing and is considered to be more advanced than the core 2,000 – 3,000 words that typically makeup around 80% of the words Students are likely to encounter in reading English at university. Many teachers regard helping undergraduates develop control over such a specialist vocabulary as an important part of their role, and attempts have been made to assemble list of key terms to guide materials writers and help students plan their learning more efficiently. Early ESP materials, for example, sought to identify and present forms with a high frequency in scientific and technical writing and considerable effort has been devoted to investigating the vocabulary needed for academic study. This is usually based on the assumption that learners are seeking to build a repertoire of specialized academic words in addition to their existing basic or general service vocabulary, and this repertoire building is often seen as the purpose of developing university vocabulary. Consequently, vocabulary is typically seen as falling into three main groups:

a- High frequency words such as those included in general service list of the most widely useful 2,000 – word families in English, covering about 80, % of most texts.

b- An academic vocabulary of words which are reasonable frequent in academic writing and comprise some 8% - 10% of running words in academic texts.

c- A technical vocabulary which differs by subject area and cover up to 5% of texts.

First year undergraduate students are said to find an academic vocabulary (2) particularly challenging aspect of their learning. This aspect of their learning is challenging because, although technical vocabulary is central to students specialized areas, general academic vocabulary serves a largely supportive role and the words are " likely to be glossed by the content teacher". Many of these words also occur too infrequently to allow incidental leaning encouraging researchers and teachers to develop vocabulary lists for directly teaching these terms. The notion that some words occur more frequently in academic texts than in other domains is generally accepted. It also appears to correspond with EAPs distinctive approach to language teaching, based on the identification of the specific language features and communicative skills of target groups, and devoted to learner's particular subject – matter needs. Ken, H. (2007).

2.2.10.1 Academic Vocabulary

Academic vocabulary can be difficult to define. One broad definition is the vocabulary which can be used in academic contexts. The problem here though is what do we mean by 'academic contexts'? Does this mean speak contexts (e.g. lectures, seminars, presentations), written contexts (e.g. essays, articles, reports), or both? Writers on academic vocabulary tend to focus on the latter, and often overlook the former. It also depends on what subject we are talking about. The academic vocabulary necessary for writing a science laboratory report (e.g. apparatus, procedure, errors) has some differences from the academic vocabulary which might be used in social science research (e.g. survey, population, sample), though of course they would also have much in common. In general, academic vocabulary can be considered to consist of three types of vocabulary:

- general words which are acceptable for academic use;
- non-general 'academic' words;

technical words specific to an individual subject area.Ken, H. (2007).

2.2.10.1.1 Technical Vocabulary

Having a good understanding of technical vocabulary is a disciplines. Often in the fields of science, Engineering and medicine, amongst others, there will be a need to manipulate technical language with ease and fluency. In Arts, Humanities and social science disciplines, there will also be a requirement to use what may be termed' specialized vocabulary, though this will not usually be deemed to be technical.

2.2.10.1.2 Improving Knowledge of Technical Vocabulary

Using technical vocabulary can be a daunting task, and the English tutor may not necessarily be an expert in your subject area. It is reassuring to remember, however, that not even a native speaker can know all the words in his or her own language, and that technical vocabulary is generally used only by specialists in the field, who work within a particular academic community. One solution to the difficulty of using technical vocabulary is to consult some of the many on- line dictionaries and glossaries of specialized words in the English language.

2.2.10.1.3 Recognizing Technical Words

-Despite the difficult of learning and acquiring technical vocabulary, many technical words have Greek or Latin base forms, and these can be easy to recognize.

- Some technical words are the same across arrange of different languages.

- Many writes provide clues about whether a word is technical or not, for example, they may define the word in the text, write the word in bold, inverted commas or italics, or a diagram.

- Often, technical vocabulary is repeated within specialized text, indicating its importance.

-The technical use of a word can be better understood by looking up the full definition of the word, with all its uses, in a good English-dictionary.

- Some technical word are used outside the academic area with little change in meaning.

2.2.10.1.4 Semi Technical Vocabulary

Semi technical vocabulary is often used for the communication of ideas. It consists of words from the general vocabulary used with a specialist, sometimes figurative meaning. It tends to be formal in style and it has to be learned without a specific subject – context. Some semi- technical words and phrases, including commonly used in general everyday English, but in such cases their meanings are usually different from the meanings that they have in more formal texts. Al though you are unlikely to be able to write informatively about your subject area or academic field without using key technical terms, equally you will probably not be able to communicate key technical concepts effectively without another category of words: semi technical vocabulary. (https://Store. Global.com).

2.2.11 Strong Vocabulary Allows You to Develop Other Skills

Improving your vocabulary has direct, positive impact on your capacity to build up your language proficiency as a whole. Paul Nation notes: vocabulary is not end in itself. A rich vocabulary makes the skills of listening, speaking, reading, and writing easier to perform. When you working memory is not loaded with hesitation about the correct spelling, pronunciation and contextual use of the words, you can concentrate fully on higher level aspects of language such as using precise sentence structures and appropriate expressions for the type of conversation that is going on. All in all, instead of contrasting vocabulary with the rest of the language skills, it would be more useful to consider it as solid bedrock upon which to build the overall language proficiency. You must have significant vocabulary to be able to learn new words from the context in which they appear. This obviously constitutes a clear disadvantage for learners with less vocabulary, but also means that "learners who know more words are able to use those knowledge words to learn even more. Wilkins, D. (1972).

2.2.12　Second Language Vocabulary Acquisition

The effects of vocabulary size on language comprehension. The knowledge of the words deriving from the 3000 most frequent English word families and the 5000 most frequent words provides a comprehension of 95% of word use and knowledge of 5000 word families is necessary for 99.9%-word coverage. Learning vocabulary is one of the first steps in learning a second language, but a learner never finishes vocabulary acquisition. Whether in one's native language or a second language, the acquisition of new vocabulary is an ongoing process. There are many techniques that help on acquire new vocabulary. (www.jstor.org/stable.com).

2.2.13.　The role of Vocabulary Teaching

Jack, R. (1976) stated that, The role of vocabulary teaching. The role of vocabulary in the syllabus in the light of the assumptions and finding of theoretical and applied linguistics. A consideration of some of the knowledge that is assumed by lexical competence is offered as a frame of reference for determination of objectives for vocabulary teaching and for the assessment of teaching techniques designed to realize these objectives. A word of caution is in order however. The theoretical concerns of linguistics and others who study language are of concern to syllabus design in two ways. Firstly, since such disciplines have as their goal, explanation of the nature of language, understanding of how language is acquired, and description of how language is used to carry out linguistics, psycholinguistics or sociolinguistics for a more informed understanding of such questions as; what does it mean to know a word? How are words remembered? What are the social dimensions of word usage? And so on. Inevitably such information will turn out to be vastly more complex than we might intuitively have supposed, yet will be tentative and inconclusive because of the changing state of knowledge and theory in the disciplines concerned. Such information cannot be translated directly into teaching procedures.

2.2.13.1 Guidelines for Teaching Vocabulary

Graves, M. (2006) mentioned that: All learning –both personal or academic occurs within the socio-cultural environment of the home, community, and classroom. Knowledge of words is acquired incidentally, where vocabulary is developed through immersion in language activities. Craves, M. (2006) offers a framework for successful vocabulary programs that supports effective teaching and students' development of word knowledge. The instructional program includes a four-part approach to developing robust vocabularies:

(1) Providing rich and varied language experiences.

(2) teach individual words.

(3) teach word-learning strategies.

(4) Foster word consciousness.

2.2.14. Learning Vocabulary

Learning vocabulary effectively is closed bound up with a teachers' understanding and learners' perception of the difficulties of words. The difficultly of a word may result from the relations it can be seen to contract with other words, either in the native or target language, whether it is learned productively or receptively; as well as from its polysemy, these associations it creates, its pronounce ability, whether it lends itself to key –word teaching techniques and, in the case of advanced learners, from the nature of the contexts in which it is encountered. The kinds of interplay between these and other complex factors cannot be adequately explored. Instead, there will be an emphasis on early learning and on the kinds of " language – internal" difficulties resulting from the forms of words and how these might best have presented. Ronald, C. and Michael, M. (2013).

2.2.15 Vocabulary Development

Snow, C, Griffin, P. and Burns, M. (2005), mentioned that, Contents of teachers use the term academic vocabulary to refer to content –specific words. We use the term vocabulary to refer to students' understanding of oral and print

words. Vocabularies include conceptual knowledge of words that goes well beyond a simple dictionary definition. Students' vocabulary knowledge is a building process that occurs over time as they make connections to other words, learn examples and non-examples of the word and related words, and use the word accurately within the context of the sentence. Vocabulary development is an important aspect of students' academic life, because the relationship of vocabulary to overall literacy development. The larger the children's vocabularies in the primary grades, the greater their academic achievement in the upper grades. The National Reading Panel (NRP; National institute of Child Health and Human Development, 2000) analyzed scientific studies that led them to conclude that readers' vocabulary is strongly related to their understanding of text. The NRP explained that when students are taught key words before reading text, they have greater comprehension than students who do not receive such instruction. Thus, learning a new word takes place over time. As students hear and read the word in many different contexts, their understanding and use of the word will develop and increase. The following three levels to describe students' knowledge for word meanings:

● Unknown: The word is completely unfamiliar and its meaning is unknown.

● Acquainted: The word is somewhat familiar; the student has some idea of its basic meaning.

● Established: The word is very familiar; the student can immediately recognize its meaning and use the word correctly.

2.2.15.1 A comprehensive Approach to Teaching and Developing Vocabulary

A comprehensive approach consisting of the following components needs to be in place.

● Use " instructional" read-aloud events.

● Provide direct instruction in the meaning of clusters of words and individual words.

● Systematically teach students the meaning of prefixes, suffixes, and root words.

● Link spelling instruction to reading and vocabulary instruction.

● Teach the effective, sufficient, realistic use of dictionaries and other reference works.

● Teach model, and encourage the application of a word-learning strategy.

● Encourage wide reading.

● Create a keen awareness of and deep interest in language and words.

 Pikulski, J and Templeton, S. (2004).

2.2.15.2 A strategy for Assessing Vocabulary Development

Graves, M. (2006) stated that, assessing student learning is a critical component of effective teaching and achievement. Therefore, part of the teacher's literacy instructional plan needs to include the assessment of students' vocabulary development. The progress monitoring of vocabulary with the following instructional goals:

(1) to enhance vocabulary development and use.

(2) to development word-learning strategies.

(3) to build word consciousness.

2.2.15.3 Testing, Quizzing, Homework, and Grading Polices

Each institution will have its own grading policy but the instructor will most likely have flexibility in how and when to test and evaluate students. Achieving fairness and yet making sure that the students are not just memorizing but also truly understanding the concepts presented can be bewildering for an instructor. Homework should be assigned on a regular basis. Worksheets, review sections of the textbook, written reports, and Internet research projects all make great homework. Some instructors assign a poster to be designed. Grading of homework may be on a completion basis or be checked according to the instructor and/or the policy of the school. Using the homework as a review is helpful to the student. Give the students constant input and feedback. Be involved with them. Quizzes should be given no less

than once per chapter or system. They can include matching, multiple choice, fill-in-the-blank, and deconstructing terms. Combining several of these styles of questions keeps the student interested in the test. If he or she does poorly on one style of question, he or she may do well on another. Spelling tests may also be given. The instructor can dictate the terms or a list of correctly spelled or misspelled words can be used on a written test. Tests at mid-term and a final exam are valuable to evaluate how well a student has assimilated the material. The abovementioned styles of questions can be used along with a medical report to be reviewed and "translated." Keeping tabs on the level of learning that students are achieving is important, as is feedback to them. If they are not evaluated regularly, students can become frustrated or not sure of their skill level. Students like to find out how well they are doing. They may not be thrilled with the grade received, but they know where they stand. Students will look to the instructor to tell them if they are excelling or failing. Quizzes and tests are effective ways to assess them. Marsha, H. (2009).

2.2.16 Medical Terminology

Medical terminology is language that is used to accurately describe the human body and associated components conditions. Process and procedures in a sciences based manner. It is to be used in the medical and nursing fields. Suffixes are attached to the end of a word root to add meaning such as condition, disease process, or procedure. In this process of creating medical terminology. Certain rules of languages apply. These rules are part of language mechanics called linguistics. So, when a term is developed, some logical process is applied. The word root is developed to include a vowel sound following the term to add a smoothing action to the sound of the word when applying a suffix. The result is the formation of a new term with a vowel attached (word root+ vowel) called a combining form. In English, the most common vowel used in the formation of the combining form is the letter – o- , add to the word root. Prefixes do not normally require further modification to be added to a word root because the prefix normally ends in a vowel sound,

although in some cases they may assimilates slightly and an in – may change to im - or syn- to sym. Suffixes are categorized as either (1) needing the combining form, (2) not needing the combining form since they start with a vowel. Decoding the medical term is an important process in morphology. Once experience is gained in the process of forming and decoding medical terminology, the process becomes easier. One approaching involves breaking down the word by evaluating the meaning of the suffix first, then prefix, and finally the word root. This will generally produce a good result for the experienced health care professional. When in doubt, the result should be verified by a medical terminology dictionary. The process of learning any new language, such as medical terminology, is facilitated by learning basic rules. One quick online reference is a dictionary search engine. This allows one to enter a medical term into dialogue box and initiate a search. There are also online medical dictionaries to select from. Once a term is located, the response will be subdivided into several basic formats, including general usage, medicine. Law, Business, and others. Each word is broken down so the reviewer can easily see how the various components add meaning to a specific word. (Wikipedia, the free encyclopedia.2016).

2.2.16.1 The Origin of Medical Terminology and its Meaning

Understanding the importance use and history of medical terminology can seem complex and difficult to understand. Although these terms may seem intimidating, they can be deciphered and understood if you know what look for. The meaning of the word medical terminology is a system of words that are used to describe specific medical aspects and diseases. It is based on standard roots, prefixes, suffixes and combining vowel. Most medical terms is made up of Greek and Latin roots. Being able to understand these roots can make knowing the terms easier for yourself and patients to understand the meaning behind them. If you choose a profession in the medical setting you must be able to know and fully understand medical terminology. Medical words are constructed in parts to Break down the words into simpler parts. These parts are prefixes, suffixes, root words and vowels helping you to understand the

meaning behind the terms more easily. Medical terms will contain one or more root words. The root word should give you an idea of what the term pertains to. Paul, S. **(**2012**).**

2.2.16.2 The Importance of Medical Terminology

When healthcare professionals use medical terminologies that are difficult to understand when they speak in English. Well just like English, medical terminologies are also universal to the healthcare or medical industry. It's their very own language and it helps them understand completely what is happening or what has to be done to help a patient. This language is not just limited to doctors, nurses and/or medical practitioners as it is important for other workers in the healthcare industry to master it well – they may include medical billers, medical coders, medical assistants and more. Workers in the medical field who are not familiar with medical terms will be lost with their jobs and even has the potential to hurt patients. Medical terms are used to accurately describe the condition of the patient and the treatment that he needs to undergo. Without proper training and knowledge with terminology, the communication between healthcare workers may get confusing and the patient might not get the proper treatment at the end. A lot of professionals use these terms a lot (even though the condition or treatment can be explained in English) as it can somehow hide some details about the patient's condition to help the family with emotions they may experience. Proper education about medical terms can bring the following benefits:

- Standardized communication between professionals – standard terms help healthcare professionals understand patient's condition and issue and helps them decipher complex information that makes their diagnosis more accurate. Basically, it helps them answer the following questions:

Why is the patient in the hospital?

What needs to be done to help the patient?

- Easy documentation and communication – medical terms use abbreviations and terms that can be longer when translated or described in plain English. As medical practitioners deal with many patients in the day to day basis, they are required to make a lot of documentations and since medical terms are standard, those abbreviations will still be understandable by other medical practitioners.

- Avoid errors – not properly communicating or documenting medical records of a patient may get them in trouble and even bigger health risks. Medical terms help describe the medical history of a patient through medical records and these records tells other healthcare professionals details that can help them diagnose the patient more accurately and provide the right treatments. Example: A doctor that learns that a patient is under certain medications or has been through certain medical procedures before, he would have a good idea on things like if there are medicine that should not be used. Crandice, M. (2013).

2.2.16.3 Teaching Medical Word Structure and Word Parts

Medical terminology can be quite an intimidating language for students who are being introduced to it for the first time. It is the "new" language that must be mastered to communicate successfully with other health care professionals. By first laying a solid foundation, the instructor can take students through this learning process more easily. Approach this task as if constructing a building. By laying that solid foundation and building each level on top of the previous one. First of all, you might ask the students to suggest some learning methods that have been successful in the past. Allow them to tell you how they would like to begin learning word parts and word building. Ask them to relate both their life and employment experiences, as these may often help with the learning process. Begin by reviewing basic language skills go over nouns, verbs, pronouns, adverbs, and adjectives. Inform the students that many medical terms are constructed from word parts. Introduce the word parts (prefixes, suffixes, roots, and combining forms) and explain how each is used. Since students often struggle with which word part to use and when, strongly stress the rules of word building. Understanding the rules is as important as memorizing the terminology. Other suggestions for approaching word building follow.

• Go over basic study skills, especially with adult students who have been out of the learning arena for some time.

• Write the four word parts as headings on the board. Under each heading, make a list of the most common word parts in that category. Stress the definition of the word part, as well as the correct pronunciation.

• Stress the importance of learning by memorization and repetition.

• Use different colors for each word part. For example, use red for prefixes, blue for suffixes, green for word roots, and black for combining forms. Each time the student sees a color, he or she will associate that color with a particular word part.

• Demonstrate how to use all the resources found in a medical dictionary. Marsha, H. (2009).

2.2.16.4 Teaching Medical Words Using Different Formats

To keep the learning process interesting, teach using different formats. Catch the students by surprise! Do something different, something they are not accustomed to.

• Use visual images like PowerPoint™ presentations, overheads, and three-dimensional props. Often, a visual image will stick with the students more than a verbal one.

• Share real-life scenarios that you have experienced as a teacher and in the work force. Try to relate to the students by sharing similar experiences you have been involved in during procedures. Talk about any situations that were connected to a particular disease they may be studying. Students often find the material more relevant when it can be related to a real situation.

• Approach word building from as many directions as possible. Ask the students to sound out and pronounce the terms before you give them the correct pronunciation. Have the students write the definitions as they are explained.

• Stress correct spelling of the word parts and make sure the students are using the correct spelling.

• Face-to-face teaching can be coupled with online courses. This format gives the students a chance to review in-class material and to obtain the lecture when they can't attend class.

• An independent study format can allow students to learn at their own rate. Continue to lecture, but allow the students to advance through the lessons at their own individual level of ability. With this type of format, the students must end their independent study at the same time as the lectures.

• Case studies and actual medical records are a great way to expose students to terminology. Have the students find the terms within the document and break them down into their individual components.

• Once different word parts are on the way to being mastered, instruct the students to choose one root and add prefixes and suffixes to make as many different words as possible. Stress how the parts can be mixed and matched. It is the opinion of some instructors that medical terminology should be taught during the same time period. Because a different instructor will probably teach each course, this would require the instructors to work together very closely to cover the same body system at the same time. The atmosphere in which terminology is taught can also make a difference. Different seating arrangements may be more conducive to learning depending on the students' needs. However, some students may feel as if they are in the spotlight if seated in a circle or other less conventional method. A structured, yet relaxed and somewhat informal atmosphere can be very valuable. Many students are intimidated if the atmosphere is too structured and formal. Testing is almost always a source of anxiety for students. A variety of practice tests and quizzes can help the student feel confident about taking the "big" test, which counts for a grade. Depending on how often your class meets, the following suggestions for testing formats may be considered.

• Give several small quizzes throughout the unit or chapter instead of one large test.

• Give the definition and have the students create the term.

• Use case studies and ask the students to pick out the terms and divide them into their parts.

• Multiple choice and matching formats give the students a chance to pick from a group of words rather than having to come up with the correct answer on their own.

• Give just spelling tests.

• Give the students a paragraph and have them proofread it for terms and correct any that are incorrect.

• Give one large test at the end of each chapter. Marsha, H. (2009).

2.2.17 Teaching Word-Learning Strategies

For every word known by a student who is able to apply morphology and context, an additional one to three words should be understandable. William Nagy and Richard Anderson, Vocabulary Researchers Teaching students word-learning strategies—strategies such as using context and word parts to unlock the meanings of words they don't know—is tremendously important. With tens of thousands of words to learn, anything we can do to help students become more proficient independent word learners is an absolute necessity. Fortunately, we can do a lot to sharpen students' skills at learning words on their own. This, as Nagy, W and Anderson, R. (1994) suggested that, will enable students to more than double the number of words they learn. There are five ways in which we can help students become increasingly competent at learning words on their own. These are

• Using Context to Unlock the Meanings of Unknown Words.

• Using Word Parts to Unlock the Meanings of Unknown Words.

• Using the Dictionary and Related Reference Tools.

• Developing a Strategy for Dealing with Unknown Words.

• Adopting a Personal Approach to Building Their Vocabularies

Before describing instruction to build students' competence in each of these important areas, I will first describe a very powerful general model for teaching strategies, a model that underlies all of the instructional procedures.

2.2.17.1 Teaching Techniques of Vocabulary

Are such steps we follow when we teach? For example, when we want to help students learn the meaning of new vocabulary words we can use a teaching technique known as definition Clues. The process works as follows. The teacher chooses a word and work in different steps.

Step1 Give definition clue (an example of the word in a real situation)

Step2 Give the actual definition of the word.

Step3 Ask students for the correct answer after each word.

We can easier teach any topic following steps, and it will help us to be more organized and to facilitate and make funny our students' learning process.(blogspot.com).

2.2.17.2 Teaching Strategies of Vocabulary

Are the methods we use to allow learners to access the information we are teaching. For example, we could read the information to them; we could display it pictorially; we could allow them to research the information themselves; we could present it as a power point presentation. We can use our creativity so as to make every class interesting by using good strategies for teaching:

People learn in three main ways – visually - auditory - and kinesthetically.

- Visual learners learn by looking at / seeing something.

- Auditory learners learn by hearing it / being told it.

- Kinesthetic learners learn by actually doing / experiencing it.

You teaching strategies should aim to include all types of learner. (blogspot.com).

2.2.17.3 Types of Teaching Strategies of Vocabulary

- Active learning – is anything that students do in a classroom other than merely passively listening to instructors' lecture.

- Clicker use in class – clickers enable instructors to rapidly collect and summarize student responses to multiple – choice questions they ask of students in class.

- Collaborative/Cooperative learning – Are instructional approaches in which students work together in small groups to accomplish a common learning.

- Critical Thinking

Is a collection of mental activities that include the ability to intuit, clarify, reflect, connect, infer, and judge? It brings these act ivies together and enables the student to question what knowledge exists.

- Discussing Strategies

Engaging students in discussion deepens their learning and motivation by propelling them to develop their own views and hear their own voices. A good environment for interaction is the first step in encouraging students to talk.

- Experiential Learning

Is an approach to education that focuses on " learning by doing " on the participant's subjective experience? The role of the educator is to design " direct experiences " that include preparatory and reflective exercises.

- Humor in the Classroom

Using humor in the classroom can enhance student learning by improving understanding relation. Now if we compare teaching techniques with teaching strategies, the difference would be that teaching techniques are the steps we use in order to teach our students in an organized way; moreover, It would help us to order better our classes, while teaching strategies are methods we use to teach in order to facilitate our students' learning and also it helps us to teach in a more creative way. Cashin, W. (1990).

- Lecture

Cashin, W. (1990. P: 60-61) states that

> *"For many years, the lecture methods were the mostly widely use instructional strategy in college classrooms. Nearly 80% of all U.S. college classrooms in the late 1970s reported using some form of the lecture methods to teach students. Although the usefulness of other teaching strategies is being widely examined today, the lecture still remains an important way to communicate information.*

The following recommendations can help make the
lecture approach more effective

- Fit the lecture to the audience.

-Focus your topic-remember you cannot cover everything in one lecture.

-Prepare an outline that includes 5-9 major points you want to cover in one lecture

-organize your points for clarity.

-Select appropriate examples or illustrations.

-Present more than one side of an issue and be sensitive to other perspectives.

-Repeat points when necessary.

-Be aware of your audience-notice their feedback".

- Dictionary

The main source of The Free Dictionary's general English dictionary is Houghton Mifflin's premier dictionary, the American Heritage Dictionary of the English Language, Fourth Edition. This authoritative work is the largest of the American Heritage® dictionaries and contains over 200,000 boldface terms and more than 33,000 written examples. The Fourth Edition also incorporates more than 10,000 new words. Containing 260,000 entries, the general dictionary is augmented with Collins English Dictionary – Complete and Unabridged, and is enhanced by 30,000 illustrations, an audio pronunciation feature, etymologies, abbreviations, biographical entries, and more. Definitions are accompanied by usage examples from classic works of literature, courtesy of The Free Library. Additionally, translations to Spanish, French, German, and Italian are provided by HarperCollins and feature contemporary vocabulary and expressions—including everyday terms.

-Medical Dictionary

The main sources of The Free Dictionary's Medical dictionary are The American Heritage Stedman's Medical Dictionary, Second Edition and Dorland's Medical Dictionary for Health Care Consumers, which provide authoritative descriptions of medical conditions, medications, anatomical terms, noted medical personalities and much more. The American Heritage®

Stedman's Medical Dictionary is ideal for both medical professionals and anyone who wants to keep up with the burgeoning array of terminology found in today's medical news. By avoiding jargon, the dictionary offers concise and easily accessible information for users searching for descriptions of over-the-counter or prescription medications, medical abbreviations, test procedures, medical research topics, or illnesses. Over 45,000 entries from all areas of medicine and healthcare are included. Dorland's Medical Dictionary for Health Care Consumers is based on the content of Dorland's Illustrated Medical Dictionary, which has been the premier dictionary for health care professionals for over 100 years. Created especially with the health care consumer in mind, Dorland's contains approximately 40,000 entries and more than 350 illustrations and provides authoritative, concise definitions for a wide range of terms used in the health sciences, including those related to anatomy, physiology, diseases, drugs, tests and procedures, and much, much more.

The Medical dictionary also draws from The Gale Encyclopedia of Medicine, Second Edition, which provides information on nearly 1,700 common medical disorders, tests, and treatments, and bridges the gap between basic consumer resources and highly technical professional materials. Additional source materials include Mosby's Dental Dictionary, Second Edition, a compilation of 2,100 dentistry-related definitions; Mosby's Dictionary of Complementary and Alternative Medicine, which catalogs terms used in non-conventional medical and healing practices; and Saunders Comprehensive Veterinary Dictionary, Third Edition, which includes information on large and small animals and features more than 65,000 entries and over 1,000 new terms. Please note that this information is not intended to be used in place of a visit, consultation, or advice of a medical professional

-Textbooks

A textbook is a book used for the study of a subject. People use a text book to learn facts and methods about a certain subject. Textbooks sometimes have questions to test the knowledge and understanding of the learner. Sometimes,

especially at university, students have to buy the textbook they need themselves or borrow them from library.

Most textbooks are only published in printed format. However, some are now available online as electronic books. Brain, T. (1998).

Multi-media Materials

Materials which make use of a number of different media. Often they are available on a CD-Room which makes use of print, graphic, Video and sound. Usually such materials are in interactive and enable the learner to receive feedback on the written or spoken language which they produce. Brain, T. (1998).

-Materials Adaptation

Making changes to materials in order to improve students to make them more suitable for a particular type of learners. Adaptation can include reducing, adding, omitting, modifying and supplementing. Most teachers adapt materials very time they use a textbook in order to maximize the value of the book for their particular learners. Brain, T. (1998).

-Teaching Online Classes

Are a fairly new concept. Some instructors have not had any experience with this form of teaching. There are definite advantages and disadvantages to online classes. One of the obvious advantages is to make the course accessible to students who might otherwise be unable to attend a regular class. In addition, the students can work on the course at their own convenience. The disadvantages are lack of test security, lack of personal connections, and the inability to control the level of study. These can be overcome by using the technology available. Unfortunately, the instructor can never know whether the student is getting more "help" than they should. It is important for the instructor of a distance learning course to be actively involved with the students. Having regular chat sessions, emailing feedback, and offering assistance to those who ask for it are ways to stay actively involved. Teaching correct pronunciation is of particular concern when teaching an online course. The software should have audio so that the student can hear the words

pronounced. Encourage the students to say the words out loud regularly. You may want to have the students send a tape or other media with examples of them pronouncing the words. Keep up with the newest technology available. Network with other seasoned instructors of online courses. Connect with publishers to see if they have materials that would adapt well to distance learning classes. Keep in touch with the students! Don't ever let them feel they are out in cyberspace alone. Marsha, H. (2009).

- Using Presentation Software (power point)

Slide presentation software is becoming increasingly more available. Most textbooks will now come with these presentations already created for the instructor. These materials are great ways of showing new information to the students. They allow information to be seen as well as heard, and it will reinforce the information that the instructor is trying to get across. All instructors will find their own comfort level with this software. Some will be very comfortable and will want to create their own presentations. Others will be new to the technology and will tend to rely more on prepared material. Either way works if the instructor uses it efficiently. For those instructors that would like to create their own presentations, there are some guidelines that should be kept in mind. For those that are new to creating their own slides, there are some pitfalls that are easily fallen into. The first thing to watch for is including too much information on a slide. There is a general rule that states that you should not have more than seven words on a line and no more than seven lines on a page. This will help not to overwhelm the student when looking at the slide. The information also becomes very difficult to read when there are too many lines on a slide. The next guideline that should be kept in mind is to keep the slides simple. Do not go overboard with pictures and sound effects. They are fun but only in moderation. Too much will become distracting to the students. On the same note, it is important to keep the presentations interesting. It is possible to have too little on the slides. Give them some motion and pictures to draw their attention to the information being presented. In particular, when teaching medical terminology, pictures and diagrams can

really help to create a connection for the students. One last note to keep in mind is that the presentation should be unified. Keep the same background or theme throughout. Be careful not to change every slide. The best slide shows will have smooth transitions throughout. Once you have your presentation, whether you created it yourself or are using one from a publisher, how you present it becomes key. Slide presentations can be very boring if not used correctly. They are meant to interactive. Too many believe that all they need to do is stand there and read the slides, but that will have your students asleep in no time. The best instructors will understand that you must work with the presentation, and even have the students work with the material to create a learning environment. Marsha, H. (2009).

- Group Activity

Most students, especially the introverted ones, benefit by taking part in group activities. Let your imagination and creativity guide you. There are endless possibilities. Suggestions for group activities follow.

• Of course, flash cards containing the different word parts are always a great way to facilitate word building. Students can use the cards for mix and match exercises to construct as many words as possible.

• Break the class up into groups and set a time limit. Have each group use the same word parts and build the longest word they can come up with. Offer bonus points to the group with the largest word. • Use worksheets with one-word root on them and have the students build as many words as possible by adding prefixes and suffixes. • Using the class as a whole, write a short root on the board and have the students build a long word, maybe even one that stretches all the way across the board. Stress to the students how they can define even the longest word by breaking it down and defining each part. • Divide the class into groups and give each group a list of terms. Have the students dissect the terms into prefixes, suffixes, roots, and combining forms and define each part. Allow the students to make this activity a group effort. • Break down words and construct a list of prefixes, suffixes, and roots and create new words from the lists without repeating the original terms. Activities

are a great way to stimulate the students and to keep word building from becoming routine and boring. Marsha, H. (2009).

2.3 Review of Related Previous Studies on Medical Vocabulary Teaching Strategies

The second part of chapter two showed some previous studies by non Sudanese writers, in addition to other previous studies by Sudanese researchers in the area of vocabulary teaching strategies are drawn in this part.

There are Some studies by non Sudanese writers

- The first study in teaching English language strategies for medical vocabulary was carried out in Taiwan as study of Perceptions of English needs in medical context, English was a required course for all college students. Respondents included 349 medical students and 20 faculties at Chung shan Medical colleges there. Survey information included respondent's opinions on the following: the importance of English language use in students' studies and their future careers, basic English skills needed in a freshman English course and Suggestions for development of an English language curriculum. Results showed that English was perceived as important for students' academic studies and their work. Students wanted a basic English language course at the freshmen level, naming listening as the most important skill to improve students and faculty desired more than one year of English language study. (English for specific purposes, 1999).

According to above study there are many medical knowledge parts are need to EAP in faculties of medicine to enhance medical vocabulary through these means as study medical English as a courses refreshment in first year and in advance stages based on medical language skills demands.

- The second study was in Learning Strategies of English Medical Terminologies in The Students of Medicine

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 kinds 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. Participants in the current study were 46 students of medicine from two second-year classes at Kashan University of Medical Sciences, Iran. The test for evaluating the subjects' proficiency level in the current study was the Medical Terminology mid-term exam administered by English teacher in the faculty of medicine. This is a curriculum-specific achievement test, rather than a general proficiency test. There were 50 questions in total in the test. The instrument employed for collecting data on strategy is the medical terminology learning strategies questionnaire developed by the researcher. 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 results of this study indicated that students in general prefer 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. Implications of these and other findings are discussed and suggestions are made regarding the teaching of learning strategies in medical terminology courses. Jafar, A. **(**2005**)**.

This study focus on important part of learning medical vocabulary depend on medical students therefore, they prefer to use writing repetition, verbal repetition, and bilingual dictionary strategies, but those are different of the current research because the most of medical students prefer audio visuals, group discussion to learn medical vocabulary. Also this study agree with this current research in the term of the students most proficient in medical terminology used various kinds of strategies.

-Another study was held in Teaching communication skills to medical students, a challenge in the curriculum? It showed the following things:

As communication skills become more and more important in medical practice, the new medical curriculum at Ghen University (1999) implemented a

communication curriculum. A communication continuum during the whole curriculum seems to be worthwhile. Students with specific communicative problems are detected early, remediation is provided. Rehearsal every year seems to lead to better acquisition. The most positive point is that communication is embedded in global patient- student-and community-oriented curriculum and that communication skills are seen as core elements of good doctoring. Communication training or experiences in 'real life' settings are provided every year of the medical curriculum. The training starts with simple basic skills but gradually slips into medical communication or consultation training and results in communication in different contextual situations or with special groups of patients. Rehearsal is important and seen as inevitable. Poorly performing students get extra training. Several didactical methods are used: the skills are demonstrated by means of videotapes and paper cases of patient stories. Skills are trained in small groups (10-15 students), with focus on role – playing with colleague students or simulated patients (SP). Videotapes of real consultations give an idea of the performance of each student. Every year the students are assessed by means of an OSCE (objectives structured clinical examination). After 6 years of experience with the new curriculum, several remarks and questions need to be answer. Small group training gives a huge workload and with different trainers' discrepancies between groups can appear. Choosing the most suitable trainer for communication skills is not easy; several options are available: specialists in communication like psychologists with interest in medical practice, medical specialists for communication topics concerning medical problems within their domain. As the most important didactical approach lies in practising the skills, the selection and training of simulated patients remains a challenge. Myriam, D. and Jan, M. (2005)

The third study discussed the problem of teaching communication skills to medical students according to their curriculum, this study gives the main difficulties that encounter medical students in current study, because the most of teachers and students in this area are stated that communication skills are very related to curriculum issue which doesn't cope with medical students'

needs.

- Analysis of student's errors in English for medical purposes. The aim of the study was to collect and analyze students' errors as markers that would point to the areas of English where additional teaching and instruction is needed in order to be able to participate in the course of medical English. The study was carried out in 2009 at the Faculty of Medicine in Nis and include 200 second – year medical students. It relies on data obtained from grammar- based placement test and from conversations with students. The main results showed that: question deal with the use of nouns. (33.6%) of students had at least one wrong answer considering the irregular plural. An even greater percentage of students (38.5%) made mistakes in noun- verb agreement with irregular countable nouns (such as people and news). As for derivations, 49.9% of students provided correct forms. However, it is interesting to note that the most common problem here was spelling. As much as 82v students (42.4%) had at least one spelling error in their answers. Zorica, A. (2010).

This study agree with the current study that showed medical students have difficulties in writing ways that included spelling mistakes, grammar formations, abbreviations and collocations.

- Mapping as a learning strategy in health professions education: A critical analysis: is a means of representing knowledge in a visual network and is becoming more commonly used as a learning strategy in health professions education: a learning strategy in medical education. The assumption driving the development and use of concept mapping is that it supports and furthers meaningful. The authors conducted a critical analysis of recent literature on the use of concept mapping as a learning strategy in the area of health professions education. Among the 65 studies identified, 63% were classified as empirical work, the majority of them (76%) of which used pre-experimental designs. Only 24% of empirical studies assessed the impact of mapping on meaningful learning. Results of the analysis do not support the hypothesis that mapping per se further and supports meaningful learning, memorization or factual recall. When documented improvements in learning were found, they often occurred

when mapping was used in concert with other strategies, such as collaborative learning or instructor modeling, scaffolding and feedback. Beatrice, P., Meredith, E, Philipe, V. and Bemard, C. (2012).

The above study proved that mapping is sufficient and effective learning strategy therefore agree with this study which states that audiovisual means and online course are great to improve medical students' vocabulary.

On the Other Hand, there were Some Previous Researches in Sudan in Vocabulary Part.

One of this study by Nawal, Mousa (2016), Effects of vocabulary knowledge on speaking performance among Sudanese university undergraduate students. p.h.D. Sudan University of Science and Technology, Khartoum.

This study attempts to know the fact of being deficient in second language vocabulary has been a common complaint or a problem for university per year students across the world where English is learnt and taught as a second or foreign language. In this study experimental methods will be adopted. The proposed experiment will be conducted in Sudanese university. Study will use multiple tests, measures, or tasks in assessing vocabulary knowledge and speaking performance. Results of the study revealed that the learners with higher and stronger breadth of vocabulary knowledge performed better in speaking tests. Overall, the results indicated that learners need to have a good knowledge of words along with adequate additional vocabulary to comprehend and speak EL efficiently.

The above study stated that speaking skill is the most problems encountered medical students' performance, vocabulary knowledge has a vital role to improve speaking skill, that agree to the current study.

Fatah, E. (2007). ESP learners' Needs: A case study of Medicine students at some Sudanese Universities, M. A, Sudan University of science and Technology, Khartoum:

This study investigates learners' ESP needs at some Sudanese universities. In particularly the study will investigate these needs in the Faculties of Medicine.

The data were collected using questionnaire, the collected data were analyzed and discussed. Results showed that: The most needed English subject is listening skill. And the students in different levels do not have the same needs and they indicate that they need English for professional purposes.

Medical students are very need to listening skill, therefore they need it in several ways of communication in their careers also they need different levels of medical English in first year and in advance levels, that which stated by the current study.

Egbal, A. (2014). An Investigation into English specialized vocabulary learning strategies for university students in Sudan. P h.D. Sudan University of science and technology. Khartoum:

This study attempts to Investigate some useful strategies in learning specialized vocabulary. It is to suggest effective strategies which could help students in learning specialized vocabulary satisfactorily and discover the difficulties that face university students in learning specialized vocabulary.

The method of this research is descriptive, analytical and evaluative. The researcher will describe the collected data and then analyze them by using four instruments) SPSS, frequency distribution, median, and Chi squire test). The tools were: Teachers' questionnaire, Students' questionnaire and Interview with teachers and syllabus designers. The main results showed that:

1- There were insufficient practices in vocabulary learning strategies in English language syllabuses.

2- Students showed an increasing awareness of the need to select a suitable vocabulary learning strategies.

3- There were a lot of difficulties facing students in learning specialized English vocabulary, such as communicate with foreigners who share the same field of study work as them. Students have not had right English learning strategies or a good motivation in learning specialized vocabulary. Also, specialist teaching materials that students learn are very poor.

This study point out some results that enforced the current study through medical students used unsuitable learning strategies towards medical syllabus

and communication skill the main difficulties that medical students have therefore, poor vocabulary use Arabic language and using quick and easy engine for searching.

Mahjob, A. (2016). Effects of multimedia- based materials on teaching writing at university level. A case study of university of medical sciences and technology(UMST), Khartoum. Ph.D. Sudan University of science and technology. Khartoum:

This study investigated the multimedia- based materials in terms of their impact on teaching writing skills to university EFL students. In particularly, the consequences that these materials could have on the target population were closely considered. The methodology of this research combines qualitative and quantitative methods. The data collection methods involved two questionnaires and an interview. The findings of the study showed that multimedia-based materials assisted the students to developed their ability to write appropriate texts. It also helped both teachers and students with the time and effort experienced in the writing tasks. The findings also displayed that university English language teachers did not effectively use multimedia-based materials to teach English as a university requirement.

The above study explained important issues about the optimal teaching and learning strategies that should focus on in teachers' parts to help medical students to overcome writing difficulties which is common among them, that agree with the current study especially in vocabulary test part which medical students encountered many difficulties in writing skill, spelling, grammar., abbreviations and using nouns and verb to build up correct sentences.

2.4 Summary of the Chapter

To sum up, optimal teaching and learning strategies for understanding the medical English vocabulary, that mentioned above and discussed by many researchers, are provided how to enhance these strategies to for extent in professional field, especially in medical terminologies, using effective strategies like audiovisual and group discussion are complementary in teaching and learning medical English vocabulary.

Chapter Three

Research Methodology

Chapter Three

Methodology

3.1 Introduction

This chapter provides the description of the study methodology. It mainly focused on the population, materials and methods, and procedures.

The statistical analysis of this study basically depend on descriptive and analytical methods, qualitative and quantative information that is obtaining in the investigating strategies for understanding the meaning of specialist medical English vocabulary. It considered qualitative data because the information of an interview with both professional experts in English language and medical field can't turn to numerical data. Also it considered quantative because most of data collected teachers', students' questionnaires and vocabulary test will be turned to into numerical data before being analyzed.

3. 2 Study Population

The population of this study divided of three groups. The first group consists of both teachers in English language as university requirement and Medical teachers from different departments at faculty of medicine, university of Khartoum. (See table 3.1).

The second group is composed of medical students' level three who are currently completing all English language courses as a university requirement at faculty of medicine, University of Khartoum. (See Table 3.2).

The third group includes some professional experts in both fields of English language and medicine at Faculty of Medicine, University of Khartoum. (See Table 3.1).

The researcher chooses faculty of medicine, University of Khartoum who participated in the study because it is an old university and the first one that was established in Sudan, and its teaching system hence every syllabus was depend on English language. Faculty of Medicine, University of Khartoum

includes eighteen departments and it has a large number of teachers who represent the first group of the study population.

Faculty of Medicine, University of Khartoum is chosen for the second group (sample of students) because it includes a large number of students and they are the most need to specialize in EAP due all medical students' courses in English language from establishing the faculty up – to now.

The third group represent in the interview with some professionals' experts in field of English language and Medical that are chosen in this study because they are due to responsible for teaching and designing the syllabuses for medical students. To investigate some difficulties that face medical students in understanding medical English vocabulary and also to know how the contents of syllabus is cope with medical students' need, and to suggest some suitable strategies to help them to develop their medical English vocabulary.

3.3 Sampling Techniques and Sizes

The stratified random sampling was used to draw a sample from the population of this study consist of 30 teachers, 22 teachers who teach medical courses. And 8 teachers who teach English language as university requirement at Faculty of medicine, University of Khartoum. The simple random sampling was selected from the population which represent 100 students at level three, at Faculty of Medicine, University of Khartoum, represent the students' sample of this study, and also the vocabulary test is conducted with the same medical students, level three at Faculty of Medicine, University of Khartoum. It's considering important part of tools of data collection. The purposive sample was used to the sample of the depth interview and the sample size was 10 of professional experts in English language and Medical fields. The table below shows the three groups of the sample of the study.

Table (3.1): Sample of Teachers and Experienced Teachers in Teaching at Faculty of Medicine

Items	Departments	Sample Size of Teachers	Sample Size of Experienced Teachers
Faculty of Medicine	Community medicine	2	1
	Physiology	2	2
	Biochemistry	2	1
	Medicine	3	
	Obstetrics	3	2
	Paediaration	5	2
	Surgery	3	
	Orthopaedics	4	
Faculty of Arts	English language	8	2
Total		**30**	**10**

Table (3.1), shows that most of the teachers who participated in this study work at Faculty of Medicine, university of Khartoum, because they are a large number of teachers and they are teaching all medical English courses in English language. Also the table shows their faculties, departments and samples sizes.

Table (3.2): Sample of Medical Students at Faculty of Medicine, University of Khartoum

Subjects	Level	Number of students	Sample size	Percent	Statistical analysis used
Questionnaire	Three	400	100	25%	Frequency distribution and chi square
Vocabulary Test	Three	400	100	25%	T – test

The table above shows the part of medical students who participated in this study through questionnaire and vocabulary test and their level, number of students, sample size and statistical analysis used.

3.4 Data Collection and Analysis

Two types of data were collected.

3.4.1 Primary Data

In this study there were four tools were used. Two of these tools are questionnaires for teachers and medical students at faculty of medicine, University of Khartoum, the data were collected and programming to analysis through Statistical Packages for Social Sciences (SPSS) was used to analyze data. The first questionnaire for teachers of English language and medical field. The second questionnaire is designed for medical students, level three, at Faculty of medicine, University of Khartoum who are studied English language as university requirements. The third tool is depth an interview for some professional's experts in teaching English language and Medical courses. The data of depth interview were analyzed linguistically as qualitative data and the results will be discussed and combined with the results of teachers' questionnaire to enforce each other's. The last tool is a vocabulary test was formulated for medical students according to their previous courses of English language and medical that medical students had taken. A test contained six sections to evaluate the level of understanding medical vocabulary, after collection the exam, researcher herself checked it, the test and their scores listed and manipulated by statistical methods through t-test that used to determine there is deference mean from test value.

3.4.1.1 Teachers' Questionnaire

This questionnaire is divided into seven parts. (A) The first part includes personal information about the teachers (An academic qualification, nationality, and their years of experience in teaching. The second part consist of hypothesis from one up to seven, that includes

(B) There are common difficulties that encountered medical students for understanding medical English vocabulary.

(C) The main factors lead to weakness of medical students in medical English vocabulary.

(D) Faculty of medicine, University of Khartoum has a vital role to increase abilities of medical students to study English vocabulary in proper ways.

(E) To improve the subject's knowledge, the teacher should be careful of these rules.

 (F) The most effective strategies that used by teachers for enhancing medical English vocabulary.

(G) Assessment methods used for medical students' vocabulary.

These questions are about teachers' view in teaching strategies that can help medical students for understanding medical English vocabulary; also they can point some difficulties that encountered medical students for understanding medical English vocabulary. Finally the teachers are explain their opinions about the syllabus taught to medical students and also they are indicate to essential principles to improve medical students' abilities for understanding medical English vocabulary.

In the first statement, 1 respondent will choose the answer put a tick (√). Statements, 3, 4, 5 and 7, the researcher will choose their answers from these options: first strongly agree, agree, neutral, disagree, and strongly disagree. In the third statement 2, teachers' answers   will choose from this option (put in order i-e, 1-2-3-4 up to 10). In the fourth statement 6, the respondents' answer will choose from options: very effective, effective, to some effective, not effective, and not all effective.

Table No (3.3): Statements and Variables Measure of Teachers' Questionnaire

Statements	Variables Measure
Statement 1	Personal information
Statement 2	Points some difficulties that face medical students for understanding medical English vocabulary
Statement 3	Some reasons lead to weakness in English language among medical students
Statement 4	The role of Faculty of Medicine to develop medical students in medical English language
Statement 5	The role of teacher to improve medical English vocabulary.
Statement 6	Some effective strategies used by teachers for enhancing medical English vocabulary.
Statement 7	Assessment methods used for medical students' vocabulary

3.4.1.2 Students' Questionnaire

The student's questionnaire is designed to collect data from medical students' third-level of Faculty of medicine, University of Khartoum. This questionnaire is consists of seven parts: part one includes personal information of medical students (sex, age, living type, certificate type, English language level, and duties per week. Part two students will choose one appropriate option from the five options (strongly agree, agree, neutral, disagree, and strongly disagree) to answer each question, this part shows some factors that can help medical students to learn medical English vocabulary. Part three explain medical students' needs in particular medical English vocabulary to build up their solid foundation in English language skills. Part four is concerns about some difficulties may encountered medical students in medical English vocabulary, the formulation of these question is put in order these difficulties from 1 up to 10. Part five is asks medical students to put in order from 1 up to 4 the purposes of using medical English vocabulary in medical procedures. Part six is focus on medical students' opinions towards English syllabus as a

university requirements and their answer will be yes or no. The last part is investigating some effective teaching and learning strategies in medical English vocabulary, the medical students will choose one appropriate option from the five options: (very effective, effective, to some effective, not effective, and not at all effective).

Table No (3.4): Statements and Variables Measure of Medical Students' Questionnaire

Statements	Variables Measure
Statement 1	Personal information.
Statement 2	Factors help for learning medical English vocabulary.
Statement 3	Some difficulties face medical students for understanding medical English vocabulary.
Statement 4	The purposes of using medical English vocabulary in medical procedures.
Statement 5	English language skills that medical students need to develop learning medical English vocabulary.
Statement 6	Medical students' opinions towards English syllabus.
Statement 7	The main effective teaching strategies for understanding medical English vocabulary.

3.4. 1.3 An interview

An interview was designed and conducted with professional's experts of both fields English language and medical, at Faculty of medicine, University of Khartoum.

The interview is divides into four parts. Part one requires personal information and it aims at collecting data, including academic qualifications, departments, and teachers' experienced. Part two, includes five questions about some difficulties that may lead to deterioration of medical English vocabulary. Part three is composed of four questions about kinds of some effective teaching strategies used in teaching medical English vocabulary. Part four; explain

teachers' view towards evaluation the specific English syllabus which are devoted to learning specialized medical English.

Table No (3.5): Questions and Variables Measure of an Interview

Questions	Variable Measure
Question one	Personal information of the experienced teachers of English language and Medical vocabulary.
Question 2 up to 6	The main difficulties may face medical students for understanding medical English vocabulary.
Question 7and 8	To what extent subject teachers aware of medical students' needs in medical English syllabus.
Question 9 up to 12	Some effective teaching and learning strategies that used for teaching medical English vocabulary.

3.4.1.4 Vocabulary Test of Medical English

The vocabulary test was designed and carried out with medical students, level three, Faculty of medicine. University of Khartoum, this test of medical English vocabulary formulated to measure out some difficulties that encountered medical students for understanding medical English vocabulary. This test divided into six questions each one measured aspect of medical English vocabulary knowledge as follows:

Question one is concerns of multi different meaning of words (pain quality). Question two describes medical terms of body's organ and some diseases can attack these organs. (physiology). Question three presented medical students' knowledge of some symptoms and their definitions. This question based on different meaning of words according to words roots and the similarities between these words in homonyms of homophone and homograph especially at suffixes and prefixes. Question four included the collocations of some combination of general medical words that two or more words that often go together. Question five concerned of the structure of correct grammar sentences that often useful in medical procedures and writing medical reports. Finally

question six has especial conventions of writing (namely, using alphabet standardised system of spelling and a set of punctuation marks and abbreviations), the vocabulary and the grammatical structure are using essentially for speaking and writing. It's considered important part of tools of data collection. The analysis framework of this test basically depends on descriptive analysis of data collection and turns to numerical statistical framework.

Table (3.6): Question and Variables Measure of Medical English Vocabulary Test

Question number	Variables Measure
Question 1	Match these words for types of pain with their descriptions.
Question 2	Match the conditions (1-8)with the organs affected (a-h), using medical knowledge.
Question 3	Match the symptoms (1-5)to the questions (a-e), using your medical knowledge.
Question 4	Make word combinations using a word from each box. Two words can be used twice.
Question 5	Complete the sentences with the correct grammatical form of (carry out).
Question 6	Write which hospital departments would be most appropriate for the following patients?

3.4.2 Secondary Data

Secondary data were collected from formal documents, scientific research, published and thesis, internet, books and magazines.

3.5 Statistical Reliability and Validity of Teachers and Students Questionnaires

3.5.1 Teachers' questionnaire

Reliability and validity test:

The values of validity (0.84) and reliability (0.92) meaning that the phases in study are more consistency relating to the hypothesis of the study indicate that a questionnaire is characterized by high validity and reliability to achieve the purposes of the study and makes a statistical analysis fit and acceptable.

Test	Reliability	Validity	Interpretation
Value	0.84	0.92	Very effective

3.5.2 Students' Questionnaire

The values of validity (0.79) and reliability (0.89) meaning that the phases in study are more consistency relating to the hypothesis of the study indicate that a questionnaire is characterized by high validity and reliability to achieve the purposes of the study and makes a statistical analysis fit and acceptable

Test	Validity	Reliability	Meaning
Value	0.79	0.89	Very effective

3.6 Summary of the Chapter

This chapter has provided description of the research methodology of this study. First explained description, techniques and analytical used taking into consideration both quantive and qualitative data. Secondly, the chapter described the population, sample techniques and sample size of the study. Then it described four data tools used for collecting information. Finally, the reliability and validity of the tools were confirmed.

Chapter Four

Analysis, Results and discussions

Chapter Four
Analysis, Results and Discussion

4.1 Introduction

According to what has been described in the literature framework and after enter the data for the purpose of statistical analysis, using the questionnaire tool to collection data, and to investigation the study led the requested purpose by checking the hypotheses of the study, some statistical methods are used which are as follows:

1- Frequency distribution.
2- Graphs and Charts.
3- Percentage.
4- Median for the respondent's trends.
5- Chi-square test.
6- P-value.
7- T-test.

To obtain the results are characterized by a high accuracy as much as possible, it was use the **SPSS** (Statistical Package for Social Sciences) technique.

4.2 Data Analysis

The four tools were distributed to the target groups (Teachers and medical students at Faculty of Medicine, University of Khartoum), to collect and analysis the data necessary for the study. Teachers' questionnaire was handed to both medical and English language teachers by the researcher. In addition to students' questionnaire and medical English vocabulary test were distributed to medical students by the researcher herself. The next step the data were collected and programming to analysis through program called statistical packages for social sciences (SPSS) was used to analyze data, descriptive statistics to describe frequency distribution, graphs and charts, percentage,

median for the respondent's trends, (chi-square), P-value and T-test, tests are used to determine correlations between the variables.

The data of depth interview were analyzed linguistically as qualitative data and the results will discuss and combined to teachers' questionnaire results to enforce each other's.

4.2.1 Testing the Validity of the Study Hypotheses

To answer the questions of the study and verification of hypotheses, median was calculated for each phrase of the questionnaire, which show views of the study sample, where it was given class (5) as a weight for each answer "Strongly agree", and class (4) as a weight for each answer "agree " and class (3) as a weight for each answer "neutral" and class (2) as a weight for each answer "disagree", and class (1) as a weight for each answer "strongly Disagree". to find out the direction of the responses, firstly making sure that the ferry statistically significant through the Sig value. According to the requirements of statistical analysis is to convert nominal variables to the amount of variables, as it will use chi-square test to determine significance of differences in the respondents answers to the hypothesis phrases.

4.3 Teachers' questionnaire

Table (4.1): Reliability and Validity

Test	Reliability	Validity	Interpretation
Value	0.84	0.92	Very effective

The values of reliability (0.84) and validity (0.92) meaning that the phases in study are more consistency relating to the hypothesis of the study indicate that a questionnaire is characterized by high validity and reliability to achieve the purposes of the study and makes a statistical analysis fit and acceptable.

Table (4.2): Academic Qualifications of Teachers

Qualifications	Frequencies	Percentage %
Bachelor degree	5	17
Master degree	9	30
Ph.D.	16	53
Total	**30**	**100**

From above Table (4.2) that obtained the qualifications of respondents:

Individuals have a bachelor degree with percentage 17%, 5 individuals have master degree with percentage 30%, individuals have a Ph.D. with percentage 53%.

According to table number (2), includes respondents' academic qualification shows that, the most respondents are p.h.D. holders, they are a warded it for a wide range of programs in the medical field and English language (e.g. linguistics, biochemistry, medicine, physiology, etc.) to imitate new projects that add to the collective knowledge based on both English language and medical field.

Master degrees are more versatile and advantages aspects and have a wide range of professional and academic applications. That means the major of teachers (83%) are enough academic qualified and (30%) of them have to award p.h.D. degree in the future.

Table (4.3) Nationality

Nationality	Frequencies	Percentage %
Sudanese	29	96.7
Non Sudanese	1	3.3
Total	**30**	**100**

In this study the most nationalities of individuals are Sudanese with percentage 96.7%.

Table number (4.3) explains the nationalities of teachers, it may still be necessary to have done lectures with local teachers, even at advanced level, to explain some technical aspects of the Medical English language, e.g. grammar, medical vocabulary, and communication skills, etc, since the native teachers might not know precious difficulties of medical students to understand medical vocabulary. Derek, H. (2015).

Table (4.4) Teaching Experiences

Experience	Frequencies	Percentage %
1 – 5 years	19	63.3
6 – 10 years	6	20.0
11 – 15 years	1	3.3
More than 15 years	4	13.3
Total	**30**	**100**

The table (4.4) shows the experiences for respondents by years, were observe that 19 individuals by 63.3% had experience ranged from 1 up to 5 years, 6 individuals by 20.0% had experience ranged from 6 up to 10 years, one individual by 3.3% had experience ranged from 6 up to 10 years, and 4 individuals by 13.3% had experience more than 15 years.

Regarding the above table (4.4) the majority of respondents are less experiences about (63%) of them five or less years of experiences, therefore most of professional teachers migrated for work outside Sudan in an others university around the world. But (37%) of teachers are enough experienced to improve the quality of medical vocabulary teaching.

Table (4.5): Put in order the Common Difficulties that Encounter Medical Students in Understanding Medical English Vocabulary

Statement	Ranking									
	1	2	3	4	5	6	7	8	9	10
1-Roots of words	**12**	2	3	2	4	1	2	1	0	3
2-Suffixes and prefixes of words	2	**13**	6	0	0	1	1	2	4	1
3-Synonym of words	1	3	**8**	**8**	3	5	0	1	0	1
4-Antonym of words	1	2	**7**	5	0	2	**7**	2	5	5
5-Abbreviations of words	4	2	4	0	**9**	2	1	4	3	1
6-A words with multiple meanings	4	2	6	5	3	**8**	0	0	2	0
7-A homograph of words	0	0	1	3	2	5	5	**11**	1	2
8-A homophone of words	0	6	0	0	2	3	4	6	**9**	0
9-Homonym of words	2	0	0	1	1	3	**13**	2	5	3
10-Medical communication of words	5	1	0	2	1	3	2	1	1	**14**

For the common difficulties that encounter medical students for understanding medical English vocabulary; for the Root of words most respondents take it rank (1) by 40.0%. For Suffixes and prefixes of words most respondents take it rank (2) by 43.3% and, for Synonym of words most respondents take it rank (4) by 26.7%. For Antonym of words most respondents take it rank (3) by 23.3%. For Abbreviations of words most respondents take it rank (5) by 30.0%. For a words with multiple meanings most respondents take it rank (6) by 26.7%. For a homograph of words most respondents take it rank (8) by 36.7%. For **A homophone of words** most respondents take it rank (9) by 30.0%. For

Homonym of words most respondents take it rank (7) by 43.3%. For Medical communication of words most respondents take it rank (10) by 46.7%.

In Table (4.5) the result shows that the teachers' opinions about some difficulties encounter medical students to understand medical English vocabulary, these difficulties were ranked as following:

1- Medical Communication of Words

communication is very important part in medical issues because it represents a lot of aspects of medical English skills during speaking, understanding, and writing process according to three elements of communication sender, massage and receiver which controlling by term of time of the massage quality and techniques used. Communication takes place only if the receiver understands the sender's message. It requires the participation of both sender and receiver. It is has a vital role of everyday medical life in all relationships with co- medical workers and hospital team to conveys information, ideas and feelings for working well with people, being able to set and achieve goals, solving medical problems and making good and quick medical decisions.

Srikant, S. (2016) stated that "communication and medicine continues to abide by the following distinctive aims:

- To consolidate different traditions of discourse and communication research in its commitment to an understanding of psychosocial, cultural and ethical aspects of healthcare in contemporary societies.

-To cover the different specialties within medicine and allied healthcare studies.

-To underscore the significance of specific areas and themes by bringing out special issues from time to time.

-To be fully committed to publishing evidence-based, data-driven original studies with practical application and relevance as key guiding principles.

-To be targeted at an interdisciplinary, which will include healthcare professionals and researcher and students in the medical, social and human sciences.

-To promote a reader-friendly style and format, including engagements with debates and dialogues on crosscutting themes of topical significance.

2- Prefixes and Suffixes of Medical Words

Prefixes are placed at the beginning of a word to modify or change its meaning. Prefixes are combined with word roots and/or suffixes and whenever you change the prefix of a word, you change the meaning of the word. Prefixes are also used to denote the following:
Position, number, measurement, direction and other (study.com).

3- Confusing of Medical Prefixes

There are an enormous number of medical prefixes that you have been exposed to at this point. Most of them may be sticking okay, but there are likely a few that you keep getting confused. You are not alone! There are some prefixes that most healthcare professionals have to take an extra minute to think about in order to keep them straight. This could be because they are spelled or sound similarly, or it could be because the meanings are close but not quite the same. Suffixes are the ending part of a word that modifies the meaning of the word. Suffixes are combined with combining forms and whenever you change the suffix of a word, you change the meaning of the word. Suffixes are also used to denote the following: Procedure, Instrument Condition or disorder, Disease. (studt.com).

4- Commonly Confused Suffixes

There are many different suffixes that are used in medical terminology. Some contain similar letters and have similar meanings. This can often lead to confusion when creating or interpreting medical terms.
Healthcare professionals have to pay close attention when using medical suffixes in order to make sure the correct information is being communicated. Accuracy is an absolute must when distinguish suffixes. We're going to clarify some of the most commonly confused medical suffixes.(study.com).

5- Homonym of Medical Words

Homonyms of medical words may be difficult because it has a specific or generic that has been used for two or more different organisms. As American heritage 2007 defines homonym

"is one of two or more words that have the same sound and often the same spelling but different meaning, also a word used to designate several different things. Homonym, homophone and homograph are words that are easily confused because they look alike or sound alike (or both) but have different meanings".

6- Root of Medical Words

Is the central part of a word. It can be combined with one or more roots in a medical word. The most original of medical's words roots are from Greek and Latin, therefore many medical students face problems to understand medical vocabulary even native speaker. FAO, (2017) states that

" Medical terminology can be very overwhelming language to learn. This is especially true once you see how closely spelled – and in some cases, pronounced some of the word root are. It is imperative that close attention is paid when using medical terminology in order to be sure that the desired information is communicated.

7- A homograph of Words

Homograph are words with different pronunciation, meaning and origins but the same spelling. They are not to be confused with homonyms, homophone and heteronyms. In order to work out which pronunciation and which meaning is appropriate, you need to be aware of the context. (Daily writing tips.com).

6- Abbreviations of Words

Medical abbreviation plays vital part of team work in hospital to safe time, accurate procedures and care of patients with quality and safety. It comes

from (Latin brevis, meaning short) is a shortened form of a word or phrase. It consists of a group of letters taken from the word or phrase. Encyclopedia, (2005). In addition to syllabic abbreviation is usually formed from the initial syllables of the several words. It is a variant of the acronym. Syllabic abbreviations are usually written using letter case, sometimes starting with capital letter, and always pronounced as words rather than letter by letter. (International Bureau of weights and measures. 2006). Also medical professionals use abbreviations to save time filling out prescriptions and exam sheets doctors and nurses often abbreviate common words and phrases such as O/e as an abbreviation for " on examination," and XR for x-ray. Virginia, E. and Jenny, D. and Trang, T. (2012).

7- A homophone of Words

Homophones are two or more words that are pronounced the same but different in meaning, origin, and after spelling. As David, R. (2007) states that

> *"It is possible for a word to be a homograph or a homophone. However, whatever the word may be, it is also, by definition, a homonym. In other words, homonym is a conceptual word that embraces both homograph and homophone."*

8-Synonym of Words

It means medical word has one or more same or similar meanings. In biologic nomenclature, a term used to denote one of two or more names for the same species or taxonomic (taxon). Alsoan alternative name for the same diseases, sign, bacteria, etc. A key word or sign may have a number of synonym. Only the medical context can identify the precious of medical words. (The American Heritage medical dictionary. (200).

9-A words with Multiple Meanings

A medical word has many different meanings with same spelling and sound therefore, only the context can be gives the exacted meaning which demands by medical student. As Carolyn, L. and Kate, L. (2005) mentioned

that Most of medical students need to expand their working vocabularies, some of them have a natural facility for language and semantic relationships, enabling them to enlarge their vocabularies almost effort lessly. Simply reading, listening and talking seem to boost these students' vocabulary skills.

Many other students need to exert conscious energy to understand and recall an increasingly diverse medical vocabulary. Some of them are poor or reluctant readers. Other students have limited exposure to a rich variety of spoken English. Still others have language-learning disabilities, attention disorders or ineffective systems for storing and retrieving vocabulary. All of these students can benefit from specific vocabulary exposure and instruction. They can improve their vocabulary skills through conscious attention and guided learning. The main goal of Spotlight on medical vocabulary is to help students recognize and use specific strategies to enrich their skills for understanding and using an increasingly rich vocabulary. Multiple Meaning Words teaches students that many words have more than one meaning that is not always the same part of speech. Recognizing and using more than one meaning for the same word demonstrates not only richness of the quantity and quality of someone's vocabulary but also the flexibility of that vocabulary. Some students have no difficulty recalling one meaning for a word, but cannot identify other meanings without prompting or further information. Such difficulty may be due to a limited vocabulary, word finding difficulties or rigid thinking. Quick recall of multiple meanings for words enables us to appreciate puns and other common forms of humor. It also helps us to think about why we might have misheard or misunderstood what someone just said. Here some guidelines for doing the activities with students.

• To understand that a multiple-meaning word has more than one meaning

• To recognize that multiple-meaning words can be the same or different parts of speech

• To match different meanings with the same word

• To identify and use multiple meanings for words

10- Antonym of Words

A word opposite in meaning to another.(Dictionary.com)

An online antonyms dictionary can be very useful. Many times we can't remember the word we want to use and most people do not own an antonyms dictionary nor do most word processor applications have an antonyms dictionary included in its package. This can pose a problem for several reasons. Medical Students have a great need for this type of a dictionary because it helps to provide several choices for the opposites for words. When writing medical reports, students would benefit from this type of dictionary. It helps them to expand their medical vocabulary and be familiar with the nuances and opposites of the English language. Also, writers could use this to liven up their writing and make more drastic contrasts. An antonyms dictionary can provide the word that is on the tip of your tongue, an online antonyms dictionary can save you time and energy. The best thing about online dictionaries is that they are auto-updated. The English language is constantly changing and new words are being added. The meanings of older words are changing. Thus, when using an online dictionary, be assured you have the most up-to-date version. Paper dictionaries are updated and older ones may not be useful. Using an online dictionary is also very simple and easy. You might want to choose an online dictionary that you have heard of or that has been recommended to you.

With everything that is available on the Internet, choosing an online antonyms dictionary will save time, money and energy. Simply enter the word you would like to find the antonyms for in the online dictionary's web page and within seconds, receive a long list of words ready for use. Most dictionaries also provide several examples of usage to help when you want to use new words that you aren't familiar with. Just don't get caught in a web of creating accounts and providing credit card information. Most online dictionaries are free of charge with no strings attached.

Table (4.6): The main Factors Leading to Weakness of Medical Students in Medical English Vocabulary

Statement	A strongly agree	Agree	Neutral	Disagree	Strongly disagree
1-Un trained teaching staff	1 3.3%	8 26.7%	8 26.7%	10 33.3%	3 10.0%
2-Weakness in English language in secondary school	17 56.7%	12 40.0%	1 3.3%	0 0.0%	0 0.0%
3-Similarities of words confuse un trained teachers as (synonym)	4 13.3%	5 16.7%	4 13.3%	12 40.0%	5 16.7%
4-Lack of English staff members	4 13.3%	12 40.0%	4 13.3%	8 26.7%	2 6.7%
5-The English syllabus is irrelevant to the medical students needs	6 20.0%	10 33.3%	7 23.3%	4 13.3%	3 10.0%
6-Poor of vocabulary knowledge	10 33.3%	17 56.7%	2 6.7%	1 3.3%	0 0.0%
7-Medical students tend to use a word in unsuitable situation.	2 6.7%	12 40.0%	7 23.3%	8 26.7%	1 3.3%
8-Over crowded class	9 30.0%	10 33.3%	6 20.0%	5 16.7%	0 0.0%
9-English course need to (ESP) for medical students.	10 33.3%	11 36.7%	6 20.0%	3 10.0%	0 0.0%
10-Unsuitable of strategies are adopted.	5 16.7%	14 46.7%	5 16.7%	6 20.0%	0 0.0%
11-Some medical students feel resistant to medical English vocabulary.	1 3.3%	10 33.3%	4 13.3%	11 36.7%	4 13.3%

Table (4.6) illustrates the views of respondents about the phrases that belong to The main factors leading to weakness of medical students in medical English vocabulary, where we note the respondent's answered on statements were as follows:

1. Un trained teaching staff: you have one individual by 3.3% answered strongly agree, 8 individuals by 26.7% answered agree, also 8 individuals by 26.7% answered neutral, 10 individuals by 33.3% answered disagree, 3 individuals by 10.0% answered strongly Disagree.

2. Weakness of medical students in English: you have 17 individuals by 56.7% answered strongly agree, 12 individuals by 40.0% answered agree, and one individual by 3.3% answered neutral, no individual answered disagree and strongly Disagree.

3. Similarities of words confuse un trained teachers as synonym: you have 4 individuals by 13.3% answered strongly agree, 5 individuals by 16.7% answered agree, and 4 individuals by 13.3% answered neutral, 12 individuals by 40.0% answered disagree 5 individuals by 16.7% answered strongly disagree.

4. Lack of English staff members, which 4 individuals by 13.3% answered strongly agree, 12 individuals by 40.0% answered agree, and 4 individuals by 13.3% answered neutral 8 individuals by 26.7% answered disagree, and 2 individuals by 6.7% answered strongly Disagree.

5. The English syllabus is irrelevant to the medical students' needs: you have 6 individuals by 20.0% answered strongly agree, 10 individuals by 33.3% answered agree, and 7 individuals by 23.3% answered neutral, 4 individuals by 13.3% answered disagree, 3 individuals by 10.0% answered Strongly Disagree.

6. The medical students' vocabulary knowledge is poor, you have 10 individuals by 33.3% answered strongly agree, 17 individuals by 56.7% answered agree, and 2 individuals by 6.7% answered neutral, one individual by 3.3% answered disagree, and no individual answered strongly Disagree.

7. Medical students tend to use a word in unsuitable situation: you have 2 individuals by 6.7% answered strongly agree, 12 individuals by 40.0% answered agree, and 7 individuals by 23.3% answered neutral 8 individuals by 26.7% answered disagree, one individual by 3.3% answered strongly Disagree.

8. Overcrowded class of medical students: you have 9 individuals by 30.0% answered strongly agree, 10 individuals by 33.3% answered agree, and 6 individuals by 20.0% answered neutral 5 individuals by 16.7% answered disagree, and no individual answered strongly Disagree.

9. English course need to (ESP) for medical students: you have 10 individuals by 33.3% answered strongly agree, 11 individuals by 36.7% answered agree, and 6 individuals by 20% answered neutral 3 individuals by 10.0% answered disagree, and no individual answered strongly Disagree.

10. Unsuitable of strategies are adopted: you have 5 individuals by 16.7% answered strongly agree, 14 individuals by 46.7% answered agree, and 5 individuals by 16.7% answered neutral 6 individuals by 20.0% answered disagree, and no individual answered strongly Disagree.

Some medical students feel resistant to medical English vocabulary: you have one individual by 3.3% answered strongly agree, 10 individuals by 33.3% answered agree, and 4 individuals by 13.3% answered neutral 11 individuals by 36.7% answered disagree, and 4 individuals by 13.3% answered strongly Disagree.

Table (4.7): The Statistical Measures of Table (4.6)

No	Phrases	Chi-square	Df	Sig.	Median	Interpretation
1	1-Un trained teaching staff	19.667	4	0.000	3.00	Neutral
2	2-Weakness in English language in secondary school	13.400	2	0.000	5.00	A strongly agree
3	3-Similarities of words confuse un trained teachers as (synonym)	17.667	4	0.000	2.00	Disagree
4	4-Lack of English staff members	10.667	4	0.000	4.00	Agree
5	5-The English syllabus is irrelevant to the medical students needs	15.000	4	0.000	4.00	Agree
6	6-Poor of vocabulary knowledge	22.533	3	0.000	4.00	Agree
7	7-Medical students tend to use a word in unsuitable situation.	13.667	4	0.000	3.00	Neutral
8	8-Over crowded class	12.267	3	0.000	4.00	Agree
9	9-English course need to (ESP) for medical students.	15.467	3	0.000	4.00	Agree
10	10-Unsuitable of strategies are adopted.	17.600	3	0.000	4.00	Agree
11	11-Some medical students feel resistant to medical English vocabulary.	12.333	4	0.000	2.50	Neutral

The Results of the Table (4.7) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Un trained teaching staff was (19.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Weakness in English

language in secondary school was (13.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Similarities of words confuse un trained teachers as (synonym)was (17.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Lack of English staff members was (10.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The English syllabus is irrelevant to the medical students' needs was (15.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Poor of vocabulary knowledge was (22.533) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Medical students tend to use a word in unsuitable situation was (13.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Over crowded class

was (12.267) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

9. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement English course need to (ESP) for medical students was (15.467) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

10. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Unsuitable of strategies are adopted was (17.600) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

11. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Some medical students feel resistant to medical English vocabulary was (12.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.8): Distribution of Frequencies and Percentages of Table (4.6)

Valid	Frequency	Percent
A strongly agree	96	20.0%
Agree	178	37.1%
Neutral	82	17.1%
Disagree	101	21.0%
Strongly disagree	23	4.8%
Total	480	100.0%

Table (4.9): Statistical Measures of Sum up of Table (4.6)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	480	127.854	4	0.000	4.00	Agree

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (127.854) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Regarding table (4.6) which shows some factors leading to weakness of medical students in medical English vocabulary, The participations of this study explain their opinions in strongly agree and agree as following: The most reason of weakness in medical English vocabulary is the weakness of medical students in English language in secondary school (97%), also their English's vocabulary knowledge is poor (90%), in addition to English course needs to be (EAP) (70%), then over crowded class of medical students (64%), moreover some unsuitable of strategies are adopted by teachers (63%), (54%) of respondents say that the English syllabus is irrelevant to the medical students' needs, and the same as lack of English staff members, finally they indicated that medical students tend to use a word in unsuitable situation (47%) .

The teachers who participated in this study pointed disagree and a strongly disagree to the following factors leading to weakness of medical students in medical English vocabulary. Firstly, similarities of words as(synonyms), confuse un trained teachers (57%), secondly (50%) of them mentioned that some medical students feel resistant to medical English vocabulary, and finally (44%) of teachers strongly disagree and disagree with un trained teaching staff as a factor of weakness in medical English vocabulary.

1- According the above table (4.6) that shows (97%) of teachers said weakness of medical students in English language from secondary school, which agree with(Iua.edu.sd/iua magazine/ art.com) says that: (Harrison, 1975) emphasizes that

> *" English language in Sudan where Arabic is the native language find it difficult in using English in communication. When engaged in authentic communication situation, they often lack some of vocabulary or language items they need to get their meaning across. As a result, they cannot keep the interaction going for extended period of time".*

2- The statement of the medical students' vocabulary is poor were stated by (90%) of teachers, that mean vocabulary is the concerned part to development English language, as Pauline, R. (1991. P:27) says that

> *" terminology is an applicable field of study concerned with the creation, collection and ordering of the vocabulary of special language'.*

3- The teachers who points that medical students' English courses need to ESP were (70%), this courses including medical vocabulary practices in four skills, listening, writing, understanding and speaking which necessary for help medical students in their future careers, that stated by Jeremy, D. (2011). (English for specific purposes) involves teaching and learning the specific skills and language needed by particular learners for a particular purposes. The P in ESP is always a professional purpose a set of skills that learners currently need in their or will need in their professional careers. All learners need ESP and would benefit from a course tailored to their needs.

4- Over crowded class of medical students that mentioned by (64%) of teachers, is one of the most difficulties that faced both of teachers and medical students and a lot of studies consider this part as obstacle in learning process. Also Faculty of Medicine has 400 of medical students this reflect some difficulties between teachers and students such as communication, follow up, grammar check points, and listening, etc.

5- (63%) of teachers asserted that unsuitable strategies were adopted in teaching medical English vocabulary, because vocabulary knowledge is critical to reading comprehension, it is important to help medical students foster their development of a large " word bank" and effective learning strategies.

6- The most of teachers about (54%) emphasized that the English syllabus is irrelevant to the medical students' needs, therefore medical students at Faculty of Medicine, in first year study General English language in semester one and two, there are many other elements that should be included in an ESP course, these to be easier to find from other sources. These might include:

1- A grammar syllabus, which may come from a separate book. (grammar for medical).

2- List of vocabulary, which may come from online or printed dictionaries.

3- news article, which may come from online news sites. Jeremy, D. (2011)

But the most obvious question to ask when choosing a course book is "Does it cover my learners' needs? Things to look out for include:

a) Listening exercises of realistic situation dialogues in which professionals are doing their job.

b) Step –by-step guidance for learners on how to cope in similar situations and role-play to practice those skills- what to say and how to act.

c) Authentic texts that represent the types of documents that your learners will need to read and write in their jobs and which they are likely to have problems with.

d) Guidance on how to use the model text to inform the learners' own writing.

7- One of the most factors leading to weakness of medical students in medical English vocabulary is lack of English staff members that stated by (54%) of the respondents, many of qualified English teachers migrated outside Sudan to work in others universities, therefore the teachers try to distribute their time between different universities, so that this makes problems of both teachers and medical students for example the teachers will be stressed and medical students will receipt the information from one source without teachers' follow up. These may be created poor medical English vocabulary of medical students.

8- (47%) of respondents a strongly agree and agree with the statement of medical students tend to use a word in unsuitable situation is a factor of weakness in medical English vocabulary, in Sudan there are some difficulties face medical students for learning medical English language for example,

different students can have different difficulties and problems in learning English. They can make different mistakes in English pronunciation, grammar, orthography and vocabulary usage, listening comprehension and speaking in English are more difficult and more important for learners to master than reading and writing. When reading and writing a text a learner has more time for thinking and pauses than when listening and speaking in English. A learner can also look up unknown vocabulary in medical dictionaries and use other English reference books when reading and writing a text in English which impossible when listening and speaking in English. (www.teaching english.org.uk.com).

9- Similarities of words confuse un trained teachers as (synonym), this statement strongly disagree and disagree by (57%) of teachers, that mean teachers at Faculty of Medicine are qualified enough, also an ESP teacher doesn't need to know an ESP topic very well to begin with. Some of Medical English teachers become so familiar with various areas of medicine that they almost feel as if their medical knowledge is as good as that of doctors they teach.   In some case (such as university), it might be possible for the ESP teacher to team up with a teacher of the specialist subject. Jeremy, D. (1991). Although subject specialist with strong methodology would be even better.

10- Un trained teaching staff is main factor for deterioration of English in Sudan, most of teachers didn't agree and strongly disagree about (44%), but (Abdelrahman, M. (2001. P:146) states that

> " *the first and most important factor which affects adversely the teaching of English in Sudan is that many teachers of English at the school level are neither specialized nor qualified to teach English."*

11- (37%) of teachers stated that medical students feel resistant to medical English vocabulary, that mean Being a medical student puts you in a very privileged poison, among the very top students across the country. It generally seems to be the case that medics follow the mantra "work hard, play hard". Most importantly, remember that being a student is not only means to an end,

but an end in itself. Make sure you make the most of being an undergraduate.
Robert, C. (2013)

Table (4.10): The Role of Faculty of Medicine, University of Khartoum to Increase Abilities of Medical Students for Learning Medical English Vocabulary in Proper Ways

Statement	A strongly agree	Agree	Neutral	Disagree	Strongly disagree
1-Teaching of medical English course cope with international standards of medicine colleges.	4 13.3%	7 23.3%	11 36.7%	7 23.3%	1 3.3%
2-Text books are enough and available.	5 16.7%	5 16.7%	3 10.0%	15 50.0%	2 6.7%
3-There are sufficient teaching materials for teaching materials	4 13.3%	7 23.3%	3 10.0%	14 46.7%	2 6.7%
4-medical students are taught medical English(EAP) at first year.	4 13.3%	12 40.0%	5 16.7%	7 23.3%	2 6.7%
5-English course have enough time to achieve syllabus objectives.	2 6.7%	5 16.7%	7 23.3%	11 26.7%	5 16.7%
6-Physical classroom are prepared to meet students' needs.	10 33.3%	17 56.7%	2 6.7%	1 3.3%	0 0.0%
7-English course were taught have clears guidance for teachers to follow in class.	2 6.7%	12 40.0%	7 23.3%	8 26.7%	1 3.3%

Table (4.10) illustrates the views of respondents about the phrases that belong to The Faculty of medicine university of Khartoum has a vital role to increase abilities of medical students to study English vocabulary in some proper ways through the following:

1. in my faculty, Teaching of medical English course cope with international standards of medicine colleges, you have 4 individuals by 13.3% answered strongly agree, 7 individuals by 23.3% answered agree, and 11 individuals by 36.7% answered neutral, 7 individuals by 23.3% answered disagree, one individual by 3.3% answered strongly Disagree.

2. in my faculty, text books are enough and available, you have 5 individuals by 16.7% answered strongly agree, 5 individuals by 16.7% answered agree, and 3 individuals by 10.0% answered neutral, 15 individuals by 50.0% answered disagree and 2 individuals by 6.7% answered strongly Disagree.

3. in my faculty, there are sufficient teaching materials for teaching materials, you have 4 individuals by 13.3% answered strongly agree, 7 individuals by 23.3% answered agree, and 3 individuals by 10.0% answered neutral, 14 individuals by 46.7% answered disagree 2 individuals by 6.7% answered strongly disagree.

4. medical students are taught medical English (EAP) at first year, which 4 individuals by 13.3% answered strongly agree, 12 individuals by 40.0% answered agree, and 5 individuals by 16.7% answered neutral 7 individuals by 23.3% answered disagree, and 2 individuals by 6.7% answered strongly Disagree.

5. English course have enough time to achieve syllabus objectives. you have 2 individuals by 6.7% answered strongly agree, 5 individuals by 16.7% answered agree, and 7 individuals by 23.3% answered neutral, 11 individuals by 26.7% answered disagree, 5 individuals by 16.7% answered Strongly Disagree.

6. physical classroom is prepared to meet students' needs, you have 10 individuals by 33.3% answered strongly agree, 17 individuals by 56.7%

answered agree, and 2 individuals by 6.7% answered neutral, one individual by 3.3% answered disagree, and no individual answered strongly Disagree.

English course were taught have clears guidance for teachers to follow in class, you have 2 individuals by 6.7% answered strongly agree, 12 individuals by 40.0% answered agree, and 7 individuals by 23.3% answered neutral 8 individuals by 26.7% answered disagree, one individual by 3.3% answered strongly Disagree.

(4.11): The Statistical Measures of Table (4.10)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Teaching of medical English course cope with international standards of medicine colleges.	19.333	4	0.000	3.00	Neutral
2	Text books are enough and available.	18.000	4	0.000	2.00	Disagree
3	There are sufficient teaching materials for teaching materials	15.667	4	0.000	2.00	Disagree
4	medical students are taught medical English(EAP) at first year.	19.667	4	0.000	4.00	Agree
5	English course have enough time to achieve syllabus objectives.	17.333	4	0.000	2.00	Disagree
6	Physical classroom are prepared to meet students' needs.	22.533	3	0.000	4.00	Agree
7	English course were taught have clears guidance for teachers to follow in class.	13.667	4	0.000	3.00	Neutral

The Results of Table (4.11) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Teaching of medical English course cope with international standards of medicine colleges was (19.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Text books are enough and available was (18.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement There are sufficient teaching materials for teaching materials was (15.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement medical students are taught medical English(EAP) at first year was (19.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement English course have enough time to achieve syllabus objectives was (17.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Physical classroom are prepared to meet students' needs was (22.533) with P-value (0.000)

which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement English course were taught have clears guidance for teachers to follow in class was (13.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.12): Distribution of Frequencies and Percentages of Table (4.10)

Valid	Frequency	Percent
A strongly agree	31	14.7%
Agree	65	30.9%
Neutral	38	18.1%
Disagree	63	30.0%
Strongly disagree	13	6.2%
Total	**210**	**100.0%**

Table (4.13): Statistical Measures of Sum up of Table (4.10)

No	N	Chi-square value	df	Sig	Median	Interpretation
1	210	46.381	4	0.000	3.00	Neutral

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (46.381) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically for

Table number (4.10) focus on role of Faculty of Medicine, University of Khartoum to increase medical students' abilities to develop their medical English vocabulary, according to a strongly agree or agree the teachers act out their opinions to following terms:

1- (90%) of teachers said that physical classroom is prepared well to meet medical students' needs to understand medical English vocabulary, therefore at

faculty of medicine has a large classroom, well organized, but it doesn't has an English language's lab, as Diannal, V. (2006) states that

> *"using a combination of auditory, visual and kinesthetic strategies will help students benefit from all the ways that they can learn information."*

2- (54%) of teachers said that medical students are taught medical English (EAP)at first year, Faculty of Medicine teaches some general medical terminologies only in the final semester in second year, about (30) hours in a hole. When Pauline, R. (1991. P:27.) Mention that

> "*For many people vocabulary, particularly specialist vocabulary (or terminology, is a key element of ESP. Despite this, vocabulary studies and, in particular, the teaching of vocabulary appear to have been somewhat neglected in ESP'.'*

3-The most of teachers (47%) mentioned that English course were used have clear guidance for teachers to follow in class, regarding previous table number (1) the teachers at Faculty of Medicine are qualified enough to teach English courses because they have (53%) of them are PhD holders and (30%) have a master degree.

4-The majority of teachers (37%) stated that Faculty of Medicine, University of Khartoum teaching medical English courses in a way that cope with international standards of Medicine college, comparing with University of Tabuk which teaches medicine collage a proper syllabus at first year called Oxford English Careers- Medicine (1) and Medicine (2). These are including: 1-Career skills and knowledge, (It's my job – Patient care – Culture project/Project). 2-Language skills (listening - reading - speaking - writing).

3-Language knowledge, (language spot, vocabulary, and pronunciation) in different medical issues (unit 1 -12) in 15 hours weekly. Hence Faculty of medicine teaches medical students a book of Bridging the Gap. Included the following skills reading, vocabulary, Grammar, speaking, and writing, in semester one and two, and it didn't content any medical issues, in two hours

weekly. That means, teaching of medical English course at Faculty of Medicine didn't cope with international standards of Medicine Colleges.

On the other hand, the teachers who their views were disagree and a strongly disagree are pointed to the following terms, at Faculty of Medicine, University of Khartoum,

5-Text books enough and available (57%), different materials are demanded to develop medical vocabulary of medical students, that agree with Jeremy, D. (2011. P: 15) says that

> " *students have very specific needs that cannot be met by using a single book, it is now possible to mix and match materials from several courses using a blended learning platform. This also illustrates a common feature of ESP courses: that they are often taught in a lender or online environment.*"

6- Sufficient teaching materials for teaching medical English vocabulary, (54%) of teachers were disagree and strongly disagree, their views may be reasonable so that Faculty of Medicine has overcrowded of medical students so it didn't follow them quite enough, also there is no audio visuals aids, also a short of time toward English language's lecture to apply these materials. For enhancing medical English vocabulary, it is important to supplement medical students' courses with additional materials that they have selected based on students' needs. For ready–made supplementary materials, may publisher course books nowadays offer photocopies work sheet and classroom actives online at the course website Jeremy, D. (2011).

7- Finally (44%) of teachers disagree and strong disagree with the expression of English courses have enough time to achieve syllabus objectives.) Many of teachers have of lack of time to apply a lecture, to a justification of the teaching methods and approaches used. In some ESP contexts a mixture of methodologies may be more appropriate than adherence to a single approaches e.g. CLT (communicative Language Teaching), may even require a higher-than normal amount of T-T-T (Teacher- Talking-Time). Jeremy, D. (2011).

Table (4.14): To Improve the Subject Specific Knowledge, the Teacher Should Be Careful of these Rules

Statement	A strongly agree	Agree	Neutral	Disagree	Strongly disagree
1-managing careful planning of English problems in classroom.	14 46.7%	13 43.3%	2 6.7%	1 3.3%	0 0.0%
2-exchange strategies to deal with vocabularies' problems.	14 46.7%	12 40.0%	2 6.7%	2 6.7%	0 0.0%
3- Subject teacher need to be confident.	15 50.0%	13 43.3%	1 3.3%	1 3.3%	0 0.0%
4-Subject specialist with strong strategies are effective.	9 30.0%	16 53.3%	2 6.7%	3 10.0%	0 0.0%
5-choice of rationale for medical vocabulary in classroom.	10 33.3%	18 60.0%	2 6.7%	0 0.0%	0 0.0%
6-make solution to perceive problems with low-level medical students.	13 43.3%	14 46.7%	3 10.0%	0 0.0%	0 0.0%
7-creating a good atmosphere in classroom.	16 53.3%	12 40.0%	2 6.7%	0 0.0%	0 0.0%
8-providing medical students with meaningful models of good practice.	11 36.7%	18 60.0%	1 3.3%	0 0.0%	0 0.0%
9-setting a memorable context with meaningful activities.	11 36.7%	17 56.7%	1 3.3%	1 3.3%	0 0.0%
10-applying a judicious mix of strategies and techniques.	8 26.7%	17 56.7%	5 16.7%	0 0.0%	0 0.0%
11- Medical students need patience on teacher's part.	13 43.3%	14 46.7%	3 10.0%	0 0.0%	0 0.0%
12-Ask medical students what are the learning strategies they	11 36.7%	12 40.0%	6 20.0%	1 3.3%	0 0.0%

are preference.					
13-Select teaching strategies based on medical students' needs.	15 50.0%	12 40.0%	2 6.7%	1 3.3%	0 0.0%
14-The course of English are regularly revised so to see medical students' weakness.	10 33.3%	10 33.3%	6 20.0%	3 10.0%	1 3.3%
15-Provides medical students with basic facts related to new words to what student already know.	9 30.0%	18 60.0%	3 10.0%	0 0.0%	0 0.0%
16-Balance and emphasis on, various skills with high powered participations by using (T.T.T), Teacher- Talking-Time.	9 30.0%	16 53.3%	4 13.3%	1 3.3%	0 0.0%

Table (4.14) illustrates the views of respondents about the phrases that belong to improve the subject specific knowledge, the teacher should be careful of these rules:

1. managing careful planning of English problems in classroom, you have 14 individuals by 46.7% answered strongly agree, 13 individuals by 43.3% answered agree, 2 individuals by 6.7% answered neutral, one individual by 3.3% answered disagree, no individual answered strongly Disagree.

2. exchange strategies to deal with vocabularies' problems, you have 14 individuals by 46.7% answered strongly agree, 12 individuals by 40.0% answered agree, 2 individuals by 6.7% answered neutral, 2 individuals by 6.7% answered disagree, no individual answered strongly Disagree.

3. Subject teacher need to be confident, you have 15 individuals by 50.0% answered strongly agree, 13 individuals by 43.3% answered agree, and one

individuals by 3.3% answered neutral, one individuals by 3.3% answered disagree, no individual answered strongly Disagree.

4. Subject specialist with strong strategies are effective, which 9 individuals by 30.0% answered strongly agree, 16 individuals by 53.3% answered agree, and 2 individuals by 6.7% answered neutral 3 individuals by 10.0% answered disagree, no individual answered strongly Disagree.

5. choice of rationale for medical vocabulary in classroom, you have 10 individuals by 33.3% answered strongly agree, 18 individuals by 60.0% answered agree, and 2 individuals by 6.7% answered neutral, and no individual answered disagree or answered Strongly Disagree.

6. make solution to perceive problems with low-level medical students, you have 13 individuals by 43.3% answered strongly agree, 14 individuals by 46.7% answered agree, and 3 individuals by 10.0% answered neutral, and no individual answered disagree or answered Strongly Disagree.

7. creating a good atmosphere in classroom. you have 16 individuals by 53.3% answered strongly agree, 12 individuals by 40.0% answered agree, and 2 individuals by 6.7% answered neutral, and no individual answered disagree or answered Strongly Disagree.

8. providing medical students with meaningful models of good practice, you have 11 individuals by 36.7% answered strongly agree, 18 individuals by 60.0% answered agree, and one individual by 3.3% answered neutral 5 individuals by 16.7% answered disagree, and no individual answered strongly Disagree.

9. setting a memorable context with meaningful activities, you have 17 individuals by 56.7% answered strongly agree, 11 individuals by 36.7% answered agree, and one individuals by 3.3% answered neutral, one individuals by 3.3% answered disagree, no individual answered strongly Disagree.

10. Applying a judicious mix of strategies and techniques, you have 8 individuals by 26.7% answered strongly agree, 17 individuals by 56.7%

answered agree, and 5 individuals by 16.7% answered neutral, and no individual answered disagree or answered Strongly Disagree.

11. Medical students need patience on teachers' part, you have 13 individuals by 43.3% answered strongly agree, 14 individuals by 46.7% answered agree, and 3 individuals by 10.0% answered neutral, and no individual answered disagree or answered Strongly Disagree.

12. Ask medical students what are the learning strategies they are preference, you have 11 individuals by 36.7% answered strongly agree, 12 individuals by 40.0% answered agree, 6 individuals by 20.0% answered neutral, one individual by 3.3% answered disagree, no individual answered strongly Disagree.

13. Select teaching strategies based on medical students' needs, you have 15 individuals by 50.0% answered strongly agree, 12 individuals by 40.0% answered agree, 2 individuals by 6.7% answered neutral, one individual by 3.3% answered disagree, no individual answered strongly Disagree

14. The course of English is regularly revised so to see medical students' weakness, you have 10 individuals by 33.3% answered strongly agree, 10 individuals by 33.3% answered agree, 6 individuals by 20.0% answered neutral, 3 individuals by 10.0% answered disagree, one individual by 3.3% answered strongly Disagree.

15. Provides medical students with basic facts related to new words to what student already know, you have 9 individuals by 30.0% answered strongly agree, 18 individuals by 60.0% answered agree, and 3 individuals by 10.0% answered neutral, and no individual answered disagree or answered Strongly Disagree.

Balance and emphasis on, various skills with high powered participations by using (T.T.T), Teacher- Talking-Time. you have 9 individuals by 30.0% answered strongly agree, 16 individuals by 53.3% answered agree, and 4 individuals by 13.3% answered neutral, and no individual answered disagree or answered Strongly Disagree.

Table (4.15): The Statistical Measures of Table (4.14)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	managing careful planning of English problems in classroom.	19.333	3	0.000	4.00	Agree
2	exchange strategies to deal with vocabularies' problems.	16.400	3	0.000	4.00	Agree
3	Subject teacher need to be confident.	22.800	3	0.000	4.50	A strongly agree
4	Subject specialist with strong strategies are effective.	16.667	3	0.000	4.00	Agree
5	choice of rationale for medical vocabulary in classroom.	12.800	2	0.000	4.00	Agree
6	make solution to perceive problems with low-level medical students.	7.400	2	0.000	4.50	A strongly agree
7	creating a good atmosphere in classroom.	10.400	2	0.000	5.00	A strongly agree
8	providing medical students with meaningful models of good practice.	14.600	2	0.000	4.00	Agree
9	setting a memorable context with meaningful activities.	24.933	3	0.000	4.00	Agree
10	applying a judicious mix of strategies and techniques.	7.800	2	0.000	4.00	Agree

11	Medical students need patience on teacher's part.	7.400	2	0.000	4.00	Agree
12	Ask medical students what are the learning strategies they are preference.	10.267	3	0.000	4.00	Agree
13	Select teaching strategies based on medical students' needs.	19.867	3	0.000	4.50	Agree
14	The course of English are regularly revised so to see medical students' weakness.	11.000	4	0.000	4.00	Agree
15	Provides medical students with basic facts related to new words to what student already know.	11.400	2	0.000	4.00	Agree
16	Balance and emphasis on, various skills with high powered participations by using (T.T.T), Teacher-Talking-Time.	17.200	3	0.000	4.00	Agree

The Results of Table (4.15) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement managing careful planning of English problems in classroom was (19.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement exchange strategies to

deal with vocabularies' problems was (16.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Subject teacher need to be confident was (22.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Subject specialist with strong strategies are effective was (16.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement choice of rationale for medical vocabulary in classroom was (12.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement make solution to perceive problems with low-level medical students was (7.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement creating a good atmosphere in classroom was (10.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement providing medical

students with meaningful models of good practice was (14.600) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

9. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement setting a memorable context with meaningful activities was (24.933) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

10. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement applying a judicious mix of strategies and techniques was (7.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

11. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Medical students need patience on teachers' part was (7.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

12. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Ask medical students what are the learning strategies they are preference was (10.267) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

13. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Select teaching strategies based on medical students' needs was (19.867) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

14. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The course of English

are regularly revised so to see medical students' weakness was (11.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differ statistically differences.

15. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Provides medical students with basic facts related to new words to what student already know was (11.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

16. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Balance and emphasis on, various skills with high powered participations by using (T.T.T), Teacher- Talking-Time was (17.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.16): Distribution of Frequencies and Percentages of Table (4.14)

Valid	Frequency	Percent
A strongly agree	188	39.2%
Agree	232	48.3%
Neutral	45	9.4%
Disagree	14	2.9%
Strongly disagree	1	0.2%
Total	**480**	**100.0%**

Table (4.17): Statistical Measures of Sum up of Table (4.14)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	480	471.979	4	0.000	4.00	Agree

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (471.979) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.14) shows the teachers' views toward improve medical vocabulary among medical students to be adopted the following ranked rules with a strongly agree and agree: providing medical students with meaningful models of good practice to emulate (e.g.TV. or Radio) (97%), creating an atmosphere in the class room (94%), choice of rationale for any specific medical vocabulary (94%), The subject teachers need to be confident that they have the skills to motivate their learner (93%), setting a memorable context with meaningful activities (92%), make solutions to perceive problems with low-level medical students (90%), manage careful planning of the English language's problems that are likely to come up in a lecture (90%), medical students need more patience on the teacher's part (90%), provided medical students with basic facts related to new words (90%), select teaching strategies based on medical students' needs (90%), exchange strategies to deal with medical vocabularies' problems during the lecture (87%), balance and emphasis on various skills with high powered participations by using (T.T.T) teacher-talking-time (84%), applying a judicious mix of strategies and techniques (82%), ask medical students what are the learning strategies they are preference (77%) and the course of English are regularly revised so as to see any weakness of medical students (67%).

Table number (4.8) discussed how to improve the subject specific knowledge, by set up some rules that teachers should follow them.

1-The main rules that stated by (97%) of teachers was providing medical students with meaningful models of good practice to emulate (e.g. TV or audio), it is important to expose more times to a word, the understanding becomes. However, repeated exposed to new vocabulary word is often ignored.

Because listening and speaking skills is more difficulty so audiovisual practice help medical students to how to speak and listening.

2-(94%) of teachers strongly agree and agree of statements creating an atmosphere in the classroom which is conductive for teaching. Considering the following elements when planning ESP classes lesson, class profile, aims and sub- aims, learning out comes, anticipated difficulties. Jeremy, D. (1991)

3-(94%) choice of rationale for medical vocabulary in classroom. Rationale: An explanation or exposition of the principles of some opinion, action, hypothesis, phenomenon, a strong rationale supports use of direct vocabulary instruction as a means to enhance academic back ground knowledge. (This rationale also encompasses the erroneous assumptions about the adequacy of wide reading to enhance word- learning). In Building Background Knowledge for Academic Achievement. Robert, M. (2004) made the following recommendations for effective adolescent vocabulary instruction: 1. Introduce terms with student - friendly descriptions as opposed to definitions. 2. Include linguistic and nonlinguistic representations. 3. Ensure the gradual shaping of word meanings through multiple exposures. 4. Include instruction in word parts 5. Students should interact about the words they are learning. They should discuss the terms with one another on a regular basis. 6. Involve students in games and activities that allow them to play with the terms. 7. Focus on terms important to academic subjects.

 4- (93%) The subject teachers need to be confident that they have the skills to motivate their learners, to make learning successful and Clearly, any measure taken to improve the standards of teaching / learning of English in Sudan depends for its success and effectiveness on the qualification of teachers, the teaching aids, the quality of teaching, and above all the materials and the methods of teaching. Abdelrhman, M. (2001)

5-(92%) Setting a memorable context, with meaningful activities to enhance learning of medical vocabulary. Using context clues to infer the meaning of unknown words is the first word- learning strategy, because it is the most important one. Most words are learned from context, and if we can increase

students' proficiency in learning from context even small amount, we will great increase the number of word students learn. It is therefore vital to provide students with rich, sustained, and powerful instruction on using context clues. Providing such instruction takes a good deal of time and effort on the part of both teachers and students. (Nagy, W. &Anderson, R. 1994)

6-(90%) Make solutions to perceive problems with low-level medical students. Medical students of low-level of medical English vocabulary need excessive basic English as (Jeremy, Day. 1991) made solution to perceived problems with low-level ESP learners may not exist, but sample activities which may work include short presentation, one solution is to use good classroom speaking practice from a General English course book.

7-(90%)Manage careful planning of the language and problems that are likely to come up in a class. Jeremy, D. (1991.P:7) said ESP teachers need to remember that in order to best meet learner and teacher expectations they can get a lot of help by reading the instructions and guidance contained in the Teacher's book. Preparation should include learning as much about the learner's professional field as the teacher can research before the course; careful planning of the language and problems that are likely to come up in a class; strategy to deal with vocabulary problems that can't be solved during the lesson; and a commitment to learn, actively the learners' specialisation in order to be more prepared next time.

8-(90%) Some medical students need more encouragement or patience on the teacher's part. Medical English vocabulary is difficult to know because medical words have a lot of forms that make problems related to medical word formation e.g. one or more than roots of a word, suffixes and prefixes, communication difficulties, so the medical students need encouragement and patience on the parts of medical word studies.

9-(90%) Provide medical students with basic facts related to new words to students already know. Jeremy, D. (1991) said that One of the most effective methods of learning new vocabulary words is to teach unfamiliar words used in a text prior to the reading experience. Should preview reading materials to

determine which words are un familiar. Then these words should be defined and discussed. It is important for medical students to discuss its meaning. This allows developing an understanding of the word's conations as well as its denotation. Also, discussion provides with feedback about word. After pre-teaching vocabulary words, the medical students should read the text.

10-(90%) It is important to supplement your medical course with additional strategies that you have select based on medical students' needs Pauline, R. (1991. P:30) states that,

> *"Some ESP teaching materials and makes excellent practical suggestions, all of whom urge the explicit teaching of vocabulary. They teaching of strategies for coping with new vocabulary item sis suggested. More work obviously needed in this area, particularly work books for vocabulary activation and expansion".*

11- (87%) Exchange strategies to deal with vocabulary problem that can't be solved during the lecture Abdelrahman, M. (2001. P:17) mentioned that "The aims of teaching a foreign language, the type of the syllabus involved in its teaching, the methodology and techniques adopted in its implementation, the age of the learner, all and many others should vary according to the situation and environment in which teachers find themselves teaching. In other words, the relative importance of the various teaching materials and methods of teaching are greatly according to the language teaching situation".

12-(84%) Balance and emphasis on, various skills with high powered participations by using (TTT) Teacher Talking Time Jeremy, D. (1991) Some ESP classes may even require a higher- than normal amount of (TTT) in communication.

13- (84%) Subject specialist with strong strategies would be even better and effective. Graves, M. (2006. P: 4-5) states that,

> *"Successful vocabulary programs that supports effective teaching and students' development knowledge. The*

foundation of his instructional program includes a four- part
approach to developing robust vocabularies.

a) Provide rich and varied language experiences.

b) Teach individual words.

c) Teach word-learning strategies,

d) Foster word consciousness.

Teaching word-learning strategies

Is an important aspect of developing students' robust
vocabularies is teaching them tools to unlock the meaning of
unknown words. The most effective tools use the context of
the surrounding word or sentences to infer the meaning of a
word, using meaningful word parts to make sense out of the
unknown word using the dictionary effectively to help define
an unknown word."

14- (82%) Applying a judicious mix of strategies and techniques depending on the level of medical students Jeremy, D. (199. P:9) said that the first thing to do is to carry out a needs analysis (sometimes known as a skill audit) In some ways it may be similar to the pre-course questionnaire commonly handed out to learners on General English Courses. The differences that a needs analysis is normally more comprehensive, and includes many relevant details about the target learners and their needs and wants. If a needs analysis for each and every learner is conducted well, then the chances of delivering a quality ESP course that will satisfy its participants are very high. The in dings from such a skills audit will also help the teacher to create (and update as the course progresses) and ILP (individual Learning Profile).

15- (77%) Ask medical students what are the learning strategies they are preference. Diannal, V. (2006. P:4-5) says that

"Strategic learners: are students who view studying and
learning as a systematic process that is, to a good degree,
still under their control.

> *Strategic learners possess a wide variety of skills to aid their learning. These skills include knowledge about different types of academic tasks. Knowledge about strategies for learning, prior content knowledge, and knowledge about the contexts in which that knowledge could be useful".*

16- (67%) The courses of English are regularly revised so as to see any weakness of medical students. Jeremy, D. (1991) stated that with some ESP courses, the aims are subjective and learner-ed, so in many ways the assessment is related to their performance in the work place: Do they feel better able to perform in the situation that they identified at the start of the course as their needs? Have they learnt useful skills and language that they can use in their work? Are they more confident or sophisticated in their use of English at work? The purpose of assessment progress is to motivate medical students to study harder.

Table (4.18): The Most Effective Strategies that Used by Teachers for Enhancing Medical English Vocabulary

Statement	Very effective	Effective	To some effective	Not effective	Not at all effective
1-Using online or printed dictionary	4 13.3%	7 23.3%	11 26.7%	7 23.3%	1 3.3%
2-Vocabulary must be chosen according to medical students' needs.	5 16.7%	5 16.7%	3 10.0%	15 50.0%	2 6.7%
3- More time should be given for teaching new words.	4 13.3%	7 23.3%	3 10.0%	14 46.7%	2 6.7%
4-Medical students search for new vocabulary	4 13.3%	12 40.0%	5 16.7%	7 23.3%	2 6.7%
5-Applying information	2	5	7	11	5

gap or opinion gap and drilling.	6.7%	16.7%	23.3%	26.7%	16.7%
6-Course books, ,photocopies work, sheet, case study, new paper article.	10 33.3%	17 56.7%	2 6.7%	1 3.3%	0 0.0%
7-Group dynamics.	2 6.7%	12 40.0%	7 23.3%	8 26.7%	1 3.3%

Table (4.18) illustrates the views of respondents about the phrases that belong to the most effective strategies that used by teachers for enhancing medical English vocabulary:

1. Using online or printed dictionary you have 4 individuals by 13.3% answered Very effective, 7 individuals by 23.3% answered effective, and 11 individuals by 36.7% answered to some effective, 7 individuals by 23.3% answered not effective, one individual by 3.3% answered Not at all effective.

2. Vocabulary must be chosen according you have 5 individuals by 16.7% answered Very effective, 5 individuals by 16.7% answered effective, and 3 individuals by 10.0% answered to some effective, 15 individuals by 50.0% answered not effective, 2 individuals by 6.7% answered not at all effective.

3. More time should be given you have 4 individuals by 13.3% answered very effective, 7 individuals by 23.3% answered effective, and 3 individuals by 10.0% answered to some effective, 14 individuals by 46.7% answered not effective, 2 individuals by 6.7% answered not at all effective.

4. medical students search for new vocabulary you have 4 individuals by 13.3% answered very effective, 12 individuals by 40.0% answered effective, and 5 individuals by 16.7% answered to some effective, 7 individuals by 23.3% answered not effective, 2 individuals by 6.7% answered not at all effective.

5. Applying information, you have 2 individuals by 6.7% answered very effective, 5 individuals by 16.7% answered effective, and 7 individuals by 23.3% answered to some effective, 11 individuals by 26.7% answered not effective, 5 individuals by 16.7% answered not at all effective.

6. course books sites you have 10 individuals by 33.3% answered strongly agree, 17 individuals by 56.7% answered agree, and 2 individuals by 6.7% answered neutral, one individual by 3.3% answered disagree, and no individual answered strongly Disagree.

7.Group dynamics you have 2 individuals by 6.7% answered Very effective, 12 individuals by 40.0% answered effective, and 7 individuals by 23.3% answered to some effective, 8 individuals by 26.7% answered not effective, one individual by 3.3% answered Not at all effective.

Table (4.19): The Statistical Measures of Table (4.18)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Using online or printed dictionary	19.333	4	0.000	3.00	To some effective
2	Vocabulary must be chosen according to medical students' needs.	18.000	4	0.000	2.00	Not effective
3	More time should be given for teaching new words.	15.667	4	0.000	2.00	Not effective
4	Medical students search for new vocabulary	19.667	4	0.000	4.00	Effective

5	Applying information gap or opinion gap and drilling.	17.333	4	0.000	2.00	Not effective
6	Course books, photocopies work, sheet, case study, new paper article.	22.533	3	0.000	4.00	Effective
7	Group dynamics.	13.667	4	0.000	3.00	To some effective

The Results of Table (4.19) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Using online or printed dictionary was (19.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Vocabulary must be chosen according to medical students' needs was (18.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement More time should be given for teaching new words was (15.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Medical students search for new vocabulary was (19.667) with P-value (0.000)

which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Applying information gap or opinion gap and drilling was (17.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Course books, photocopies work, sheet, case study, new paper article was (22.533) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Group dynamics was (13.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.20): Distribution of Frequencies and Percentage of Table (4.18)

Valid	Frequency	Percent
A strongly agree	31	14.8%
Agree	65	30.9%
Neutral	38	18.1%
Disagree	63	30.0%
Strongly disagree	13	6.2%
Total	210	100.0%

Table (4.21): Statistical Measures of the Sum up of Table (4.18)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	210	46.381	4	0.00	3.00	To some effective

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (46.381) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

The above table (4.18) discuss the most effective strategies that used by teachers for enhancing medical English vocabulary. The teachers' views about very effective and effective teaching strategies that they should use to improve medical English vocabulary as following: course book's, photocopies work sheet, case study and new paper article was (27%), medical students search for new vocabulary was (16%), group dynamics was (14%), and using online or printed dictionary was (11%). But they mentioned that vocabulary must be chosen according to medical students' needs weren't effective strategies was (17%). Also (16%) teachers said applying information gap or opinion gap and drilling weren't effective strategies. More time should be given for teaching new words weren't effective strategies by (16%) of teachers.

1- Course Books and Photocopies Work Sheets (27%)

There is a strong link between vocabulary knowledge and reading comprehension. Koda, K. (1989) revealed high correlations between vocabulary knowledge and two measures of reading, close tasks and paragraph comprehension. While Coady, Magoto, Hubbard, Graney and Mokhtari (1993) found that an increase in L2 reading proficiency can be attributed to increase proficiency in vocabulary. In addition to read course books help medical students a lot to develop their another medical vocabulary and English language skills even when they use online engine searching machine, that mentioned by Pikulski, J. and Chard, D. (2003). mentioned that in order to make the transition to communicating through reading and writing, they need a large meaning vocabulary and effective decoding skills. There is an abundance of research evidence to show that an effective decoding strategy allows medical students not only to identify printed words accurately but to do so rapidly and automatically.

2- Medical Students Search for New Vocabulary (16%)

Medical students should apply a wide range of strategies to comprehend, interpret, evaluate, and appreciate texts. They draw on their prior experiences, their interactions with other readers and writers, their knowledge of word meaning and of other texts. Their word identification strategies, and their understanding of textual features (e.g. sound, letter correspondence, sentence structure, context, graphics).

International reading association and national council of teachers of English 1996.

3- Group Dynamics (14%)

Group dynamics has a great role to enhance medical vocabulary learning among medical students because it makes students exchange their knowledge and experiences through discussion and encourage themselves to read more about medical English vocabulary. Zoltan, D. (2003.P: 204) emphasizes that

> *"The study of group dynamics is a vibrant academic field, overlapping diverse disciplines. It is also highly relevant to language education because the success of classroom learning is very much dependent on how students related to each other, what the classroom climate is like what roles the teachers and learners play and more generally how well students can co-operate and communicate with each other, to manage language learners' groups in a way that they develop into cohesive and productive teams."*

4- Using online or Printed Dictionary (11%)

The online Medical dictionary is important strategies for promoting medical students' vocabulary as a specialized dictionary covering medical terms with authoritative spellings and definitions and it is a particularly crucial resource in medicine, where a misspelling or misunderstanding can have unfortunate consequences for patients under care. Also it allows alphabetical browsing in the combined electronic versions of more than one authoritative

medical reference, insuring access to correct spellings, as well as immediate, direct access to know search term type into the search box on the site. Print dictionaries in medical field may be sorted alphabetically or may be categorized according to medical specializations or by the various system in the body.(Dictionary.com) Inc.2017

Otherwise most of teachers' opinions about the strategy of vocabulary must be chosen according to medical students' need wasn't effective (17%), but this strategy is important step to design medical syllabus that agree with study carried out in Taiwan (English for specific purposes,1999,) entitle in Perceptions of English needs in Medical context. The survey information included respondents' opinions on:

1- The importance of English language use in students' studies and their future careers.

2- Basic English skills needed in a freshman English course.

3- Suggestions for development of English language curriculum.

Any way teachers' opinions about strategy applying information gap or opinion gap and drilling and strategy of give more time for teaching new vocabulary weren't effective because medical students at Faculty of Medicine, University of Khartoum are overcrowded about 400 in one classroom, also they are different in basic English skills and their English language needs, so difficult to follow them by teachers in addition to short time of lecture's duration, also most of teachers are very busy always on their own duties.

Table (4.22): Assessment Methods Used of Medical Students' English Vocabulary

Statement	A strongly agree	Agree	Neutral	Disagree	Astrongly disagree
1-Quizzes and exams	13 43.3%	13 43.3%	3 10%	1 3.4%	0
2-Oral exams	13 43.3%	9 30%	3 10%	4 13.3%	1 3.4%

3-Home work and problem sets	7 23.3%	15 50%	6 20%	2 6.7%	0
4-Peer assessments	6 20%	17 56.6%	6 20%	1 3.4%	0
5-Oral report	6 20%	15 50%	5 16.7%	4 13%3	0
6-Written reports	12 40%	15 50%	2 6.7%	1 3.4%	0
7-Presentation reports	20 66.6%	9 30%	0	1 3.4%	0
8-Speaking examination	15 50%	10 33.3%	2 6.7%	3 10%	0
9-Listening examination	14 46.7%	8 26.6%	6 20%	2 6.7%	0
10-Project work	10 33.3%	13 43.3%	5 17.7%	2 6.7%	0

Table (4.22) illustrates the views of the respondents about that belong to the assessment methods used of medical students' English vocabulary.

1- Using quizzes and exam you have 13 individuals by 43.3% answered a strongly agree, 13 individuals by 43.3% answered agree, and 3 individuals by 10% answered neutral, one individual by 3.4% answered disagree, finally no one answered disagree.

2 - Oral exams you have 13 individuals by 43.3% answered a strongly agree, 9 individuals by 30% answered agree, 3 individuals by 10% answered neutral, 4 individuals by 13.3% answered disagree and one individuals by 3.4% answered a strongly disagree.

3- Considering homework and problem sets you have 7 individuals by 23.3% answered a strongly agree, 15 individuals by 50% answered agree, 6 individuals by 20% answered neutral, 2 individuals by 6.7% answered disagree, no one answered a strongly disagree.

4- Using peer assessment you have 6 individuals by 20% answered a strongly agree, 17 individuals by 56.6% answered agree, 6 individuals by 20% answered neutral, one individual by 3.4% answered disagree, no one answered a strongly disagree.

5- Using oral report you have 6 individuals by 20% answered a strongly agree, 15 individuals by 50% answered agree, 5 individuals by 16.7% answered neutral, 4 individuals by 13.3% answered disagree and no one answered a strongly disagree.

6- To use written reports to assess medical student' vocabulary you have 12 individuals by 40% answered a strongly agree, 15 individuals by 50% answered agree, 2 individuals by 6.7% answered neutral, one individuals by 3.4% answered disagree and no one answered a strongly disagree.

7- Using presentation reports you have 20 individuals by 66.6% answered a strongly agree, 9 individuals by 30% answered agree, no one answered neutral, one individuals by 3.4% answered disagree and no one answered a strongly disagree.

8- Using speaking and communication methods, you have 15 individuals by 50% answered a strongly agree, 10 individuals by 33.3% answered agree, 2 individuals by 6.7% answered neutral, 3 individuals by 10% answered disagree and no one answered a strongly disagree.

9- Listening examination methods using you have 14 individuals by 46.7% answered a strongly agree, 8 individuals by 26.6% answered agree, 6 individuals by 20% answered neutral, 2 individuals by 6.7% answered disagree and no one answered a strongly disagree.

10- Using project work methods you have 10 individuals by 33.3% answered a strongly agree, 13 individuals by 43.3% answered agree, 5 individuals by 17.7% answered neutral, 2 individuals by 6.7% answered disagree and on one answered a strongly disagree.

Table (4.23): The Statistical Measures of Table (4.22)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Quizzes and exams	16.400	3	0.000	4.00	Agree
2	Oral exams	16.000	4	0.000	4.00	Agree
3	Homework and problem sets	11.867	3	0.000	4.00	Agree
4	Peer assessments	18.267	3	0.000	4.00	Agree
5	Oral report	10.267	3	0.000	4.00	Agree
6	Written reports	19.867	3	0.000	4.00	Agree
7	Presentation reports	18.200	2	0.000	5.00	A strongly agree
8	Speaking examination	15.067	3	0.000	4.50	A strongly agree
9	Listening examination	10.000	3	0.000	4.00	Agree
10	Project work	9.733	3	0.000	4.00	Agree

The Results of Table (4.23) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Quizzes and exams was (16.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Oral exams was (16.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Homework and problem sets was (11.867) with P-value (0.000) which is lower than the

level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Peer assessments was (18.267) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Oral report was (10.267) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Written reports was (19.867) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Presentation reports was (18.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Speaking examination was (15.067) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

9. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Listening examination was (10.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

10. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Project work was (9.733) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.24): Distribution of Frequencies and Percentage of Table (4.22)

Valid	Frequency	Percent
A strongly agree	165	47.3%
Agree	124	35.5%
Neutral	38	10.9%
Disagree	21	6.0%
Strongly disagree	1	0.3%
Total	349	100.0%

Table (4.25): Statistical Measures of Sum up of Table (4.22)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	349	288.350	4	0.000	4.00	Agree

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (288.350) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically. Differences.

To evaluate the students on medical English vocabulary depends on syllabus' aims, which in turn go back to medical students' needs, so in many ways the assessment is related to their performance in the workplace: Do they feel better able to perform in the situations that they identified at the start of the course as their needs? Have they learnt useful skills and language that they can use in their work? Are they more confident or sophisticated in their use of English at work? so Marsha, H. (2009. P: 10) states that:

each institution will have its own grading policy but the instructor will most likely have flexibility in how and when to test and evaluate medical students. Achieving fairness and yet making sure that the medical students are not just memorizing but also truly understanding the concepts presented can be bewildering for an instructor. Homework should be assigned on a regular basis. Worksheets, review sections of the text book, written reports, and internet research projects all make great homework. Quizzes should be given no less than once per chapter or system. They can include matching, multiple choice, fill-in-the-blank, and deconstructing terms. Combining several of these styles of questions keeps the students interested in the test. Test at mid-term and a final exam are valuable to evaluate how well a student has assimilated the materials. Quizzes and tests are effective ways to assess them.

4.4 Students' Questionnaire

Table (4.26): Reliability and Validity test

Test	Reliability	Validity	Interpretation
Value	0.79	0.89	Very effective

The values of reliability (0.79) and validity (0.89) this implies that the phases in study are more consistency relating to the hypothesis of the study which indicate that a questionnaire is characterized by high validity and high reliability also to achieve the purposes of the study and makes a statistical analysis fit and acceptable.

4.4.1 Personal information

Table (4.27): Sex

Sex	Frequency	Percentage %
Male	31	31
Female	69	69
Total	**100**	**100**

Table (4.27) shows the number of respondents in sample according to sex, it was found that 31% males in a sample while the number of females reached 69 individuals with 69% this means the female in sample more than half.

Table (4.27) shows that the most of sample study were female because female at Faculty of medicine were more than men.

Table (4.28): Age Group

Age group	Frequency	Percentage %
16 up to 20	60	60
21 up to 25	38	38
26 up to 30	2	2
Total	**100**	**100**

Table (4.28) shows the number of respondents in sample for the age group, it was found that 60% of individual have aged from 16 up to 20 years old, and 38% of individuals have aged from 21 up to 25 years old, two individuals with 2% have aged from 26 up to 30.

Regarding Table (4.28) that explain the age group of respondents, most of them are in normal age from (16 up to 20), but the age range from (62 up to 30), they may be repeaters because some academic problems.

Table (4.29): Accommodation

Type of Accommodation	Frequency	Percentage %
With a family	64	64
In campuses	34	34
With relatives	2	2
Total	**100**	**100**

Table (4.29) shows the number of respondents in sample for the accommodation, it was found that 64% of individuals live with the family, and 34% of individuals live in compose, two individuals with percentage 2% live with relatives.

The above table (4.29) shows (64%) of medical students live with their family that mean, they have all the means of wale fare to study hard, but those who live in compose may face some difficulties because their parents weren't with them.

Table (4.30): The Secondary School Certificate

Type of secondary school certificate	Frequency	Percentage %
Sudanese secondary school certificate	87	87
Arabian secondary school certificate	12	12
Foreign secondary school certificate	1	1
Total	**100**	**100**

Table (4.30) shows the number of respondents in sample that the student examined in which enabled him to enter the medicine faculty, it was found that 87% of individuals held Sudanese certificates, and 12% of individuals held Arabian certificates, only one individual with percentage 1% held foreign certificates.

This table (4.30) presents that the most of medical students were graduate from secondary school certificate (87%), who faced some difficulties in study English language at secondary school, but Arabian and foreign certificate they were rather good at English language because the English syllabus have well designed and recognized to meet their English language needs.

Table (4.31): Percentage he/she Earned to Enter the Faculty of Medicine

Percentage	Frequency	Percentage %
From 81% up to 90 %	8	8
More than 90%	92	92
Total	**100**	**100**

Table (4.31) shows the number of respondents in sample which Percentage he/she earned to enter the faculty of medicine, it was found that 8% of individuals earned grades ranging from 81% up to 90%, and 92% of individuals earned grades more than 90%. Graduate from high secondary school and enter Faculty of Medicine, University of Khartoum, student should earn high degree because it is the first University in Sudan, also it has governmental acceptance and private one to low grade in high secondary school.

Table (4.32): Degree he/she Earned in the English Language when you Enter the Faculty of Medicine

Degree	Frequency	Percentage %
71 up to 80	2	2
81 up to 90	5	5
91 up to 100	93	93
Total	**100**	**100**

Table (4.32) shows the number of respondents in sample which degree he/she earned to enter the faculty of medicine, it was found that 2% of individuals earned degree ranging from 71% up to 80%, 5% of individuals earned degree ranging from 81% up to 90%, and 93% of individuals earned grades ranging from 91% up to 100%.

The Table above (4.32) shows most of medical students earned excellent degree in English language when they enter Faculty of Medicine, that explain they have a good vocabulary in English language.

Table (4.33): The Hours of Practical Training Per Week

Practical hours	Frequency	Percentage %
Less than 3 hours	12	12
3 up to 6 hours	41	41
7 up to 10 hours	35	35
11 up to 14 hours	8	8
More than 15 hour	4	4
Total	**100**	**100**

Table (4.33) shows the number of hours of practical training for respondents per a week, we observe that 12% of individuals the number of hours practical training in a week is less than 3 hours, 41% of individuals the number of hours practical training in a week ranging from 3 up to 6 hours, 35% of individuals the number of hours practical training in a week ranging from 7 up to 10 hours, 8% of individuals the number of hours practical training in a week ranging from 11 up to 14 hours, and 4% of individuals the number of hours practical training in a week is more than 15 hour.

Table (4.33) explains that most of medical students' study (47%), work from 7 up to 15 hours per week, as states by Robert, C. (2013. P:9)

> *"studying medicine comes with a certain expectation to work harder on average than most other students. There are generally more contact hours than other subjects with practical and lectures taking up a great deal of time. Of course it's not just the contact hours when you are working: lecture notes need to be read over, essays have to be writing, practical should be prepared for and keeping on top of it all can be a challenge. This is especially the case as your work load will vary from week to week."*

Table (4.34): Factors that Help Medical Students to Learn Vocabulary at the Faculty of Medicine

No	Statement	A strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Learning medical vocabulary helps you to development of English language skills	29	40	9	20	2
2	Medical language doubality between Latin and Greek language helps you to understanding the medical vocabulary	11	31	30	20	8
3	English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary	10	26	7	26	31
4	The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied	9	13	16	37	25
5	The length of time sufficient to cover the English language course	5	23	35	23	14

6	To be a study in the first year of medical school English Language only for medical purposes	29	30	11	18	12
7	The study of medical English in the first year help you to understand the other medical syllabus	39	45	8	6	2
8	The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary	7	25	25	25	18

Table (4.34) illustrates the views of respondents about the phrases that belong to the Factors that help them to learn vocabulary medical student at the faculty of Medicine, where we note the respondent's answers on statements were as follows:

1. Learning medical vocabulary helps you to development of English language skills: you have 29 individuals by 29% answered strongly agree, 40 individuals by 40% answered agree, and 9 individuals by 9% answered neutral, 20 individuals by 20% answered disagree 2 individuals by 2% answered strongly Disagree.

2. Medical language duality between Latin and Greek language helps you to understanding the medical vocabulary: you have 11 individuals by 11% answered strongly agree, 31 individuals by 31% answered agree, and 30 individuals by 30% answered neutral, 20 individuals 20% answered disagree 8 individuals by 8% answered strongly disagree.

3. English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary: you have 10 individuals by 10% answered strongly agree, 26 individuals by 26%

answered agree, and 7 individuals by 7% answered neutral, 26 individuals by 26% answered disagree 31 individuals by 31% answered strongly disagree.

4. The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied, which 9 individuals by 9% answered strongly agree, 13 individuals by 13% answered agree, and 16 individuals by 16% answered neutral 37 individuals by 37% answered disagree, and 25 individuals by 25% answered strongly Disagree.

5. The length of time sufficient to cover the English language course: you have 5 individuals by 5% answered strongly agree, 23 individuals by 23% answered agree, and 35 individuals by 35% answered neutral, 23 individuals by 23% answered disagree, 14 individuals by 14% answered Strongly Disagree.

6. To be a study in the first year of medical school English Language only for medical purposes, only 29 individuals by 29% answered strongly agree, 30 individuals by 30% answered agree, and 11 individuals by 11% answered neutral, 18 individuals by 18% answered disagree 12 individuals by 12% answered strongly Disagree.

7. The study of English in the first year help you to understand the other medical syllabus: you have 39 individuals by 39% answered strongly agree, 45 individuals by 45% answered agree, and 8 individuals by 8% answered neutral 6 individuals by 6% answered disagree, 2 individuals by 2% answered strongly Disagree.

The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary: 7 individuals by 7% answered strongly agree, 25 individuals by 25% answered agree, and 25 individuals by 25% answered neutral, 25 individuals by 25% answered disagree, 18 individuals by 18% answered strongly Disagree.

Table (4.35): Statistical Measures of Table (4.34)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Learning medical vocabulary helps you to development of English language skills	46.300	4	0.000	4.00	Agree
2	Medical language doubality between Latin and Greek language helps you to understanding the medical vocabulary	22.300	4	0.000	3.00	Neutral
3	English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary	23.100	4	0.000	2.00	Disagree
4	The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied	25.000	4	0.000	2.00	Disagree
5	The length of time sufficient to cover the English language course	25.200	4	0.000	3.00	Neutral
6	To be a study in the first year of medical school English Language only for medical purposes	16.500	4	0.000	4.00	Agree
7	The study of medical English in the first year help you to understand the other medical	82.500	4	0.000	4.00	Agree

	syllabus					
8	The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary	12.400	4	0.000	3.00	Neutral

The Results of Table (4.35) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Learning medical vocabulary helps you to development of English language skills was (46.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Medical language doubality between Latin and Greek language helps you to understanding the medical vocabulary was (22.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary was (23.100) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied was (25.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The length of time

sufficient to cover the English language course was (25.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences**.**

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement to be a study in the first year of medical school English Language only for medical purposes was (16.500) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The study of medical English in the first year help you to understand the other medical syllabus was (82.500) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences**.**

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary was (12.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.36): Distribution of Frequencies and Percentages of Table (4.34)

Valid	Frequency	Percent
A strongly agree	**139**	**17.2%**
Agree	**233**	**28.8%**
Neutral	**141**	**17.4%**
Disagree	**175**	**21.6%**
Strongly disagree	**122**	**15.1%**
Total	**810**	**100.0%**

Table (4.37): Statistical Measures of Sum up of Table (4.34)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	810	48.025	4	0.00	3.00	Neutral

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (48.025) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table number (4.34), points the main Factors that help medical students to learn vocabulary medical student at the faculty of Medicine, the medical students that their views of a strongly agree and agree through the following statements includes:

1- (84%) to statement of study medical English in the first year help you to understand the other medical syllabus, Jeremy, D. (1991) mentioned that the study of language for specific purposes has had a long and interesting history going back, since the 1960s ESP has become a vital and innovative activity within the teaching of English language as a foreign or second language movement.

2- (69%) to statement of Learning medical vocabulary helps you to development of English language skills

To helps you to understanding the medical vocabulary, Tony, G. (2007) states that

"Oxford English for careers is a new, up to date course where
you learn what you need to know for a career in medicine.

a) *Learning English you need to do the job.*

b) *Practice language in real work situations.*

c) *Learn specialist vocabulary on every page.*
Medicine English gives you the language, information, and
skills you need to start your career".

3- (59%) to statement to be a study in the first year of medical school English Language only for medical purposes, Jeremy, D. (1991) mentioned that The most obvious question to ask when choosing a course book is " Does it cover my learners needs? things to look out for include:

a) Listening exercises of realistic situational dialogues in which professionals are doing their joins.

b) Step- by- step guidance for learners on how to cope in similar situation.

c) Guidance on how to use the model texts to inform the learners' own writing.

d) Grammar syllabus.

e) List of vocabulary.

Medical students' view toward disagree and a strongly disagree to following statements

4- (62%) to the statement of The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied (Pauline, R. 1991) said that: thus a truly specific EAP course would be specific to a department or even a lecture of a particular faculty in a particularly university.

5- (57%) to statement of English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary. Pauline, R. (1991. P:102) states that

> *"Obviously, before an EAP course is set-up or a text book or course book written, some sort of needs analysis should be carried out. However, it is often difficult to ensure that all the students in a class are following the same academic discipline."*

The interesting and significant that so much of concentrated on the procedures of ESP and on relating course design to learners' specific needs.

6- (43%) to statement The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary, the atmosphere of medical classroom unsuitable because the number of medical students are 400.

7- (37%) to statement The length of time sufficient to cover the English language course. Jeremy, D. (1991. P:11) states that

> "How long is a piece of string for a teacher new to ESP the advice would be as detailed as possible (time and resource permitting) The more experience you have, the better you will be able to make decisions about the length and the amount of detailed a need analysis requires."

8- (28%) disagree and a strongly disagree to statement Medical language doubality between Latin and Greek language helps you to understanding the medical vocabulary. Pam, P. (2005) mentioned that: Medical terminology is based mainly on Greek and Latin words. It is consistent and uniform throughout the world. It is also efficient, although some of terms are long, they often reduce an entire phrase to a single word. The medical vocabulary is vast, and learning it m The curriculum of English language is comprehensive skills, which contain medical vocabulary proportion with the goals set plan, which studied ay seem like learning the entire vocabulary of a foreign language. Moreover, like the jargon that arisen in all changing fields, it is always expanding.

Table (4.38): Ranking from 1 up to 10 in Order the Main difficulties in learning medical English vocabulary

	Item	1	2	3	4	5	6	7	8	9	10
1	Root of words	**24**	12	11	5	7	11	7	5	12	6
2	Suffixes and prefixes frequently used	4	3	6	10	**18**	15	11	17	13	3
3	Irregular plural	4	10	3	12	14	15	**22**	14	6	0
4	Collection of words	7	8	16	11	**18**	9	10	10	9	2
5	Synonym of words	3	15	16	**19**	6	13	9	9	7	3
6	Speaking with people	**35**	10	10	7	4	7	3	9	8	7
7	Formation of grammatical sentences	6	9	10	9	7	10	12	14	**16**	7

8	Medical communication of words	6	**16**	8	7	14	9	10	11	14	5
9	Word with multiple meaning	7	12	**19**	16	8	8	10	7	11	2
10	Otherwise	5	5	4	3	4	3	5	2	4	**65**

For the important difficulties in learning medical vocabulary; for the Root of words most respondents take it rank (1) with 24% and 12% of them take it rank (2) and rank (9) respectively. For Suffixes and prefixes frequently used most respondents take it rank (5) with 18% and rank (8) with 17% respectively. For the Irregular plural most respondents take it rank (7) with 22%. For the Collection of words most respondents take it rank (5) with 18%. For the Synonym of words most respondents take it rank (4) with 19%. For the Speaking with people most respondents take it rank (1) with 35%. For the Formation of grammatical sentences most respondents take it rank (9) with 16%. For the Medical communication of words most respondents take it rank (2) with 16%. For the Word with multiple meaning most respondents take it rank (3) with 19%. For the Otherwise most respondents take it rank (10) with 19%.

Considering Table (4.38) the majority of medical students ranked:

1- (65) To otherwise of difficulties in medical terminology, may they have many complicated problems with medical vocabulary as Nichole, F. (2012) said that understanding the importance use and history of medical terminology can seem complex and difficult to understand. Although these terms may seem intimidating, they can decipher and understood if you know what to look for. Medical terminology words are constructed in parts to break down the words into simple parts.

2- **(35) difficulties of speaking with people.**

3- Speaking a way to communicate but it is always verbal saying things to each other. A lot of medical students' biggest difficulty is speaking English, especially in vocabulary that sometimes when you are speaking English, you have a sentence in mind, but you're missing two or three important

vocabulary words- and then it becomes difficult to say what you're thinking.

Some Solutions

-Learn more vocabulary words but there's a good way and a not – so- good way to learn new words. The not – so – good way is to read lists of words and definitions and try to memorize them.

-A good way is to learn words in "families"

- Create conversations and write them down in your vocabulary note book. This will help you learn useful words that are all related to each other.

3- (24) Difficult of Word Root

The most important word-learning strategy, using word parts is a close second (William, N. and Richard, A. (1994 P:110-111) state that,

> *"more than 60% of new words that readers encounter has relatively transparent morphological structure- that is, they can be broken down into parts". Once words are broken into parts, students can use their knowledge of word parts to attempt to deduce their meanings- if they understand how words parts function. There are three sorts of word parts to consider: prefixes, suffixes, and non- English roots.*

4- (22) to Irregular Plural: Forming proper plurals of medical words is one of the more challenging aspects of medical transcription. The problem is exacerbated by the fact that even dictating physicians frequently have difficulty with plurals. They cannot always be counted on dictate the correct plural forms. This pushes the burden of identifying and transcribing the proper plural straight back on the transcriptionist. (Meditec.com)

5- (19) Difficult of Word with Multiple Meaning

In addition to learning to use context cues, word parts, and various types of dictionaries, medical students will profit from having some plans for what to do when they encounter an unknown word as they are reading. Here are the

steps for the strategy as you might initially list them on an overhead or the board.

a) Recognize that an unknown word has occurred.

b) Decide whether you need to understand it to understand the passage.

c) Attempt to infer the meaning of the word from the context surrounding it.

d) Attempt to infer the meaning looking for word parts.

e) Attempt to sound out the word and see if you come up with a word you know.

f) Use a dictionary, glossary, or another person for meaning. William, N and Richard, A. 1994)

6- (19) Difficult of Synonym Words

Word formation of medical terminology can be divided into three parts prefixes, word roots and suffixes; therefore, medical vocabulary has complicated synonyms. Logan, R. (2014) said that Because, outside of very restricted technical vocabularies, there is no such thing as a perfect synonym. Sometimes it may be a matter of showing off and stroking the writer's own ego over his voluminous vocabulary, but that motivation has been overblown. There are plenty of other valid reasons to choose a rarer or more complex word over a more common or simple word:

7- (18) Difficult of Collocation

Collocations and Non-native Speakers: Collocations usually represent a huge problem to non-native speakers due to interference with their mother tongue. The creation of a term collocation competence and insisted on acquiring not just the total meaning of a word, but also its collocation span. Collocation competence was also emphasised by some other researchers. They think it contributes to better understanding of difficulties encountered by language learners. The importance of acquiring collocations in language teaching has been particularly emphasised in the last two decades. Researchers have also shown that mistakes in collocations are the most frequent mistakes made by non-native speakers.

8- (18) to Difficult of Frequent Use of Prefixes and Suffixes

The fundamental unit of each medical word is the root. This establishes the basic meaning of the word and is the part to which modifying prefixes and suffixes are added. Prefixes do not normally require further modification to be added to a word root because the prefixes normally end in a vowel or vowel sound, although in some case they may assimilate slightly and an in-may change to im-or syn-to sym.

Suffixes are categorized as either a) needing combining form, b) not needing the combining form since they start with a vowel. (Wikipedia, 2016).

9- (16) Difficult of Medical Communication of Words

Al though you are unlikely to be able to write informatively about your subject area or academic field without using key technical terms, equally you will probably not be able to communicate key technical concepts effectively without using another category of words. Pauline, R (1991).

10- (16) Difficult of Formation of Grammatical Sentences

A sentence is the largest grammatical unit in language. It communicates a complete thought –an assertion, question, command, or exclamation. In general, assertions and question- the over whelming majority of sentences- require a subject and a verb, put together in a way that can stand alone, resulting in what is called an independent clause. Kim, B. (2001).

Table (4.39): Ranking from 1 up to 4 According to the Most Important Purposes Involving the Use of Medical English Vocabulary

Purpose	Ranking			
	1	2	3	2
Disease	**48**	20	16	16
Patient's case	15	**29**	29	27
Medical Procedures	14	30	**34**	22
Dealing with medical staff	24	20	21	**35**

Table above (4.39) shows the ranking of the respondents in terms of importance more purposes using the medical vocabulary, where we note that the disease was ranked first by 48%, and secondly the patient's status by 29%, and thirdly ranked for medical procedures by 34%, while the fourth place occupied dealing with the medical staff by 35%, this is from the perspective of the respondents. But in percentage terms was a rank as follows: Disease - dealing with the medical staff - medical procedures and the patient's status.

1- Diseases: Firstly, Most of medical students (48), ranked number one to diseases. The importance of understanding medical terminology, allows an understanding of diagnosis and procedures knowledge. Also it allows the healthcare professionals to understand why the patient is in the hospital and how they are being treated. Helps in treating patients part is reading documentation and discussing issues with other clinicians (www.ehow.com).

2- Medical staff: secondly medical staff was ranked by (35), Medical terminology is the language used by healthcare professional including doctors, medical transcriptionists, nurses and medical assistants. Medical terminology allows health care professional to communicate precisely and effectively.(artipot.com).

Workers in the medical field who are not familiar with medical terms will be lost with their jobs and even has medical terms are used to accurately describe the condition of the patient and the treatment that he needs to undergo. Without proper training knowledge with terminology, the communication between healthcare worker may get confusion and the patient might not get the proper treatment at the end. Crandice, M. (2013).

3- Thirdly, **medical procedure**, (34). Medical terminologies are universal to the healthcare or medical industry. It's their very own language and it helps them understand completely what is happening or what has to be done to help a patient. This language is not just limited to doctors, nurses, and / or medical practitioners as it is important for other workers in the healthcare industry to master it well- they may include medical billers, medical coders, medical assistants and more (Crandice, M. 2013).

Medical terminology allows doctors and other healthcare professionals to describe symptoms, and condition in precise terms. Using medical terminology save time and reduce misunderstandings among healthcare professionals. Allan, T. (2009)

4- **A patient's case**: (29) Patients come in different shapes and size, they also speak many different language. Whether you are working abroad or at home, there will come a time when toy need to rely on English to communicate. Learning some Basic English expressions and vocabulary related to medical field, will enhance the study and practice of medical English that will be able to make patients feel more comfortable, and have a better understanding of their needs, and communicate with other medical staff who speak English.

Avoid errors: not properly communicating or documenting medical records of a patient may get them in trouble and even bigger health risk. Medical terms help describe the medical history of a patient through medical records and these records tell other healthcare professional details that can help them diagnose the patient more accurately and provide the right treatments. (English club.com).

Table (4.40) :What are Specific Skills do you Need Encounter English Language Curriculum for Development your Medical English Vocabulary

No	Statement	Strongly agree	Agree	Neutral	Disagree	A Strongly disagree
1	more reading practice	48	30	19	4	0
2	Get new medical vocabulary and the correct use	39	52	7	2	0
3	English grammar skill	25	35	19	20	1
4	Writing skill	34	44	15	7	0
5	Listing skill practice	62	34	4	0	0
6	Speaking skill practice	72	25	3	0	0

Table (4.40) showed the views of respondents about the phrases that belong what are specific skills do you need encounter the curriculum of the English language for development your abilities in learning medical vocabulary, where we note the respondent's answers on statements were as follows:

1. More reading practice: you have 48 individuals by 48% answered strongly agree, 30 individuals by 30% answered agree, and 19 individuals by 19% answered neutral, 4 individuals by 4% answered disagree, no individual answered strongly Disagree.

2. Get new medical vocabulary and the correct use: you have 39 individuals by 39% answered strongly agree, 52 individuals by 52% answered agree, and 7 individuals by 7% answered neutral, 2 individuals by 2% answered disagree, no individual answered strongly Disagree.

3. English grammar skill: you have 25 individuals by 25% answered strongly agree, 35 individuals by 35% answered agree, and 19 individuals by 19% answered neutral, 20 individuals by 20% answered disagree, one individual by 1% answered strongly disagree.

4. Writing skill, which 34 individuals by 34% answered strongly agree, 44 individuals by 44% answered agree, and 15 individuals by 15% answered neutral 7 individuals by 7% answered disagree, and no individual answered strongly Disagree.

5. Listing skill practice: you have 62 members by 62% answered strongly agree, 34 individuals by 34% answered agree, and 4 individuals by 4% answered neutral, no one answered disagree, or Strongly Disagree.

Speaking skill practice, only 72 individuals by 72% answered strongly agree, 25 individuals by 25% answered agree, and 3 individuals by 3% answered neutral, no one answered disagree, or Strongly Disagree.

Table (4.41): Statistical Measures of Table (4.40)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	more reading practice	40.822	3	0.000	4.00	Agree
2	Get new medical vocabulary and the correct use	71.120	3	0.000	4.00	Agree
3	English grammar skill	30.600	4	0.000	4.00	Agree
4	Writing skill	34.640	3	0.000	4.00	Agree
5	Listing skill practice	50.480	2	0.000	5.00	Strongly agree
6	Talking skill practice	74.540	2	0.000	5.00	Strongly agree

The Results of Table (4.41) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement: more reading practice was (40.822) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically significant between the responses of individuals in study and for those how were agree that the more reading practice.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement: Get new medical vocabulary and the correct use was (71.120) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically significant between the responses of individuals in study and for those how were agree that the Get new medical vocabulary and the correct use.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement English grammar skill was (30.600) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically

significant between the responses of individuals in study and for those how were agree that the English grammar skill.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Writing skill was (34.640) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically significant between the responses of individuals in study and for those how were agree that Writing skill.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Listing skill practice was (50.480) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of differences statistically significant between the responses of individuals in study and for those how were strongly agree that the Listing skill practice.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Talking skill practice was (74.540) with P-value (0.002) which is lower than the level of significant value (5%) These refer to the existence of differences statistically significant between the responses of individuals in study and for those how were strongly agree that Talking skill practice.

Table (4.42): Distribution of Frequencies and Percentages of Table (4.40)

Valid	Frequency	Percent
A strongly agree	280	46.6%
Agree	220	36.6%
Neutral	67	11.1%
Disagree	33	5.5%
Strongly disagree	1	0.2%
Total	**601**	**100.0%**

Table (4.43): Statistical Measures of Sum up of Table (4.40)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	601	500.323	4	0.00	4.00	Agree

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (500.323) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences**.**

1- Speaking skill practices (97%)

Communication skills

Other than the doctor's scientific specialty, communication may be the most important skill for a doctor. Doctor's work all day with patients from all walks of life and ages, asking them questions about their health and then explaining their diagnoses and treatment plans in terms the patients can understand.

Verbal Communication

Verbal communication is the sharing of information among individuals or groups through speaking. At work, it is one of the ways we interact with our bosses, employees, co-workers and customers or clients. When people do not verbally convey messages well, intended recipients of those messages are at risk for misunderstanding them. They are likely to take improper actions in response. While these failures do not rest solely with the speakers—poor listening skills or the misreading of non-verbal cues may also be to blame— that is where it begins.

How to Improve Your Verbal Communication Here are some things you can do before and during your conversation to avoid misunderstandings between you and the recipient of your message:

1. Be prepared: Figure out what information you want to provide and decide on the best way to relay it to your recipient.

2. **Speak clearly:** If you mumble or speak too quickly, it will be difficult for others to understand what you are saying.

3. **Use language your recipient can easily comprehend:** If you use words your recipient doesn't understand, your message will be lost.

4. **Use proper tone:** Use your voice to show your feelings but be careful not to get too emotional. Doing that could distract from what you want him or her to take away from the conversation.

5. **Make eye contact:** It will be easier for the person to whom you are speaking to connect with you if you maintain eye contact while you are speaking, as well as when you are listening.

6. **Check in with the listener to make sure he or she understands you:** Get feedback from the person with whom you are speaking if you can want to make sure he or she "gets" what you are trying to say. You can do this by observing facial expressions and body language, or by asking for confirmation.

7. Avoid distractions: Background noise will distract your listener and make it tough for him or her to hear what you are saying, never mind, understand it. Try to find a quiet place to talk. If you are speaking to someone by phone, go to a quiet area and make sure he or she is in one as well. If not, arrange to have a conversation at another time. (Secretary's Commission on Achieving Necessary Skills). 1991.

2. Listening Skill Practices (96%)

Become an Active Listener and Improve Your Workplace Performance

While hearing is a physical ability—actually one of our five senses—listening is a skill. It is possible to have one but not the other. Someone who is hearing impaired can be a great listener if he or she pays attention to the information someone conveys despite the fact that they can't use their sense of hearing to

receive the message. Likewise, someone with very sharp hearing can be a poor listener. In 1991 the United States Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) identified five competencies and three foundation skills that are essential for those entering the workforce. Active listening is one of those foundation skills. It is also a soft skill, which is a character trait or personal quality that an individual is either born with or can acquire through educational, work, or life experiences. Listening skills allow people, regardless of how they take in information, to make sense of what others are saying. To put it in the simplest terms possible, they allow you to understand what someone is "talking about." Imagine what being an active listener can do for you at work?

How Good Listening Skills Can Improve Your Performance at Work

Good listening skills will help make you a more productive worker. They will allow you to:

- Better understand assignments and what your boss expects of you;
- Build rapport with coworkers, bosses, and clients since everyone craves to be understood;
- Show support for others;
- Work better in a team-based environment;
- Resolve problems with customers, coworkers, and bosses;
- Answer questions; and
- Uncover the true meaning of what others are saying.

How to Be an Active Listener *and* Look Like One

Many people aren't born with good listening skills. Even those who are great listeners sometimes engage in behaviors that make them appear not to be paying attention. The following tips will help you learn how to be an active listener, as well as look like one:

- **Maintain Eye Contact:** When you are looking someone in the eye, you have no choice but to pay attention. And there will be no question about whether you are doing so.

- **Don't Interrupt the Speaker:** Save your questions and comments until the speaker finishes talking and you can digest his or her words.
- **Sit Still:** Fidgeting makes you look bored.
- **Nod Your Head:** This indicates to the speaker that you are taking in the information he or she is conveying.
- **Be Attentive to Non-Verbal Cues:** Paying attention to what the speaker doesn't say is as important as being attentive to his or her words. Look for non-verbal cues such as facial expressions and posture to get the full gist of what information the speaker is conveying.
- **Lean Toward the Speaker**: You will appear to be, and actually will be, engaged.
- **Repeat Instructions and Ask Appropriate Questions:** Once the speaker has finished talking, repeat his or her instructions to confirm that you understand them. This is also a good time to ask questions if you have any.

3- Increasing and How Using of New Medical Vocabularies (91%)

Robert, C. (2013) Studying medicine brings you up to date with the latest medical research; it is a great opportunity to be brought very close to the frontier of current scientific knowledge, beyond what you will find in textbook. Your lecture is all actively involved in their field of interest and such it is part of their job to stay up to date with all the latest advances and studies that are going on in that area. Therefore, they can teach things well before they are published in textbook and make you aware of very up – to – date and relevant research papers. The reason of Medicine course is so long is because of the volume of material that needs to be learned; both the basic scientific principles and the clinical skills needed to apply them must be taught.

Scientific Skills

Doctors are healthcare workers who treat and assist patients with a variety of problems. The skills needed to work as a doctor are reflected through the amount of time doctors spend in school learning about the human body. However, there are other skills important to doctors that allow them to excel in

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their specialty. Doctor's must be skilled in science, diagnosis and treatment. During medical school and the doctor's undergraduate career, he or she should focus on the human sciences, such as biology, human anatomy and biochemistry, all of which are necessary to understand the job requirements of being a doctor. The skills learned in these sciences are the core to understanding diagnosis and treatment. Diagnosing a patient involves understanding the symptoms exhibited and putting them together to understand what is wrong with the patient internally. The doctor may then treat the patient. Treatment involves providing the correct recommendations to a patient, including medicine, referral to another doctor, and surgery. (Meditec.com).

4- Reading Skill Practice (87%)

Reading is probably the most generally needed skill in EAP worldwide. An important question is how far success in reading is helped by practice in the other language skills. Activation of knowledge of the language through writing and speaking can feel back into reading. However, very often there is too little time on a course to do more than focus on (silent) reading and little motivation to do so. A second issue in EAP reading is how far knowledge of the topic can compensate for linguistic difficulties in reading a text.Pauline, R. (1991).

5- Writing Skill (78%)

Five Things You Need When Writing in the Medical Field

Want to be a medical writer? In this field of writing, you'll need a very different approach from what you're probably used to, as it puts a heavy focus on efficiency and format to the point that some folks talk of it as "assembly-line" writing.

What things will you need in order to keep up as a medical writer?

1. An ability to accurately use language. Stating a scientific finding in ways that can be interpreted in more than one manner is absolutely undesirable for a medical writer. You need to be precise and exacting in your use of words, using your writing software as potential reference.

2. A working knowledge of general developments in medicine as an industry. The more you know in the field, the better you can understand the subjects you need to write about. As such, it's important to both have a knowledge background in medicine, as well as a thirst for keeping up with current developments.

3. A strong grasp of regulatory limits, with regards to what you can write and to what extent. National and international agencies regularly police what's written about medical products, as any misleading claims can lead to serious consequences. Know the regulatory jurisdictions that dictate the language you can use.

4. A skill for conveying normally confounding medical-speak into plain language regular people can understand. Medicine is a technical field and, as such, is filled with the jargon and technical language used by its professionals. Being able to convey the same meaning using language regular people can understand is an ability every good medical writer should develop. (www.write English.org.com).

6- English Language Grammar (60%)

There are a lot of grammar rules in the English language, and medical words complicate things even more! Fortunately, there are many resources to help Medical Transcriptionist/Healthcare Documentation Specialists.

Table (4.44): in my Opinion English Course is

No.	Statement	Yes	No
1	Subject learning objectives are clear	46	54
2	The subject is well organized	39	61
3	The subject stimulates my interest to learn more	39	61
4	The subject is relevant	38	62
5	Feedback about my work is helpful	60	40
6	Grading criteria are fair	44	56
7	I am achieving the subject learning objectives	46	54

From above table (4.44), with regard to their opinion English course about statement: Subject learning objectives are clear 46 answered yes and 54 answered No, 61 answered No for the statement The subject is well organized and 39 answered **yes.** The subject stimulates my interest to learn more 61 answered No and 39 answered **yes.** The subject is relevant 62 answered No and 38 answered **yes.** Feedback about my work is helpful 60 answered yes and 40 answered No. Grading criteria are fair 44 answered yes and 56 answered No. I am achieving the subject learning objectives 46 answered yes and 54 answered No.

The opinions of medical students about the evaluation of English course that they had taken in three semesters: firstly, they said the subject isn't relevant (62%), subject isn't well organized by (61%) of medical students, also they stated that, the subject doesn't stimulate my interest to learn more (61%) of them, (54%) for both the medical students weren't achieving the subject learning objectives, and subject learning objective aren't cleaner to them. But the most of medical students (60%) of them see that the feedback of their work is helpful, this explain they were understand their English course very well. Also majority of medical students (56%) stated that grading criteria were un fair, may be English course that they had studied was un satisfied to meet their needs to develop English language skills.

It is clearly that medical students at Faculty of Medicine, Khartoum University, have many problems with English syllabus and it didn't cope with their needs in English language skills, because they were studied course named (BRIDGING THE GAP) at first year in semester one and two, the credit hour was (30), and semester two (30) hours. The Theme of course contents are 1-Man and Women, 2-Reality, 3-Like Father, 4-Environment, 5-Education, 6-Famous People, 7-Sports, 8-Food, 9-Ozone, 10-Tourism. English skills used in this course were Reading, Vocabulary, Grammar, Speaking, and Writing.

In the second year they were taught general topics in medial English in first semester, the duration of course is (30) hour, e.g. Past medical history, Anatomical and English terms, receiving a patient, Medical examination and

Breaking bad news, with contact hours 20 for lecture and 10 for practical, and credit hours 12 for lecture and 3 hours for practical.

When comparing this English course with another English course that were taught in University of Tabuk, Kingdom Saudi Arabia (Oxford University's Syllabus), so medical terminologies are prerequisite course, all medical students interested in clinical aspect of medicine will need a good basic understanding of medical terminology early in his or her program. In this case, further, more intensive studies of anatomy and physiology will be needed. However, giving the students an early connection with the terminology and anatomy and physiology will allow the students to get a jump start on these courses. The motivation of this student may be to get through the course and on to more "exciting" classes. The instructor must be able to help the student understand that terminology is a necessity for additional learning. To accomplish this, an instructor must use teaching skills that emphasize the connection between terminology and clinical medicine. Keeping the attention of this particular student can be difficult. That is why varying one's style of instruction becomes critical. Marsha, H. (2009).

Table (4.45): The Most Effective Strategies for Teaching and Learning Medical English Vocabulary

Type of strategy	Very effective	Effective	To some effective	Not effective	Not at all effective
1-Self-study	19	**35**	33	10	3
2-In-class group discussion	**48**	40	6	4	2
3-Prepare lecture notes	28	**48**	19	3	2
4-Team project	31	**41**	19	8	1
5-Memory	28	**39**	25	6	2
6-Cgnitive	16	33	**38**	13	0
7-Critical thinking	21	**37**	22	19	1
8-Visual and auditory activities	**57**	34	8	1	0

9-Humor in the class	30	**35**	25	8	2
10-Stimulations	30	**39**	29	2	0
11-Online course	15	27	**40**	13	5
12-Online dictionary or printed dictionary	**34**	29	25	11	1
13-Coures book	20	**40**	29	9	2
14-Research and renew my information	28	**43**	24	4	1
15-Context lesson	13	**53**	30	4	0
16-Simple dialogue	32	**38**	24	6	0

On your opinion what are the effectiveness of teaching and learning strategies of medical vocabulary:

Self-study 35% effective. In-class group discussion 48% very effective. Prepare lecture notes 48% effective. Team project 41% effective. Memory 39% effective. Cognitive 38% to some effective. Critical thinking 37% effective. Visual and auditory activities 57% very effective. Humor in the class 35% effective. Stimulations 39% effective. Online course 40% to some effective. Online dictionary or printed dictionary 34% very effective. Course book 40% effective. Research and renew my information 43% effective. Context lesson 53% effective. Simple dialogue 38% effective.

Table (4.46): Statistical Measures of Table (4.45)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Self-study	39.200	4	0.000	4.00	Effective
2	In-class group discussion	98.000	4	0.000	4.00	Effective
3	Prepare lecture notes	73.100	4	0.000	4.00	Effective
4	Team project	53.400	4	0.000	4.00	Effective
5	Memory	48.500	4	0.000	4.00	Effective

6	Cognitive	18.320	3	0.000	3.00	To some effective
7	Critical thinking	32.800	4	0.000	4.00	Effective
8	8-Visual and auditory activities	78.800	3	0.000	5.00	Very effective
9	Humor in the class	40.900	4	0.000	4.00	Effective
10	Stimulations	30.640	3	0.000	4.00	Effective
11	Online course	37.400	4	0.000	3.00	To some effective
12	Online dictionary or printed dictionary	37.200	4	0.000	4.00	Effective
13	Course book	46.300	4	0.000	4.00	Effective
14	14-Research and renew my information	61.300	4	0.000	4.00	Effective
15	Context lesson	55.760	3	0.000	4.00	Effective
16	Simple dialogue	23.200	3	0.000	4.00	Effective

The results of table (4.46) Interpreted as follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Self-study was (39.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement In-class group discussion was (98.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Prepare lecture notes was (73.100) with P-value (0.000) which is lower than the level of

significant value (5%) These refer to the existence of statistically differences

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Team project was (53.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Memory was (48.500) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Cognitive was (18.320) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Critical thinking was (32.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Visual and auditory activities was (78.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

9. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Humor in the class was (40.900) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

10. The value of chi – square calculated to signify the differe differences nces between the numbers of individuals of the study for the statement

Stimulations was (30.640) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

11. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Online course was (37.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

12. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Online dictionary or printed dictionary was (37.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

13. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Coures book was (46.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

14. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Research and renew my information was (61.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

15. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Context lesson was (55.760) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

16. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (23.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.47): Distribution of Frequencies and Percentages of Table (4.45)

Valid	Frequency	Percent
Very effective	450	28.1%
Effective	611	38.2%
To some effective	396	24.7%
Not effective	121	7.6%
Not at all effective	22	1.4%
Total	**1600**	**100.0%**

Table (4.48): Statistical Measures of Sum up of Table (4.45)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	1600	736.756	4	0.000	4.00	Effective

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (736.756) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Medical students use a lot of vocabulary learning strategies that target specific contents of medical vocabulary to acquire a deeper meaning of medical English vocabulary words. Teachers may be explain some difficulty words or list the key vocabulary for the topic or unit, but the most of medical terminology need to work through using some effective learning strategies to identify and understanding unknown or unclear medical words. Needless vocabulary is central to medical English language teaching because without sufficient vocabulary medical students cannot understand others or express their own ideas. As Lewis, M. (1993. P:89). States that

" *Lexis is the core or heart of language*".

Particularly as students develop greater fluency and expression in English, it is significant for them to acquire more productive vocabulary knowledge to develop their own personal vocabulary learning strategies. Also learning vocabulary help medial students master medical terminology for their purposes.

So the results of medical students' opinions about both very effective and effective strategies for understanding medical English vocabulary inorder as following:

1-Visual and auditory activities (91%)

Medical students really need to be professional absolutely have to learn the language of medicine, by honing the most effective memorization techniques and using proven resources, they can easily beers and turn learning into an effortless, even pleasant, task. (Medical institution of medical sciences and education, 2015) wrote that

1- Using visual cues to remember complex terms.

2- Practicing terms using apps for iOS and Android.

3- Deciphering terms by learning basic Latin components (roots, suffix, prefix).

4- Bulk learning using self-made acronyms.

5- Using engaging guides and work books

6- Taking free online classes.

2- In Class Group Discussion (88%)

Research has shown that the interaction with others regarding word learning will offer them the support they need Ruddell, M and Shearer, B. (2002). Therefore, teachers should carefully select students to work to gather using a mixed – grouping formats and emphasize that it is important to discuss how and why words are selected. This will benefit students who do not know how to identify words for learning. Offer time and guidance to students with special needs by providing mini-lessons on word identification skill, how to use context to guess at the meaning for word, and how to use other resources within the text such as pictures, graphics, glossaries, and diagrams.

3- Prepare Lecture Note (76%)

Do prepare lecture notes give medical students a large range of experiment as Brown, S. And Race, P. (2002). Showed that to find out what kind of notes work best for you, e.g., a detailed outline, a list of major points, a

tree diagram. The notes should include key definitions, proofs, solved problems, examples and analogies.

4- Online Dictionaries or Printed Dictionaries (73%)

Using the medical dictionary will enrich your vocabulary and deepen your understanding of the meanings and use of medical terms. Look up each new word and see what language it comes from and how it is pronounced. Do some further research and see how else this particular word is used other than the examples given in the context of medicine.

American Institute of medical sciences and Education, (2015).

5- Team Project (72%)

Team project is an organization of medical students who encourage and support the use of team-based learning in all level of medical English learning. They are continuing professional development among medical students to improve their proficiency in use appropriate medical English words and write medical assignments.

6- Research and Renew my Information (71%)

This parts are very important to medical students to enhancing medical vocabulary. (Atlanta conference on Sciences, Technology and Improving Policy. (2009). concerned and point out some recommendations to encourage medical students to build strong foundation to be main parts of the medical researchers:

1-Research and renew information bringing together large data sets of medical data and tools to analyze this data offers the potential to expand the research capabilities of doctors. Medical researcher can use this vast source of biological and clinical data to discover new treatments and better understand illness and diagnosed.

2-Applying informatics to health care creates the possibility of enabling "rapid learning" health applications to aid in biomedical research, effectiveness research.

3-Using rapid learning techniques cannot only improve patient safety, it can also lead to substantial improvements in the quality and cost of care.

7- Simple Dialogue (70%)

English dialogues can be used in a wide variety of situations for learners. Dialogues are useful in a number of ways.

- Dialogues provide models on which students can base their own conversations.

- Dialogues can focus in on language production in a way that allows students to practice correct usage.

- Student created dialogues can be used to encourage students' creative nature.

- Dialogues can be used as a basis for listening comprehension exercises.

Dialogues can be used in many ways in a classroom. Using dialogues in the classroom introducing new vocabulary and can help medical students become familiar with standard formulas used when discussing various medical topics.

8- Stimulations (69%)

Simulations enable students to solve real medical words problems in a safe environment and enjoy themselves while doing so. It can also be any specific event that causes someone to do something, (vocabulary.com).

Stimulation is a language learning model which allows medical students to express themselves to their peers in a group setting, groups comprising usually three or four. (See www. Languages.dk/methods/methods, html).

9- Memory (67%)

Memory technique is common use in medical terms knowledge, needless dictionaries or medical text to refer to only depend on previous medical words. As showed (g-w.com). The memory techniques for learning medical terms people use a variety of methods to help them study and remember new terms. On common technique is to make and use flash cards. Some people work with the way a word looks to help remember its meaning. Another technique is to look for familiar words share the same word part. Some

of medical students like to investigate the origins of a new word, this strategy may be used with every day English words.

10- Context Lesson (66%)

Learning medical vocabulary by using context is great and effective to develop and increase the bunnels of medical vocabulary knowledge in addition to improve the foundation of English language skills also can facilitate the medical syllabus for both teachers and medical students to understnd better medical English vocabulary, using context clues to infer the meanings of unknown words is the first word-learning strategy because it is the most important one. Most words are learned from context, and if we can increase students' proficiency in learning from context even a small amount, we will greatly increase the number of words students learn. It has a vital role to improve students with rich, sustained, and powerful instruction on using context clues. Providing such instruction takes a good deal of time and effort on the part of both teachers and students.

11- Humor in Class (65%)

Humour is different learning strategy, teachers use laughter during the lecture to change the atmosphere of class and medical students' mood, therefore humor strategy can refresh students' mind to understand more possible medical vocabulary. (Robinson, V. 1991) showed that humor and laughter have been a focus of attention in the popular media and in the media literature. The role of humor including patient-physician communication, psychological aspects o patients care, medical education, and as a mean of reducing stress in medical professionals.

12- Course Book (60%)

Good course book always develops English language skills as well as increases vocabulary contents of especially medical students that face difficulties in understanding medical English vocabulary example words roots, suffixes, prefixes so that course book can improve their abilities to understand,

read, write and communication in medical field with good medical vocabulary fluency.

There has been a research interest in defining the vocabulary size required for second language reading. A study by Hwang, K. and Nation (1995) showed that knowledge of the 2,000 most frequent word families enables L2 readers to recognize 84% of the words in various types of authentic texts. This falls well short of the 95% of words which (Laufer, B. 1991) indicated that: The needs to be recognized for unassisted reading, and which would require a minimum vocabulary size of 3,000 word families. More recently, (Laufer, B.1997. P: 20-34) suggest that

"*95% lexical threshold in L2 reading would be required to*

enable L2 readers to apply their L1 reading strategies".

13- Critical Thinking (58%)

Critical Thinking provides you with the skills to analyze and evaluate information. With these skills medical students able to obtain the greatest amount of knowledge from a piece of data. It provides the best chance of making the correct decision, and minimizes damages if a mistake does occur. (see corporate Training materials.com)

14- Self Study (54%)

When medical students depend on their own efforts to understand better medical English vocabulary, this strategy will support and improve others different learning medical terminology strategies e.g. cognitive and memory strategies. As Haggard, M. (1986. P: 634-642) emphasizes that

"*The vocabulary self-collection strategy(vss) is an interactive – learning instructional strategy that promotes word consciousness, as students are actively engaged in identifying important words from their reading to share with member of their class. Students select words from their reading that are new and interesting, use the context and other resources to determine the meaning of the words, and nominate the words to be learned by others in the group or glass.*"

15- Cognitive (49%)

Cognitive strategies are one type of learning strategy that learners use in order to learn more successfully. These include repetition, organizing new language, summarizing meaning, guessing meaning from context, using imagery for memorization. All of these strategies involve deliberate manipulation of language to improve learning. Classifications of learning strategies distinguish between cognitive strategies and two other types, met cognitive strategies (organizing learning), and social/ affective strategies (which enable interaction), e.g. a learner remembers new words by visualizing them represented in a memorable or ridiculous situation. This makes it easier and faster to recall these words. In the classroom Activities which can be described as cognitive strategies include making mind maps, visualization, association, mnemonics, using clues in reading comprehension, underlining key words, scanning and self-testing and monitoring.

(www.oxforddictionaries.com.)

16- Online Course (42%)

Online courses are important and modern technology learning strategy for understanding medical words. Some of these courses are free and give medical students certificate to verify your completion of the course. This course is designed for educational and / or informational purposes only. Online medical courses are now on iTunesU. It is easy to download courses to your iOS device or learn at your desk

Rapid learning health networks can enable doctors to better practice evidence-based medicine. Rachel, D. (2016).

4.3 An Interview Analysis

An interview part was conducted with 10 experienced teachers of both fields English language and medical in Investigating teaching strategies of medical English vocabulary   at Faculty of Medicine, University of Khartoum.

The Table No (4.49): Parts and Variables Measure of an Interview

Questions	Variable Measured
Part A	Personal information of the experienced teachers of English language and Medical fields.
Part B from question 2 up to 6	The main difficulties may face medical students for understanding medical English vocabulary.
Part C from question 7 up to 8	To what extent subject teachers aware of medical students' needs in medical English syllabus.
Part D questions 9,10,11 and 12	Optimal effective teaching and learning strategies that used for learning medical English vocabulary.

Table No (4.50): Personal Information of Experienced Teachers

Items	Departments	Sample size of teachers experienced	Experienced of teachers(per/ year)	Academic Qualifications
Faculty of Medicine	Communty medicine	1	29	p.h.D
	Physiology	2	10	p.h.D
	Biochemistry	1	16	M.S
	Obese	2	20	p.h.D
	Paediaration	2	12	p.h.D
Faculty of Arts	English language	2	7	M.A
Total		**10**	**10**	

Part A: Personal Information of the Experienced Teachers of English Language and Medical Fields

Table (4.28) shows personal information of the experienced teachers at Faculty of Medicine, University of Khartoum. This information was collected by means of answering 4 questions. It includes classified of the departments, sample size of the teachers experienced, experienced of teachers per year in teaching and their academic qualifications degrees.

As mentioned in above table, 80% from the total of the teachers were interviewed, teaching medical English in different departments e.g. Medicine, Physiology, Biochemistry, Obstritics, and Paediaration. Their experienced about (10 up to 20) years in teaching, also 10 % is master degree and 90% of them have p.h.D holders, that means they are enough qualified to good manage of optimal teaching process during medical courses and use sufficient strategies of teaching as required. In addition to 20% of sample of experienced teachers their department is English language and they taught it as a university requirement, it is clear they are enough experienced in teaching English language syllabus and they use suitable strategies of teaching and also they have good knowledge in teaching and learning specialized English vocabulary.

Part B: 1-The main difficulties encounter medical students for understanding medical English vocabulary.

This part consists of five questions (2-6). The answers of the respondents are provided and discussed as follow:

2- What are the main difficulties that encounter medical students to understand medical English vocabulary?

1- Medical students have difficulties for studying medical syllabus itself and they are using quick engine translation.

2- Medical students always depend on a brief and photo copies medical syllabus outline and they aren't using the main references.

3- students depend on their classmate who have solid foundation in English language skills to answer the assignments.

4- Some medical students have less motivation toward sciences and knowledge, and just demanded quick and brief information and they didn't use text books which has great role in building English language and medical English vocabulary.

5- Medical English language is specific language isn't general English language, therefore they encounter difficulties in pronunciation, reading, and writing.

6- Words roars of most medical English refer to Latin and Greek original, so that medical students have weakness to understand medical English vocabulary, even those the native speaker, they will find it very difficult and have the same difficulties.

7- Medical students have different English language levels, so that they are need to divide them to many groups according to their levels and needs in English language, also increase the lectures time.

8- Medical students didn't know how to use dictionaries.

9- Weakness of English language syllabus at high school.

10- Most of medical students are suffering from misunderstanding of basic frame work of English language skills at high school these may affect in their English language levels at university stage especially for understanding medical English vocabulary.

11- Large variation of English language levels among medical students at the same section make confusion to follow up.

12- Most of teachers didn't taking into consideration the basic rules of grammatical and spelling errors, they just checked medical terms as general.

13- A lot of medical students depend on computer program (Microsoft words) in their assignment task.

3- What are common difficulties of understanding medical English vocabulary that encounter teachers and medical students together?

1- Over crowded of medical students in the classroom; they are about 400 in the classroom.

2- Modern life style and technology maybe effect on their academic achievement, consequently they have less interesting and motivation to get knowledge and neglecting reading textbook, because a textbook needs more time and efforts.

3- Inappropriate physical teaching environment as multimedia, facilities etc…

4- Short length of lecture time of English language, therefore the teacher can't practice English language skills to medical students as require.

5- The most of teachers experienced didn't take into consideration weakness of some medical students in basic English language.

6- Communication skills of many teachers didn't cope with medical students' levels, during the lecture.

7- Weakness of medical students in basic English language.

8- Large number of medical students in one classroom and their difference levels in English language, so that the teachers face many difficulties to follow up.

4- What are the main problems encounter teachers to access medical English vocabulary?

1- Less of professional in English language teaching as specific language (E.A.P).

2- Most of teaching strategies used is just lecture.

3- Formulation of medical vocabulary used is based on English language.

4- Materials used for teaching English language syllabus aren't attractive and unsuitable.

5- Audiovisual means of teaching English language aren't available.

6- Weakness of some teachers.

7- Changing of students from high school to Faculty of medicine which all syllabuses teaching by English language.

8- Medical students have poor English language to understand medical English vocabulary.

9- Arabaziation system isn't applicable in Faculty of Medicine, University of Khartoum.

10- Over crowded of medical students in classroom.

The approaches to teaching can be categorized according to major educational goals that affect teaching strategies. On one hand the goal of education is viewed as the transmission of knowledge by the teachers to the students and as facilitating students' autonomous learning and self-expression. Miriam, B. (2002).

5- How can Arabaization decisions affect on English language levels of medical students since 1990?

1- Less the motivation and neglecting of learning English language.

2- Deterioration of English language

3- Medical students have hardness to cope with and continue of using English language as only one main language for teaching and learning all medical syllabus at Faculty of Medicine, University of Khartoum, because they are depending on Arabic language in learning.

4- Inability and less the power of medical students for understanding medical English vocabulary, although Arabaziation system doesn't involve Faculty of Medicine, University of Khartoum.

6- What is the impact of type of high school certificate on English language levels of medical students?

1- The types of high schools; certificate have great impact on academic knowledge especially medical English language, because they are three types of certificate in high school:

a) Sudanese certificate (the largest number of medical students, they are about 300).

b) Arabic certificate (they are about 80)

c) IG certificate (they are about 20)

Medical students who had being graduated from IG high school considering the best students for understanding medical English vocabulary, because their mother tongue is English language also they were studied good syllabus in Biology at high school.

2- Arabic certificate's students at high school have solid foundation of English language because they were studied good and attractive English language syllabus, high quality of English language teachers.

3- The most of medical students are Sudanese certificate who had poor foundation in English language that is refereed to their weakness in basic English language in high school. Therefore, English syllabus at high school isn't meet medical students' needs at Faculty of Medicine in addition to Arabization decisions doesn't work at Faculty of Medicine.

4- English language teaching in Sudan at high schools encounter many problems such as poor English syllabus used, also education system began teaching English language at grate five (too late stage).

Part C: To what extent are subject teachers aware of medical students' needs in medical English syllabus:

These parts included four questions (7-8) these questions try to answers of experienced teachers' views toward how far subject teachers aware of medical students' needs in medical English syllabus.

7- Does the English language syllabus have good outcomes for graduated medical students?

1- No, it doesn't give good outcomes because it isn't specialized in English for academic purposes (medical English).

2- No, it doesn't so that English syllabus of Faculty of Medicine need change.

3- This English syllabus is considered waste of time, not suitable at all as a university requirement.

4- English language syllabus was designed to teach as general English language, but it isn't designed as EAP English syllabus. It's objectives and addressing group aren't clear.

5- Yes, it does. This English syllabus has good outcomes and achieved the objectives of Faculty of Medicine.

6- This English syllabus needs to cross out.

8- Do medical students study Medical English language syllabus at Faculty of Medicine?

1- No, they don't. They are studied unsuitable general English language syllabus, so that they are need to change it to EAP.

2- The most medical students' opinions towards English medical syllabus, that it's unsuitable and needs to change to specific medical English syllabus.

3- English syllabus designers at Faculty of medicine are need to formulate good framework of medical English skills taking into consideration listening, writing, reading, and speaking.

4- Medical students should study medical English at the first years and developing it up to six year in advanced.

Part D: Optimal effective teaching and learning strategies that used in learning medical English vocabulary:

These parts included four questions (9, 10, 11 and 12) these questions try to answers of experienced teachers' views toward some effective teaching and learning strategies to cope with medical students' needs.

9- Are medical students used suitable learning strategies for understanding medical English vocabulary?

1- A lot of medical students used unsuitable learning strategies e.g multimedia (Google translation), but they aren't used references and textbooks.

2- Learning strategies that used by medical students are rather good, but we suggestion some records and photo copy means for leaning medical English vocabulary.

3- Most of medical students don't know medical vocabulary till at level three, so that they should study (EPA) at Faculty of medicine.

4- Medical students used unsuitable learning strategies specially towards words with multi meanings, they don't know how to use the correct synonyms in the context (they have confusing between Arabic and synonyms meanings).

10- What are sufficient teaching strategies should be adopted by Faculty of Medicine, to help medical students improving medical English vocabulary?

1- Reinsuring to build up solid foundation of medical English language skills.

2- Updating English language syllabus to cope with medical students needs in medical English language.

3- Improvement the basic English language and medical English as the same.

4- Return back to ancient English language syllabus.

5- Promotion teaching strategies and introduce attractive materials to increase medical students' motivations

6- Increasing numbers of teachers per student.

7- Studying literature in group discussion is a good way to learn English language.

8- Medical students should depend on their selves and choose more than one learning strategies for understanding medical vocabulary.

9- Encouraging medical students to scientific researches.

10- Establishing manual revision of English language syllabus.

11- Reduced the overcrowded of medical students in classroom.

12- considering rules that care of medical students' creative and expression freedom.

11- What are the most effective strategies that medical students used for learning medical English vocabulary?

1- Group discussion, using dictionary, Self-search, Depend on teacher, Using medical dictionaries, Internet (Google translation), Using audio dictionaries, Direct asking their colloquies, Using synonyms.

Words that are new to medical students in case that represent as familiar concepts can be addressed using a number of relative quick instructional tactics. Selecting and teaching conceptually demanding words is essential to ensuring that diverse learners are able to grapple with the "big ideas" crucial to understanding a challenging text. Complex concepts require more multidimensional teaching strategies. These are some techniques can help

medical students to understand medical vocabulary: list-group- label, possible sentences, word analysis (affixes and roots) and concept mapping. Among the difficult problems faced by the education system are associated with teaching effectiveness. The current preparation of teachers for specific age level, specific subject matter, specific academic skills, etc., does not take into consideration sufficiently the complexity of factors such as students' various characteristics. Miriam, B. (2002).

12- What are your suggestion to develop optimal teaching and learning strategies of medical English vocabulary?

1- Improve basic English language before university level.

2- Updating English language syllabus.

3- Teach medical students medical terminology (E A P) in the first year at Faculty of Medicine.

4- Explain all new medical terminology in the lecture.

5- Encourage medical students to study in groups discussion.

6- Focus on Latin and Greek medical terminology which are relative to English language.

7- Numbers of medical students in classroom should be not more than 30.

8- Lab of English language should be available at the Faculty of Medicine.

9- Increase credit hours for teaching medical English language.

10- Audio visual aids should be available in the classroom.

11- Teach medical students English language through medical syllabus to help to them understand medical courses in advance.

12- Continue of teaching medical English syllabus in advance levels at Faulty of Medicine, University of Khartoum.

4.4. Test Analysis

The medical students were taken a vocabulary test, that contained six sections to evaluate the level of understanding a medical vocabulary after collection the exam researcher herself checked, the test and their scores listed and manipulated by.

Table (4.51): Statistical Methods, the Analysis and Results of Vocabulary Test

	Measurements			t-test	Sig	Men difference
	Mean	Std. deviation	S.E. of mean			
Question 1	5.51	2.81588	0.28159	1.811	0.073	0.51
Question2	7.76	0.69805	0.0698	53.864	0.000	3.76
Question3	4.89	0.49021	0.04902	48.755	0.000	2.39
Question4	2.78	1.38957	0.13896	-5.181	0.000	-0.72
Question5	1.79	1.32798	0.13280	-5.346	0.000	-0.71
Question6	1.50	0.93744	0.09374	-10.667	0.000	-1

The table above (4.51) showed the result of the t-test is used to determinant there is deference mean from test value (the test value is half mark obtained by the student). For question 1 the mean marks is 5.51 from total mark 10 with standard deviation 2.82 and standard error of mean 0.283. but there is insignificance this implies in this question student not matter. For question 2 the mean marks is 7.76 from total mark 8 with standard deviation 0.698 and standard error of mean 0.0698. The value t-test is 53.864 with p-value 0.000 this implies in this question the students high grade. For question 3 the mean marks are 4.89 from total mark 5 with standard deviation 0.49 and standard error of mean 0.0049. The value t-test is 48.755 with p-value 0.000 this implies in this question the students high grade.

For question 4 the mean marks is 2.78 from total mark 7 with standard deviation 1.389 and standard error of mean 0.13896. The value t-test is -5.181 with p-value 0.000 this implies in this question the students high grade. For

question 5 the mean marks is 1.79 from total mark 5 with standard deviation 1.3289 and standard error of mean 0.1328. the value t-test is -5.346 with p-value 0.000 this implies in this question the students high grade. For question 6 the mean marks is 1.5 from total mark 5 with standard deviation 1.389 and standard error of mean 0.13896. the value t-test is -10.667 with p-value 0.000 this implies in this question the students high grade.

4.4.1 The Test Discussion

A vocabulary test was carried out with medical students, level three, at Faculty of Medicine, University of Khartoum. This test composes of six questions which depend on students' medical vocabulary knowledge according to their previous medical syllabus experienced after they had been taken them in the first, second and third year, to identify some difficulties that encounter medical students in understanding medical English vocabulary.

To pass first year examinations and proceed to second year.

The candidate must successfully pass examinations in the following courses.

a) Biology - Chemistry

b) Anatomy - Biochemistry - Physiology- Community Medicine -Patient Care and First aid and English Language

Year 2: To pass the second year and proceed to the third year the candidate must pass examinations in the following courses.

a) Anatomy- Biochemistry-Physiology -English Language

b) and sit an examination in the following continuing course:

- Community Medicine.

Failing in the 3 subjects or in a supplementary examination, the candidate will repeat the year.

Year 3: To pass the third year examinations and proceed to fourth year the candidate must successfully pass an examination in the following courses.

a) Neuroscience - Microbiology- Immunology- Pharmacology- Infectious and Endemic -Basic Clinical Skills disease- Behavioral Sciences

b) And sit for examination in the following continuing courses

Community Medicine- Pathology. (http:/med.uofk.edu/index.com)

A vocabulary test was designed based on medical students' knowledge about above courses.

4.4.1.1 Question 1

Question one concerns about the definitions of pain quality, the results show that in significance with mean difference (0.51) which means that medical students encounter difficulties to understanding and recognizing the meaning of pain quality that means medical students need to study more in specialist medical English vocabulary about pains quality.

The International Association for the Study of Pain widely used pain definitions as Bogduk, N. and Merskey, H. (1994). stated that "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." In medical diagnosis, pain is regarded as a symptom of an underlying condition. It is a major symptom in many medical conditions, and can interfere with a person's quality of life and general functioning."

On the one hand, medical students should have a wide scope knowledge of pain qualification and their definitions to help patients feel better, eradicate and recovery from diseases. Also Joshi, G. (2005. P: 21- 37). Says that

> " *Pain was regarded since 5th as a vital sign to help raise awareness of the presence of pain and all healthcare professionals should routinely measure a person's pain and then act on the information obtained. Pain assessment is imperative to ensure that patients receive safe and effective pain management that is tailored to their needs. Pain assessment is fundamental in assessing the diagnosis of the cause of the pain and it should not be assumed that this is self-evident*".

The outcome of inadequate of knowledge of pain qualification and its subsequent management can be give serious physiological and psychological consequences e.g. increase postoperative morbidity, delayed recovery and

return to normal daily living, and reduced patient satisfaction have all been reported. In addition to poor postoperative pain management may lead to persistent pain after surgery. Finally knowing of pain qualification enables to identifying accurate therapeutic interventions and evaluation of treatment efficacy that helps to relieve suffering and avoid misconceptions. The description of painful experiences varies considerably. Consequently, a range of adjectives that describe pain has arisen. However, the study of their meaning is relatively recent. But individuals still find difficult to use these a abundance of words that describe pain, the main reason is that words such as gnawing, throbbing, shooting have few objective reference points, compared with the use of words like red or green, which although adjectives have definite reference to something we clearly understand.

4.4.1.2   Question 2

This question includes different meaning of some medical terms that describes the body organs' diseases. In question two medical students well done and they have obtained good marks with mean difference (3.76), therefore they are studied at first, second and third years some relatively current courses such as physiology, patient care, community medicine, Anatomy, immunology, infectious and Endemic diseases, Basic clinical skills and Pathology. In addition, medical students have been studied only specialist medical English at the end of semester four, it was about 30 hours divided to two hours per week. Medical vocabulary including not just words but also their meaning, orthography, pronunciation, context and conjugation, is in the very essence of the process of learning a new medical language. Here are three key reasons why increasing and evolving medical vocabulary is well worth the effort, medical vocabulary is the key to communication Wilkins, D. (1972), also medical vocabulary allows to develop other English skills Nation, P. (1994), and Nation, P. (1990) stated that the more words you know, the more you will learn.

4.4.1.3   Question 3

In this question medical students are tested on their general medical knowledge of some definitions of diseases. This question based on different meaning of words that included similities between words in homonumes which divided into homophone and homograph especially in suffixes and prefixes. The main defferent between the most of words is words roots. The mean difference was (2.39). The responses of medical students are accepted because they studies many different courses related to above issue.

4.4.1.4 Question 4 (Medical vocabulary "Collocation")

Question four composes of combination words in general medical knowledge. Medical students' marks were fauilar in this question, the mean difference was (-0.72) therefore, they have poor knowledge of medical collocations vocabulary which are build up from noun or phrases and consist of two or more of medical terms that are give meaningful of medical collocation for example consulting room, general practitioner, general practice, healthcare, internal medicine, and surgical center.

A collocation is two or more words that often go together. English language of medical students will be more natural and more easily nuderstood, also they will have alterative and rich ways of medical vocabulary expressing. A collocations refers to how words go together or form fixed relationships. Becoming aware of collocation is a part of vocabulary learning. All languages have alarge number of collcating words. A good medical dictionaries will help medical students to formulation medical English collocations.

Collocations of Medical Vocabulary Learning

Practice using new collocations in context as soon as possible after learning them. Learn collocations in group. Easy to find information on collocations in any good learner's dictionary. And you can also find specialized dictionaries of collocations. (collocatihttp://www.onestop English.com).

4.4.1.5 Question 5 (Grammar)

In this question medical students' mean difference was (-0.71), this question designed for checking their grammar points, their responses were very bad because they didn't know sentences structure and how to use certain correct verb in. Grammar is an important factor to learn a new language. Most of people think it is the most difficult part of learning a new language. However, grammar constitutes the rules and framework, changing the form of words and joining them into sentences. If there are no rules it creates problems in communication – writing – and understanding English language.

Kim. B. (2001. P: 46-48):. Says that

> *"Grammar is the set of rules of any given language that enable us to construct any sentence in that language which we recognize to be well- formed. The grammar of English would enable us to construct a correct sentence. The rules of English essentially deal with the principles of stringing words together to form larger units of construction such as phrases, clauses and sentences. This aspect of grammar which is concerned with word order is called syntax. A clause is unit of syntactic construction. There are many different types of clause fulfilling a range of functions within sentences; it is possible to identify the features which typify a clause. Most central to a clause is it verb element. Verb phrase are multi – faced in the way they provide information about tense, aspect, voice, and so on. The verb phase is normally preceded by a subject element and followed by any elements needed to make the clause grammatically complete".*

In question five medical students show poor grammatical levels, that mean they must be improve and check their grammar.

See (www.Englishleap.com). Here are some tips to help students to improve their grammar.

Understand the Building Blocks of Grammar

As a first step, it is important to know the different building blocks of grammar like nouns, pronouns, articles, adjectives, verbs, adverbs, prepositions, conjunctions and interjections. The internet is full of resources about these and it is usually a good idea to understand them well.

Pay attention to sentence structures

When you read an article, it is important to pay attention to how sentences are constructed. This practice helps ingrain different sentence structures and will help your spoken and written English.

Grammar Exercises Will Help you

Try doing different grammar exercises and find out your weaknesses. These exercises are freely available on the internet. It is only after you are able to correctly assess your weaknesses that you will be able to rectify them.

Join a Course

Many students find that an English improvement course is the quickest way to improve English grammar. If joining a classroom program is difficult, then an online course is a great option. (English leap .com).

In addition to mentioned above medical students can improve their English grammar by use grammar books to read about English grammar and test your grammar, learn different tenses and doing online exercises.

4.4.1.6   Question 6 (Writing)

The mean difference of question six was (-1), this result shows that medical students encountered many different problems in medical English writing which divides into words formation, spelling**,** medical abbreviations**,** medical terms**,** collocations**,** and punctuation marks**.** English language has special conventions for writing (namely, using alphabet standardised system of spelling and a set of punctuation marks). The vocabulary and the grammatical structure are used for speaking and writing are essentially the same even

though writing is often more polished than speech. Natilene, B. (2007. P:164) defines "Academic writing style" as

> *"In other words this type of writing tends to be quite formal in tone. Also it doesn 't has emotional colouring and any kinds of someone 's own position in situations. In short this means that your essay or something else should avoid colloquial words and expressions".*

Mel, L. (2002), stated that "English language problem may manifest itself in some aspects of writing as following: Poor vocabulary, Frequent capitalization, punctuation and grammar errors. Many misspelled words, Inappropriate use of colloquial language. Difficulty with sentence structured and word order. Trouble reading back what is written. Difficulty with word sounds, spelling, and meaning. Difficulty generation ideas or elaborating on them. Difficulty developing and organizing ideas. Awkward phrasing and unconventional grammar. Poor planned papers and reports".

To improve good writing relies on medical students' abilities steadily over time through obtaining books on technical writing and practice what you have learned, use medical dictionaries and any technical literature, use present tense and keep sentences simple, develop reading and business knowledge of second language, and finally keep a notebook of your mistakes from your writing and tips you learn.(wikihow.com).

4.5 Verification of the Study's Hypotheses

To answer the study's question and to test hypotheses, the data analysis will be conducted for each statement from the questionnaires. These statements investigate the opinions of the study respondents about Medical English vocabulary teaching and learning strategies at Faculty of Medicine, University of Khartoum. So the researcher gives the most to; 5 degrees for each answer 'strongly agree', 4 degrees for 'agree', 3 degrees for ' neutral' 2 degrees for ' disagree' and 1 degree for ' strongly disagree'. Also Yes and No questions and ranking from 1 up to 10.

4.5.1 Verification of the First Hypothesis

The first hypothesis in this study states the following:

There are many difficulties encounter medical students in specialist vocabulary in medical English such as word root, frequent use of prefixes and suffixes, word formation, pronunciation, understand and use of medical terminology. This hypothesis is confirmed by the results of the study. To test this hypothesis, the medical students' opinions are very important to each question.

Table (4.52): for Respondents' Answers about the Statements of the First Hypothesis. (Ranking from 1 up to 10 in Order the Main Difficulties in Learning Medical English Vocabulary)

	Item	1	2	3	4	5	6	7	8	9	10
1	Root of words	**24**	12	11	5	7	11	7	5	12	6
2	Suffixes and prefixes frequently used	4	3	6	10	**18**	15	11	17	13	3
3	Irregular plural	4	10	3	12	14	15	**22**	14	6	0
4	Collection of words	7	8	16	11	**18**	9	10	10	9	2
5	Synonym of words	3	15	16	**19**	6	13	9	9	7	3
6	Speaking with people	**35**	10	10	7	4	7	3	9	8	7
7	Formation of grammatical sentences	6	9	10	9	7	10	12	14	**16**	7
8	Medical communication of words	6	**16**	8	7	14	9	10	11	14	5
9	Word with multiple meaning	7	12	**19**	16	8	8	10	7	11	2
10	Otherwise	5	5	4	3	4	3	5	2	4	**65**

For the important difficulties in learning medical vocabulary; for the Root of words most respondents take it rank (1) with 24% and 12% of them take it rank (2) and rank (9) respectively. For Suffixes and prefixes frequently used most respondents take it rank (5) with 18% and rank (8) with 17% respectively. For the Irregular plural most respondents take it rank (7) with 22%. For the Collection of words most respondents take it rank (5) with 18%. For the Synonym of words most respondents take it rank (4) with 19%. For the Speaking with people most respondents take it rank (1) with 35%. For the Formation of grammatical sentences most respondents take it rank (9) with 16%. For the Medical communication of words most respondents take it rank (2) with 16%. For the Word with multiple meaning most respondents take it rank (3) with 19%. For the Otherwise most respondents take it rank (10) with 19%.

4.5.2 Verification of the Second Hypothesis

There are some possible strategies which should be used for understanding medical English vocabulary such as online course, experimental learning, in class group discussion and prepare lecture notes. This hypothesis is confirmed by both teachers and medical students based on their opinions in these tables.

Table (4.53): Statistical Measures for Respondents' Answers about the Statements of the Second Hypothesis (The Effective Strategies Used by Teachers for Enhancing Medical English Vocabulary)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Using online or printed dictionary	19.333	4	0.000	3.00	To some effective
2	Vocabulary must be chosen according to medical students' needs.	18.000	4	0.000	2.00	Not effective

3	More time should be given for teaching new words.	15.667	4	0.000	2.00	Not effective
4	Medical students search for new vocabulary	19.667	4	0.000	4.00	Effective
5	Applying information gap or opinion gap and drilling.	17.333	4	0.000	2.00	Not effective
6	Course books, photocopies work, sheet, case study, new paper article.	22.533	3	0.000	4.00	Effective
7	Group dynamics.	13.667	4	0.000	3.00	To some effective

The Results of Table (4.53) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Using online or printed dictionary was (19.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Vocabulary must be chosen according to medical students' needs was (18.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement More time should be given for teaching new words was (15.667) with P-value (0.000) which is

lower than the level of significant value (5%) These refer to the existence of statistically differences.

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Medical students search for new vocabulary was (19.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Applying information gap or opinion gap and drilling was (17.333) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Course books, photocopies work, sheet, case study, new paper article was (22.533) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Group dynamics was (13.667) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.54): Distribution of Frequencies and Percentages of Table (4.53)

Valid	Frequency	Percent
A strongly agree	31	14.8%
Agree	65	30.9%
Neutral	38	18.1%
Disagree	63	30.0%
Strongly disagree	13	6.2%
Total	**210**	**100.0%**
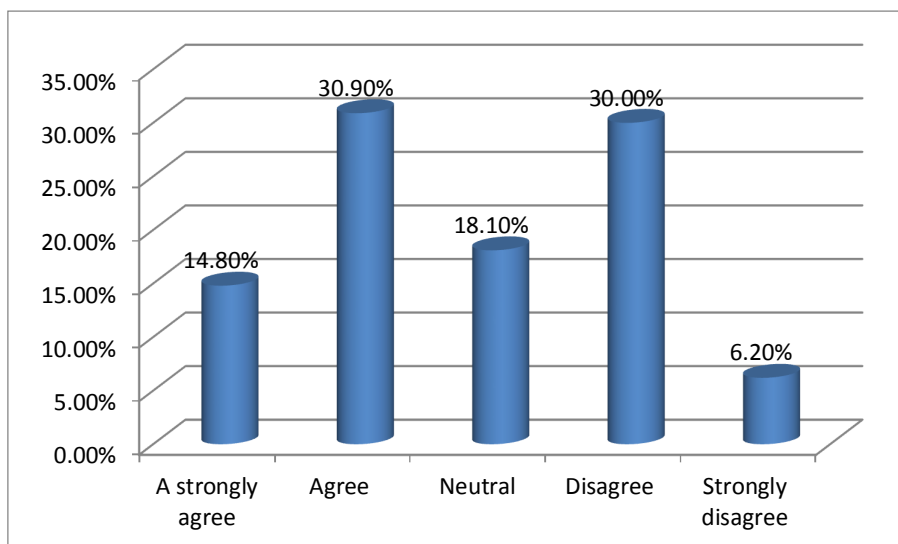
Figure 1: Distribution of Frequencies and Percentages of Table (4.53)

Table (4.55): Statistical Measures of sum up of Table (4.53)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	210	46.381	4	0.00	3.00	To some effective

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was (46.381) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically difference.

Table (4.56): Statistical Measures for Respondents' Answers about the Statements of the Second Hypothesis (The Most Effective Strategies for Teaching and Learning Medical English Vocabulary)

No	Phrases	Chi-square value	Df	Sig	Median	Interpretation
1	Self-study	39.200	4	0.000	4.00	Effective
2	In-class group discussion	98.000	4	0.000	4.00	Effective
3	Prepare lecture notes	73.100	4	0.000	4.00	Effective
4	Team project	53.400	4	0.000	4.00	Effective

5	Memory	48.500	4	0.000	4.00	Effective
6	Cognitive	18.320	3	0.000	3.00	To some effective
7	Critical thinking	32.800	4	0.000	4.00	Effective
8	8-Visual and auditory activities	78.800	3	0.000	5.00	Very effective
9	Humor in the class	40.900	4	0.000	4.00	Effective
10	Stimulations	30.640	3	0.000	4.00	Effective
11	Online course	37.400	4	0.000	3.00	To some effective
12	Online dictionary or printed dictionary	37.200	4	0.000	4.00	Effective
13	Course book	46.300	4	0.000	4.00	Effective
14	14-Research and renew my information	61.300	4	0.000	4.00	Effective
15	Context lesson	55.760	3	0.000	4.00	Effective
16	Simple dialogue	23.200	3	0.000	4.00	Effective

The Results of Table (4.56) Interpreted as Follows:

1. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Self-study was (39.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

2. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement In-class group discussion was (98.000) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

3. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Prepare lecture notes was (73.100) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences

4. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Team project was (53.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

5. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Memory was (48.500) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

6. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Cognitive was (18.320) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

7. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Critical thinking was (32.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

8. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Visual and auditory activities was (78.800) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

9. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Humor in the class was (40.900) with P-value (0.000) which is lower than the level of

significant value (5%) These refer to the existence of statistically differences.

10. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Stimulations was (30.640) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

11. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Online course was (37.400) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

12. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Online dictionary or printed dictionary was (37.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

13. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Course book was (46.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

14. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Research and renew my information was (61.300) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

15. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Context lesson was (55.760) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

16. The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was

(23.200) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

Table (4.57): Distribution of Frequencies and Percentages of Table (4.56)

Valid	Frequency	Percent
Very effective	450	28.1%
Effective	611	38.2%
To some effective	396	24.7%
Not effective	121	7.6%
Not at all effective	22	1.4%
Total	**1600**	**100.0%**
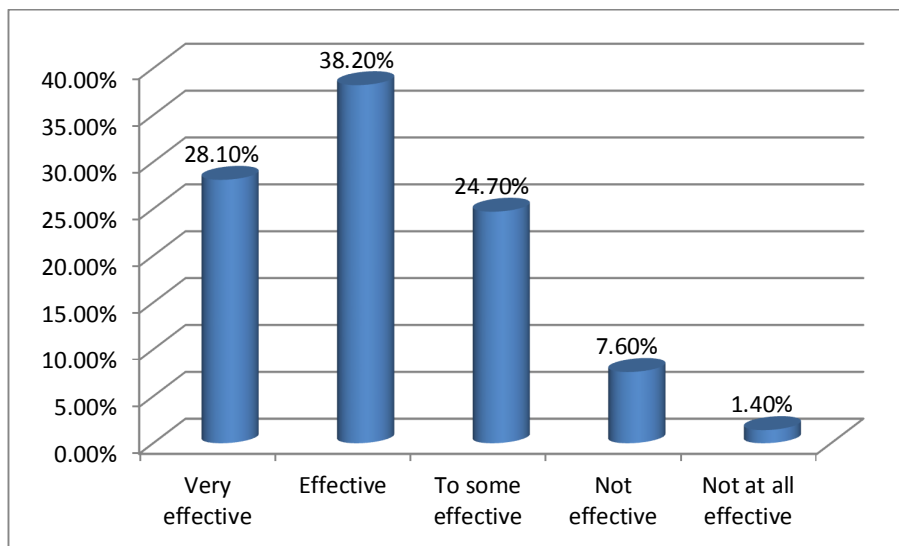
Figure 2: Distribution of Frequencies and Percentages of Table (4.56)

Table (4.58): Statistical Measures of sum up of Table (4.56)

No	N	Chi-square value	Df	Sig	Median	Interpretation
1	1600	736.756	4	0.000	4.00	Effective

The value of chi – square calculated to signify the differences between the numbers of individuals of the study for the statement Simple dialogue was

(736.756) with P-value (0.000) which is lower than the level of significant value (5%) These refer to the existence of statistically differences.

4.5.3 Verification of the Third Hypothesis

English languages syllabus at Faculty of Medicine does not cope sufficiently with medical English vocabulary. To test this hypothesis, it is important to know the trends of both teachers and medical students, that they are confirmed it, because medical students mentioned that,

Table (4.59): for Respondents' Answers about the Statements of the Third Hypothesis (In my Opinion English Course is)

No.	Statement	Yes	No
1	Subject learning objectives are clear	46	54
2	The subject is well organized	39	61
3	The subject stimulates my interest to learn more	39	61
4	The subject is relevant	38	62
5	Feedback about my work is helpful	60	40
6	Grading criteria are fair	44	56
7	I am achieving the subject learning objectives	46	54

From above table (4.59), with regard to medical students' opinions about the statements of English course: Subject learning objectives are clear 46 answered yes and 54 answered No, 61 answered No for the statement The subject is well organized and 39 answered **yes.** The subject stimulates my interest to learn more 61 answered No and 39 answered **yes.** The subject is relevant 62 answered No and 38 answered **yes.** Feedback about my work is helpful 60 answered yes and 40 answered No. Grading criteria are fair 44 answered yes and 56 answered No. I am achieving the subject learning objectives 46 answered yes and 54 answered No.

4.5.4 Verification of the Fourth Hypothesis

Some of the teaching staff are not sufficiently aware of the problems which encounter medical students in understanding medical English.

To test finally hypothesis according to teachers' answers this hypothesis was rejected, hence all teachers aware of the most medical students' difficulties in understanding medical English vocabulary or classroom environment as overcrowded of students in one class, unsuitable materials used for teaching medical English vocabulary, English course haven't enough time to achieve syllabus objectives, but the most of them ignored to make solutions to perceive problems with low-level medical students , finally they know well that medical students at Faculty of Medicine didn't study enough medical English syllabus.

4.6 Summary of the Chapter

This chapter has explained analysis, results and discussion of this study. The tools of the study are: teachers' and medical students' questionnaires, a depth interview and vocabulary test). The main findings are most of medical students have different difficulties in understanding medical English vocabulary, also there are some effective teaching and learning strategies should be used e.g. audiovisual means, group discussion, text books and online curses. Many of teachers and medical students are stated that the current English language syllabus didn't cope with medical students' needs Finally all teachers aware of these difficulties that encountered medical students in understanding medical English vocabulary.

Chapter Five

Summary, Conclusions, Recommendation and suggestions for further studies

Chapter Five

Summary, Conclusions, Recommendations and Suggestions for Further Studies

5.1 Introduction

The frame work of chapter five is including Summary, Conclusion, Recommendations and suggestions for further studies. This the last chapter of the study. It is devoted to cast light on summary of the study, conclusions drawn, recommendations held based on the findings, and some suggestions for further researchers.

5.2 Summary and Conclusions

This study is an investigation of strategies for understanding the meaning of specialist medical English vocabulary: A case study of medical students, at Faculty of Medicine, University of Khartoum. For investigating the study questions objectively, the researcher set up four hypotheses. First, there are many difficulties encountered medical students in specialist vocabulary in medical English such as word root, frequent use of prefixes and suffixes, word formation, pronunciation, understand and use of medical terminology. This hypothesis has been confirmed in both teachers' and medical students' questionnaires. Second, there are some possible strategies which should be used for understanding medical English vocabulary such as online courses, experimental learning, in class group discussion and prepare lecture notes. The necessary of optimal teaching and learning strategies were confirmed by teachers' and medical students' questionnaires also by an interviewed that conducted with experienced teachers. Thirdly, English language syllabus at Faculty of medicine doesn't cope sufficiently with medical English vocabulary. This was confirmed by the most of respondents. Fourthly, some of teaching staff are not sufficiently aware of the problems which encountered medical students in understanding medical English. This was rejected by teachers and experienced teachers.

The hypotheses were confirmed or not confirmed to be true by using four tools. Two of these tools were questionnaires designing, one for teachers in both fields English language and medical at Faculty of medicine, University of Khartoum. In Khartoum state. The other questionnaire was for medical students of Faculty of medicine, University of Khartoum, who studied medical English vocabulary regarding their field of study. The third tool was implemented an interview for experienced teachers in both fields English language and medical. The last tool was prepared a vocabulary test for the same medical students who mentioned above.

The sample size consisted of 30 teachers from Faculty of Medicine, University of Khartoum, some of them were English language teachers and the others were major in different medicine departments.100 of medical students, third-level from Faculty of Medicine University of Khartoum, and 10 of experienced teachers from there.

The following paragraphs point a summary of findings, that were obtained and provided by a researcher, then conclusions regarding the four hypotheses are made to see whether they are confirmed or rejected.

Generally, the results of the study showed that, medical students have some difficulties in medical vocabulary parts, that stated by both teachers and medical students. These difficulties were ranked as following: medical communication of words, speaking with people, prefixes and suffixes, word root, homonyms of medical words, irregular plural, a homograph of words, word with multiple meaning and synonyms of word. Moreover the findings explained medical students are pretty busy because the nature and difficulties of study medicine, while English language is a fundamental body in all medical courses, so here are some reasons mentioned by teachers can lead to their weakness in English language specially in medical English vocabulary; weakness from secondary school, poor vocabularies, medical students' English courses need to ESP, overcrowded in English class and unsuitable strategies were a adopted in teaching medical English vocabulary. In addition to the most of teachers focus on the role Faulty of medicine to develop medical vocabulary

and point that; the text book isn't enough and available, English courses haven't enough time to achieve syllabus objectives. Also there aren't used sufficient teaching materials for teaching medical vocabulary, English courses were taught haven't clear guidance for teachers to follow in class, lack of English staff members and the English syllabus is irrelevant to medical students' needs, so that mean the subject teachers and syllabus designers did aware of medical students' difficulties. The teachers indicate to some effective teaching strategies to adopt in teaching medical vocabulary class such as course books medical students search for new vocabulary, group dynamics and using online and printed dictionary.

The findings stated that medical students use medical vocabulary mainly in diseases, with medical staff, medical procedures and patient's cases. There are some factors may help medical students to learn medical vocabulary at Faculty of medicine; study medical English in the first year help to understand the other medical syllabus and enhance general English language skills, medical English language in the first year should be studied only for medical purposes. Moreover, the curriculum of English language isn't comprehensive skills that contain medical vocabulary proportion with the goals set plan, and it doesn't cope with medical students' needs for development of medical vocabulary, this explain that the subject teachers and syllabus designers aware of medical students' difficulties and they don't make solutions to perceive problems with medical students' difficulties in medical vocabulary.

Medical students need English language skills to promote medical vocabulary as speaking, listening, then increase their new medical vocabulary, finally reading, writing skills and English language grammar.

The results showed medical students' opinions in subject part, the most of them confirmed that subject learning objectives aren't clear, the subject isn't well organized and irrelevant to medical purposes, it isn't stimulating students' interest to learn. Finally, medical students didn't achieve the subject learning objectives.

According to results there are some effective teaching and learning strategies that medical students preferred to use it to learn medical vocabulary as; visual and auditory activities, in class group discussion, prepare lecture notes, online or printed dictionaries, team project and research and renew medical information.

As shown in all above results, three hypotheses of the study are confirmed except the final hypothesis was rejected.

5.3 Recommendations

Based on the findings, the following recommendations are suggested:

1- Medicine English should teach in Faculty of medicine in first year and in advance levels.

2- Update training program should hold by Faculties of medicine for teachers' staff.

3- Subject teachers and syllabus Designers should pay attention to medical students' needs and difficulties that come up with even low-level students, and taking into consideration these difficulties in next steps.

4- English language syllabus needs continuous review and development regarding medical vocabulary in English language skills.

5-Teachers who employed at Faculties of Medicine should innovation their researchers and academic information.

6-Focus on difficulties related to medical vocabulary that encounter medical students and try to resolve these difficulties that come up.

7-Using mix of teaching and learning strategies, in addition to use technology and computer labs for more exposure to enhance medical English vocabulary.

8-The number of medical students in classroom should be appropriate.

9- Preparing classroom with all necessary audiovisual means to promote teaching process.

10-Increasing the time of English language lecture therefore, both teachers and medical students can use effective teaching and learning strategies to improve medical English vocabulary especially in communication part.

11-Medical students should recognize that medical terms are derived from simple components.

12-medical students should build medical words from components parts, accurately spell, good grammatically forms and development their basic English language skills to avoid the medical errors of patients cases.

13- Preparing classroom with all necessary audiovisual means to promote teaching process.

14-Medical students should provide rich and varied medical English language experiences that occur throughout the work day, across the curriculum and encourage wide medical reading.

15-Medical students need to some kind of system to management their time and work.

5.4 Suggestions for Further Studies

1- More researches of investigation on the optimal teaching and learning strategies for understanding medical English vocabulary and other fields in specialized English languages are needed to carry out.

2-Many studies are needed to stand on the difficulties that encountered medical students in learning specialized medical English terminologies and try to support these difficulties with accurate solutions.

3-A lot of researches are needed to measure out all elements of learning process of specialized medical English language based on teachers' qualifications, curriculum, physical classroom, number of students and teaching and strategies.

4- Ministry of High Education should build solid foundation and integrate role of all English language studies centers to follow up and implement syllabus designers' and subject teachers' researches recommendations.

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Appendixes

Sudan University of Science and Technology

College Of Graduate Studies

A questionnaire for Teachers of English as a University Requirement in college of Medicine University of Khartoum

Dear Teachers,

This questionnaire is part of a ph. D. study entitled "Investigating Strategies for Understanding the Meaning of Specialist English vocabulary: A case study of Medical students Faculty of Medicine, University of Khartoum ". It aims to investigate of teaching strategies that can help medical students for understanding medical English vocabulary. Your answers to the following questions will be used confidentially for the study purposes only.

Thank you for your cooperation

Khalda Abdelrhim Osman

Ph.D. candidate

Sudan University of science and Technology

Part A

Personal information:

Put a tick   (√)

1-A cademic qualification:

a) Diploma   b) B.Ed.

c) Postgraduate diploma   d) M.A.

e) ph.D.   f) No degree in English

2- Nationality:-

a) Sudanese   b) Non Sudanese

3-Experience in teaching:

a) 1 – 5 years   b) 6 – 10 years

c) 11 – 15 years   d) years more than 15

Part B

Please put a tick (√) in the **right box that represents your attitude towards each of the following statements:**

1 – The main factors lead to weakness of medical students in medical English vocabulary:

Statement	A strongly agree	agree	Neutral	Disagree	A strongly disagree
1- un trained teaching staff					
2- weakness of medical students in English language in secondary school.					
3- Similarities of words confuse un trained teachers as(synonym).					
4-Lack of English staff members					
5- The English syllabus is irrelevant to the medical students needs.					
6-The students' vocabulary knowledge is poor.					
7 - Medical students tend to use a word in unsuitable situation.					
8-Over crowded class of English as university requirement					
10- English course needs to (ESP) for medical students.					
9-unsuitable of strategies are adopted.					
10-some medical students feel resistant to medical English vocabulary					

Part(C)

2 - Faculty of Medicine University of Khartoum has a vital role to increase abilities of medical students to study English vocabulary in a proper ways through the following:

Statement	A strongly disagree	agree	Neutral	Disagree	A strongly disagree
1-In my faculty, teaching of medical English courses cope with International standards of medicine colleges.					
2- In my faculty, text books are enough and available.					
3) In my faculty, There are sufficient teaching materials for teaching medical English vocabulary .					
4- Medical students are taught medical English (ESP) at first year.					
5-English courses have enough time to achieve syllabus objectives					
6- Physical classroom are prepared to meet students' needs for understanding medical English.					
7) English course were used have clear guidance for teachers to follow in class.					

Part (D)

3-To improve The subjects specific knowledge, the teacher should be careful of these rules:

Statement	A strongly disagree	agree	Neutral	Disagree	A strongly disagree
1-Manage careful planning of the language and problems that are likely to come up in a lesson					
2-Exchange strategies to deal with vocabulary problems that can't be solved during the lecture.					
3-The subject teachers need to be confident that they have the skills to motivate their learners, to make learning successful.					
4-Subject specialist with strong strategies would be even better and effective.					
5-Choice of rationale for any specific medical vocabulary to be taught in the classroom.					
6-Make solutions to perceive problems with low-level medical students.					
7-Creating an atmosphere in the class room which is conductive for teaching.					
8-Providing medical students with meaningful models of good practice to emulate(e.g. T v or radio footage)					
11-Some medical students need more encouragement or patience on the teacher's part.					

12-Ask medical students what are the learning strategies they are preference.					
13-It is important to supplement your medical course with additional strategies that you have select based on medical student's needs					
14-Over crowded class of English as university requirement					
15-The course of English are regularly revised so as to see any weakness of medical students.					
16-Prvides medical students with basic facts relate to new words to what students already know.					
17-Balance and emphasis on, various skills with high powered participations by using (T.T.T), Teacher – Talking – Time.					

4 – Put in order the common difficulties that faced medical students for understanding medical English vocabulary (i . e,1 -2 - 3 up to 10)

Root of words (Latin and Greek)	
Suffixes and prefixes of words	
Synonym of words	
Antonym of words	
Abbreviations of words	
A words with multiple meanings	
A homograph of words	
A homophone of words	
Homonym of words	
Medical communication of words	

5 – The most effective Strategies that used by teachers for enhancing medical English vocabulary

Statement Type of strategy	Very effective	effective	To some effective	not effective	Not all effective
1 - Using online or printed dictionary to motivates medical students.					
2 - Vocabulary must be chosen according to the need of medical students					
3 - More time should be given for teaching new words.					
5 - Medical students search for new vocabulary.					

Statement					
6-Applying information gap or opinion gap and drilling to explore difficulties meaning of medical vocabular					
7-Course book's sites, photocopiable work sheet, case study, role-play, news paper article, tactile, kinesthetic, and authentic texts .					
8-Group dynamics through use of communicative activities (pair work and group work))					

8- Assessment methods used of medical students.

Statement	A strongly agree	agree	Neutral	Disagree	A strongly disagree
1-Quizzes and exams					
2-Oral exams					
3-Home work and problem sets					
4-Peer assessments					
6-Oral report					
7-Written reports					
8-Presentation project					
9-Speaking examination					
10-Listening Examination					
11-Project work					

Sudan University of Science and Technology

College of Graduate Studies

A questionnaire for students of English as a university requirement in faculty of Medicine, Khartoum University

Dear students,

This questionnaire is part of ph. D. study entitled "Investigating strategies for understanding the meaning of specialist English vocabulary : A case study of Medical students faculty of medicine, university of Khartoum" . It aims to investigate of teaching strategies that can help medical students for understanding medical English vocabulary. Your answers to the following questions will be used confidentially for scientific purposes only.

Thank you for your cooperation

The researcher,

Khalda Abd Elrhim Osman

p.h. D   candidate

Sudan University

Questionnaire of medical students at Faculty of Medicine, University of Khartoum

Teaching and Learning strategies of medical English vocabulary

Personal Information:

Sex: Male   Female

Age group: 16 up to 20 ☐   up to 25 ☐   26 up to 30 ☐

Accommodation: With a family ☐   In campuses ☐   With relatives

The Secondary School Certificate: Sudanese ☐   Arabian ☐   Foreign ☐

Percentage he/she earned to enter the faculty of medicine:

From 81% up to 90 % ☐   More than 90% ☐

Degree he/she earned in the English language when you enter the faculty of Medicine: 71 up to 80 ☐   81 up to 90 ☐   91 up to 100 ☐

Table (4.18) How many hours of practical training per week:

Less than 3 hours ☐   3 up to 6 hours ☐   7 up to 10 hours ☐

11 up to 14 hours ☐   More than 15 hour ☐

Factors that help medical students to learn medical vocabulary at the faculty of Medicine:

No	Statement	A strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Learning medical vocabulary helps you to development of English language skills					
2	Medical language doubality between Latin and Greek language helps you to understanding the medical vocabulary					
3	English curriculum, who studied at the Faculty of Medicine in proportion to the needs for the development of medical vocabulary					
4	The curriculum of English language is comprehensive					

	skills, which contain medical vocabulary proportion with the goals set plan, which studied						
5	The length of time sufficient to cover the English language course						
6	To be a study in the first year of medical school English Language only for medical purposes						
7	The study of medical English in the first year help you to understand the other medical syllabus						
8	The classrooms suitable in terms of numbers to make it easier to learn medical vocabulary						

Ranking from 1 up to 10 in order of importance that you experience difficulties in learning the vocabulary of medical in terms of:

	Item	1	2	3	4	5	6	7	8	9	10
1	Root of words										
2	Suffixes and prefixes frequently used										
3	Irregular plural										
4	Collection of words										
5	Synonym of words										
6	Speaking with people										
7	Formation of grammatical sentences										
8	Medical communication of words										
9	Word with multiple meaning										
10	Otherwise										

Ranking from 1 up to 4 according to the most important purposes involving the use of medical vocabulary:

Purpose	Ranking			
	1	**2**	**3**	**4**
Disease				
Patient's case				
Medical Procedures				
Dealing with medical staff				

What are specific skills do you need encountered current English language curriculum for development your medical vocabulary learning

No	Statement	Strongly agree	Agree	Neutral	Disagree	A Strongly disagree
1	more reading practice					
2	Get new medical vocabulary and the correct use					
3	English grammar skill					
4	Writing skill					
5	Listing skill practice					
6	Speaking skill practice					

In my opinion English course is:

No.	Statement	Yes	No
1	Subject learning objectives are clear		
2	The subject is well organized		
3	The subject stimulates my interest to learn more		
4	The subject is relevant		
5	Feedback about my work is helpful		
6	Grading criteria are fair		
7	I am achieving the subject learning objectives		

In your opinion what are the effectiveness strategies of teaching and learning medical vocabulary

Type of strategy	Very effective	Effective	To some effective	Not effective	Not at all effective
1-Self-study					
2-In-class group discussion					
3-Prepare lecture notes					
4-Team project					
5-Memory					
6-Cgnitive					
7-Critical thinking					
8-Visual and auditory activities					
9-Humor in the class					
10-Stimulations					
11-Online course					
12-Online dictionary or printed dictionary					
13-Coures book					
14-Research and renew my information					
15-Context lesson					
16-Simple dialogue					

Appendix (3)

An interview of experienced teachers at Faculty of Medicine, University of Khartoum

Personal Information
a)Academic Qualifications:
1)Bachelor
2)Master
3)ph.D
b)Department
c)Experienced of teachers (per/year)
1-What are the main difficulties that encountered medical students to understand medical English vocabulary?

2-What are common difficulties of understanding medical English vocabulary that encountered teachers and medical students together?

3-What are the main problems encountered teachers to access medical English vocabulary?

4-How can Arabaization decisions affect on English language levels of medical students since 1990?

5-What is the impact of type of high school certificate on English language levels of medical students?

6- Did the English language syllabus have good outcomes for graduated medical students?

7- Did medical students study Medical English language syllabus at Faculty of Medicine?

8- Are medical students used suitable learning strategies for understanding medical English vocabulary?

9-What are sufficient teaching strategies should be adopted by Faculty of Medicine, to help medical students improving medical English vocabulary?

10-What are most effective strategies that medical students used for learning medical English vocabulary?

11-What are your suggestions to develop optimal teaching and learning strategies of medical English vocabulary?

Appendixes (4)

Vocabulary Test

Certificate type in secondary school ………………………………………

Question 1

Match these words for types of pain with their descriptions.

1- a throbbing pain   a   feels like it is eating you   ☐

2- a sharp pain   b   travels fast along part of your body   ☐

3- a burning pain   c   is steady and not too painful   ☐

4- a stabbing pain   d   feels like a muscle is being squeezed   ☐

5- a shooting pain   e   feels like something sharp is stuck into you ☐

6- a dull ache   f   comes and goes rhythmically   ☐

7- a gnawing pain   g   feels like fire   ☐

8- a cramping pain   h   is strong and sudden   ☐

Question 2

Match the conditions (1- 8) with the organs affected (a - h), using your medical knowledge.

1 - hepatitis   …………   **a** bladder

2 - pneumonia   …………   **b** gall bladder

3 - nephritis   …………   **c** heart

4 - gastric ulcer   …………   **d** kidney

5 - cystitis   …………   **e** liver

6 - angina pectoris   …………   **f** lung

7 - cholecystitis   …………   **g** stomach

8 - ulcerative colitis   …………   **h** large bowel

Q 3- Match the symptoms (1 – 5) to the questions (a – e), using your medical knowledge.

1-dysuria   a What is your breathing like?

2-dysphagia   b Do you have any pain when you pass water?

3-diplopia   c Do you have any difficult with your speech?

4-dysphasia   d Do you have any trouble swallowing?

5-dyspnoea   e Is your vision normal?

Q 4 -Make word combinations using a word from each box. Two words can be used twice.

consulting	centre	
general	practice	
group	specialties	
health	medicine	
internal	practitioner	
surgical	rooms	

Q 5 - Complete the sentences with the correct grammatical form of **carry out**.

1. I now intend …………………………………a large study.

2. Unfortunately few properly controlled trials …………….……………… so far.

3. A number of studies ……………………………………. recently to look at this question.

4. A right hemicolectomy ……………………………………and the patient made a full recovery.

5. This procedure can ……………….……………………… In the emergency department.

Q 6 – Write which hospital departments would be most appropriate for the following patients?

1. a woman in diabetic coma.   ………………………………………….

2. a patient who has just had a radical prostatectomy………………………………………

3. a patient who is to have a skin lesion removed……………………………………………

4. a man with a foreign body in his eye………………………………………………………

5. a woman with a threatened abortion………………………………………………………..