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**Teaching Medical English Terminology through Images and Texts:**  
**A Social Semiotic Evaluation of *Professional English in Use***  
***Medicine* textbook**

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To my loved ones

Fettouma BERKANE

I dedicate this humble work to my family. A special feeling of gratitude to my loved parents, AomarNedri and KeltoumLachab for their support and encouragement, thank you both for giving me everything. My brothers: Idir, Kamel, Mourad. My sisters: Secoura, Ourida, and to the memory of my sister Nora.

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## Abstract

This dissertation attempts to investigate the teaching of medical English vocabulary through using the *Professional English in Use Medicine* textbook in the Department of English at Mouloud Mammeri University of Tizi-Ouzou. First, we have made a thorough analysis of thirteen images and the linguistic texts that accompany them in order to find out whether the linguistic texts and images are related to each other and do complete the meaning of each other. We also conducted an interview with three teachers teaching in the Department of English at Mouloud Mammeri University of Tizi-Ouzou, who have already taught the module of ESP using this textbook. The teaching experience of the participant teachers helped us to find out whether the combination of the linguistic texts and the images in *Professional English in Use Medicine* textbook facilitates the task of teaching Medical English Terminology, and to know whether the three teachers explore both linguistic texts and images during the presentation of their lessons. For the sake of collecting rich data about the research issue, we have based our research on the Social Semiotic Multimodal Approach in relation to ESP teaching. The results obtained show that there is a relationship between the meaning of the linguistic texts and that of the images, and each mode completes the meaning of the other mode. In addition, EFL teachers explore both the linguistic and the visual elements while presenting their lessons. Finally, the multimodal combination used in *Professional English in Use Medicine* textbook facilitates the task of teaching medical English terminology.

# List of Abbreviations

- EFL: English as a Foreign Language
- EMP: English for Medical Purposes
- ESP: English For Specific Purposes
- HP: Hypothesis
- MET: Medical English Terminology
- PEUM: Professional English In Use Medicine
- SFG: Systematic Functional Grammar
- SFL: Systematic Functional Linguistic

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# **General Introduction**

## **General Introduction**

- **Statement of the Problem**

Teaching English as a foreign language has a great importance at many universities around the world as it is the case of Algerian universities, because English is a global language; it is the language of power. Before, the teaching of English as a foreign language was done only through the linguistic mode either written or spoken, and most of the English textbooks were dominated by the written language, whereas images were just a reinforcement to the written context.

Nowadays, however, communication changed and language is no longer considered as the central means of communication; it is used in combination with other non-linguistic modes to transmit messages. Consequently, English textbooks shift from the transmission of knowledge by using only the written language to the combination of the written language with other non-linguistic modes, and this is what is known as “multimodality”.

At the Algerian universities, English Foreign Language (EFL) teachers use textbooks for the sake of facilitating their teaching process. Many studies have dealt with the evaluation of EFL textbooks, and the evaluation of the impact of combining linguistic elements and the visual representations in EFL textbooks on the teaching process. However, less attention has been given to the study of teaching English for Specific Purposes (ESP) through multimodal texts. Guo (2004:215) suggests that ESP/EAP teachers and researchers have to take into consideration multimodality in meaning-making when teaching and to investigate the relation between the visual and verbal modes in different fields. Images should be linked to the linguistic texts in English mainly when the target learners of ESP are foreign learners. Therefore, this paper is going to investigate teaching Medical English Terminology (MET) through the combination of the linguistic texts and images in the

textbook *Professional English in Use Medicine* at Mouloud Mammeri University of Tizi-Ouzou particularly in the department of English.

- **Research Questions and Hypotheses**

This study investigates the following questions about teaching Medical English Terminology through the combination of linguistic texts and images in the textbook *Professional English in Use Medicine* (PEUM).

**Q1.** Do the linguistic texts and the images in *Professional English in Use Medicine* textbook complete the meaning of each other?

**Q2.** Do EFL teachers explore both the linguistic texts and images in *Professional English in Use Medicine* textbook when teaching medical English terminology?

**Q3.** Does the combination of the linguistic texts and the images in *Professional English in Use Medicine* textbook facilitate the task of teaching medical English terminology?

To answer the above questions, we have advanced the following working hypotheses:

**Hp1:** The linguistic texts and the images in the textbook under investigation complete the meaning of each other.

**Hp2:** EFL teachers explore both the linguistic texts and images in *Professional English in Use Medicine* textbook when teaching Medical English Terminology.

**Hp3:** The combination of the linguistic texts and the images in *Professional English in Use Medicine* textbook facilitates the task of teaching Medical English Terminology.

- **Aim and the Significance of the Study**

This research paper is concerned with the investigation of the teaching of medical English terminology through the combination of the linguistic texts and images in *Professional English in Use Medicine* textbook. It has two main objectives, the first one deals with the relationship between the linguistic texts and images, that is, examining whether the two modes complete the meaning of each other or each mode expresses a complete meaning by itself. The second objective is to investigate the impact of combining the linguistic texts and images in the teaching process of medical English terminology.

- **Research Techniques and Methodology**

This study adopts the qualitative method for data collection and data analysis. The data collection of this investigation is drawn from two main sources which are *Professional English in Use Medicine* textbook and an interview to three EFL teachers of Mouloud Mammeri University Tizi-ouzou at the department of English, who have already taught English for Medical Purposes (EMP) using *Professional English in Use Medicine* textbook. The interview aims to sort out teachers' view about the combination of the linguistic texts and images in *Professional English in Use Medicine* textbook. As far as data analysis procedures are concerned, the images and the linguistic texts of *Professional English in Use Medicine* textbook are going to be analysed in terms of the Social Semiotic Multimodal Approach; whereas the interview data is analysed by means of content analysis. In this dissertation, all the works are cited using the Harvard system of referencing.

- **Structure of the Dissertation**

The structure of this dissertation is organised by following the traditional complex model. It consists of a general introduction, four chapters and a general conclusion. First,

chapter one is devoted to the review of literature. It reviews the process of teaching English for Specific Purposes, the teaching process and multimodality, and Social Semiotics theory. Chapter two deals with to the research design. It presents the data collection procedures, which consists of the description of the textbook and an interview which is designed to the teachers who have already used this textbook under analysis. It also explains the procedures of data analysis, which are the Social Semiotic Multimodal Analysis and the content analysis. Chapter three is concerned with the presentation of findings, that is, the results relating to the analysis of the images and linguistic texts and the data obtained from the interviews. Chapter four is related to the discussion of the results obtained in the study aiming to bring answers to the research questions.





# **Chapter 1: Review of literature**

## Introduction

This chapter is a review of the literature of different works related to this research paper. First of all, it reviews the process of teaching English for Specific Purposes and more specifically English for Medical Purposes dealing with vocabulary and teaching materials. Then, it deals with multimodality and the teaching process by considering the ways in which multimodal communication is used in the task of teaching and particularly how it can be applied in teaching English for specific purposes. Finally, it reviews Social Semiotics theory, M.A.K. Halliday's work on Systematic Functional Grammar, and Multimodal Approach.

### 1. Teaching English for Specific Purposes

Teaching is a process of simplifying and facilitating knowledge to learners *“Teaching is guiding and facilitating learning, enabling the learners to learn.”* (H. Douglas Brown, 2007: 08). Teaching consists of demonstrating and aiding learners to acquire knowledge and to make them better understand more the information provided; hence, as H. Douglas Brown states: *“showing or helping someone to learn how to do something, giving instructions, guiding in the study of something , providing with Knowledge , causing to know or understand.”*(2007: 08). The same process is applied to teaching English language for the learners according to the specific context in which they need to use English language; from general English to English for specific purposes. English for specific purposes focuses on providing classes depending on learners' aims and needs to learn English (Hutchinson and Waters, 1987: 03). Dudley-Evans (1991: 298) defines ESP as *“the careful research and design of pedagogical materials and activities for an identifiable group of adult learners within a specific learning context”* (cited in Peter Master, 2005: 99). ESP deals with specific topics according to the context in which it is used as law, economy, business, technology, and English for Medical Purposes. EMP is based on specialized interactions and it focuses more

specifically on the written language even though it deals with the spoken language in different activities such as seminar performances (Ferguson, 2013:247). The discipline of medicine has great amount of technical vocabulary, and most of the medical vocabulary is originated from Greek and Latin languages (Ferguson, 2013:253).

In order to facilitate the task of teaching English for Medical Purposes, teachers use different teaching materials such as textbooks. Thus, teachers have to select the appropriate textbooks to fit their students' needs by providing them with a great amount of knowledge in simple way to ensure their understanding. According to Ferguson (2013:258), among the well-recognized and recent EMP textbooks are: English in Medicine (Glendinning and Holmström 2005), "Good Practice" (McCullagh and Wright 2008) and "Professional English in Use Medicine" (Glendenning and Howard 2007).

## **2. The Teaching Process and Multimodality**

As communication develops, new ways of acquiring and transmitting knowledge have also changed. Language is not the only mode used in learning and teaching but it is one mode among other modes in the field of teaching and learning.

Learning can no longer be treated as a process which depends on language centrally, or even dominantly. Our data reveals conclusively that meaning is made in all modes separately, and at the same time, that meaning is an effect of all modes acting jointly. (Gunther Kress et al, 2001: 01).

The process of teaching and learning in the classroom is no longer communicated through only the means of spoken and written language, but it goes further than linguistic properties to a multimodal communication in which the teaching and learning process is transmitted through other various modes of communication such as space, sound, image, gesture, and colour alongside with language. All these modes together are combined to convey a communicative meaning (Pippa Stein, 2008: 01). There is a shift from the supremacy of the language to the supremacy of the image as Gunther Kress puts it: "*the broad move from the*

*centuries-long dominance of writing to the new dominance of the image”* (2003: 01). Teaching needs to be multimodal; to be equilibrated between linguistic and visual elements as Kristie S. Fleckenstein (2002: 04) states: *“The scales of meaning and teaching need to be balanced so that word no longer eclipses image. Language is not the sole, perhaps not even the primary, means by which we create meaning of our worlds”*. Since the process of teaching and learning is no longer communicated only through language, it is transmitted through multimodal communication, and this consequently may be applied to teaching and learning ESP as Paul Prior states:

This chapter does not aim to offer a comprehensive review of all relevant work in ESP, but instead to consider some of the ways that questions of multimodality have been broached and framed as well as ways multimodality might be understood as a central, critical dimension of ESP research. (2013: 520).

Multimodality should be included in the teaching of ESP in order to facilitate the task of learning as Guo suggested

I also suggest that multimodal construction of meaning should be reflected in ESP/EAP assessment...called multimodal social semiotics, the nature and complexity of scientific discourse and how they might be more effectively taught to ESP/EAP students may be further explored (2004: 216).

Paul Prior mentioned that Guo (2004) referred to multimodal teaching ESP in the chapter when he analyses the visual and the linguistic modes of biology textbook (2013: 523). Guo (2004: 215) suggests that ESP/EAP teachers and researchers have to take into consideration multimodality to make meaning in teaching and to investigate the relationship between the visual and verbal modes in different fields. Images should be linked to the linguistic texts in English especially when the target learners of ESP are English foreign learners.

### 3. Social semiotics

Social semiotics is one of the major schools of semiotics. It emerged in the second half of the 1980's by members and co-workers of the Sydney semiotic circle. It is influenced by the work of M.A.K. Halliday especially in his study of Systemic Functional Grammar (Chandler, 2007: 219). Social Semiotics deals with the procedure of meaning-making through using different modes of communication including linguistic as well as non-linguistic elements such as visuals, gestures, sounds and so on in relation to the social context in which meaning is constructed, as Jan Connolly (2008: 160) states that Van Leeuwen (2005: 93) categorizes social semiotics *"as a process of meaning-making enquiry and explains that it 'it explores two closely related issues :the material resources of communication and their socially generated use to produce meanings'"*. According to Halliday, social semiotics is a system of meaning in relation to social and cultural context. Halliday further states *"So when I say 'social semiotics', in the first instance I am simply referring to the definition of social, or culture, as a system of meaning"* (Halliday and Hasan, 1989: 03).

Social semiotics is a theory which is concerned with all forms of meaning in social event and cultural sitting (Kress, 2010: 02). Halliday defines semiotics as the study of sign system or the study of meaning rather than as the study of signs (Halliday and Hassan, 1989: 03-04). Add to this, Victor Lim Fei (2004: 51) states: *"redefines the boundaries of semiotics from 'a study of signs' to 'a study of sign system'"*, this means that Semiotics moves from the study of signs to the study of sign system. One of the main characteristics that differentiate the social semiotic school from the European structural school is the notion of '*sign*'. Said differently, the Saussurian sign in the structural school becomes a semiotic resource in the social semiotic school (Jewitt & Oyama, 2001: 134). The semiotic resource is a basic concept

in social semiotics; it is initiated from the work of M.A.K. Halliday on SFG. For Halliday (1978:192), language is not a set of rules for making correct sentences; however, it is '*a resource for making-meaning*' (Cited in Van Leeuwen, 2005: 03). Semiotic resources include language communicated in written form along with images, mathematical symbols and other technical representations (Victor Lim Fei, 2004: 51). However, this does not mean that semiotic resources are limited to language be it spoken or written and images; it includes everything related to social and cultural meanings (Van Leeuwen, 2005: 04).

### **3.1. M.A.K. Halliday' Systemic Functional Grammar**

M.A.K. Halliday developed an approach which is called '*systemic functional grammar*', '*rank –scale grammar*', '*systemic grammar*', or as Halliday names it '*social semiotics*' (Leo Van Lier, 2004: 73). In SFL, the meaning of sign is determined by the social and the cultural contexts, where making choices from the system of network is produced (O'Halloran, 2005: 07). Language is a semiotic system, a system of meaning-making which is flexible; it has the ability to change, a new meaning is always there to be produced (Halliday, 2009: 60). For Halliday, language is a complex system of meaning because it has Infinite grammatical structures and no precise restrictions (2003: 02). One of the reasons that make SFL very complex is due to the complexity of language (Halliday, 2009: 61). Language is a system of meaning among other systems of meaning, which are combined together to construct a cultural meaning, it is a semiotic resource that carries meaning in relation to social structure (Halliday and Hasan, 1989: 04). The text is the basic unit in the study of language; it serves to explain, to define what language is. The text is above the linguistic structure; it is all that is cultural and social, to study and to clarify more language, it acquires the study of text which includes both the linguistic structure of the text and the context, in other words, the environments in which the text is produced ( Halliday et Hasan, 1989:05).

Halliday has based on Malinowski's work (1923) to show more the necessity of the notion of the context, to understand and to explain more what a text is. Malinowski has divided the notion of context into two: one is the context of situation, and the other is the context of culture (Cited in Yassine, 2012: 36). For Malinowski, the context of situation refers to '*the environment of the text*' (Halliday and Hasan, 1989: 06). According to Halliday, the context of situation contains three concepts: the field, the tenor, and the mode of discourse which are important for the interpretation of the social context of texts. The field is the topic, or the content of the subject; it is about the social events that occur. The tenor is the kind of the relationship between the communicators, and the mode is concerned with whether language is spoken or written and the means in which it is transmitted (Unsworth, 2008: 02). As for the context of culture, it is the largest one, the whole set of cultural background. For Halliday the context of culture is:

... There is also a broader background against which the text has to be interpreted: its context of culture. Any actual context of situation, the particular configuration of field, tenor, and mode that has brought a text into being, is not just a random jumble of features but a totality- a package, so to speak, of things that typically go together in the culture. People do these things on these occasions and attach these occasions and attach these meanings and values to them; this is what a culture is (Halliday and Hasan: 1989).

Language is structured into three metafunctions: the ideational, interpersonal, and textual metafunction. The ideational metafunction deals with the subject or the topic of the event. The interpersonal metafunction is concerned with the kind of the relationship between the participants, the social context in which the communication is made, and what roles the participants are playing. The textual metafunction is related to the structure of the language (Van Lier, 2004: 74).

### **3.2. Multimodality**

Multimodality is derived from social semiotics; that is "*the social semiotic school as one major driving force behind multimodality.*" (Hartmut Stöckl, 2004: 10). Kress and Van



Leeuwen (2001: 20) defined multimodality as the combination of different semiotic modes such as linguistic and non-linguistic (images, sounds, gestures, videos, music, and so on) in relation to social and cultural contexts for meaning making (Cited in Hofinger and Ventola, 2004: 195). Social semiotics is developed thanks to various works of Kress, Van Leeuwen (1990, 1996, and 2001) and O'Toole (1994, 1999) which bring important contributions to the study of multimodality (Hofinger and Ventola, 2004: 194).

The three metafunctions of Halliday: ideational, interpersonal, and textual are applicable to different modes of communication, linguistic and non-linguistic such as visual, gestures, sounds, music, and all modes that serve to communicate; hence, *“The three Hallidayan metafunctions (Halliday 1994) would be the first principle that can easily apply to all modes imaginable and to the multimodal text as a whole.”* (Harmut stöckl, 2004: 25). The three metafunctions of language are applied by Kress and Van Leeuwen to non-linguistic modes mainly the visual mode in their work *“Visual Grammar”, “Reading Images: The Grammar of Visual Design”* (1996 and 2 nd edn 2006) (Pippa Stein, 2008: 20). Kress and Van Leeuwen adopted the three metafunctions of making meaning for the analysis of images; these metafunctions become:

- *Representational/ ideational* structures verbally and visually construct the nature of events, the objects and participants involved, and the circumstances in which they occur.
- *Interactive/interpersonal* verbal and visual resources construct the nature of relationships among speakers/ listeners, writers/ readers, and viewers and what is viewed.
- *Compositional/textual* meanings are concerned with the distribution of the information value or relative emphasis among elements of text and image. (Len Unsworth, 2008: 03).

### **3.2.1. Multimodal Texts**

Multimodal text is a text which combines different elements, linguistic and non-linguistic to contribute to the whole meaning. In fact *“All texts are multimodal...In these*

*multimodal forms of communication, language is decentred as well as the traditional boundaries between language, image, page layout and document design” (Iedema 2003: 33 cited in Pippa Stein, 2008: 25).*

Since multimodal texts include different semiotic resources such as images, Kress and Van Leeuwen have distinguished two different types: ‘demand’ and ‘offer’ images. The demand image is the interaction between the viewers and what is represented in the image, in other words, there is a contact between what is shown in the image and the viewers as what is depicted the image asks the viewers to react. Whereas the offer image means absence of the interaction between the viewers and what is depicted in the image. There is no contact between the two types. The image is there to provide the viewers with what is represented in the image (Kress and Van Leeuwen, 2006: 120).

### **3.2.1.1. Composition**

Composition is defined by Van Leeuwen as being “*about arranging elements –people, things, abstract shapes, etc. - in or on a semiotic space- for example, a page, a screen, a canvas, a shelf, a square, a city.*” (Van Leeuwen, 2005: 198). According to Van Leeuwen and Kress, composition contains three principles: information value, salience, and framing. Van Leeuwen and Kress applied to a multimodal texts “*These three principles of composition apply not just to single pictures...they apply also to composite visuals, visuals which combine text and image.*”(2006: 177). They defined these three principles as below:

#### **a) Information Value**

Information value is related to the space where the elements are arranged in the images that left and right, top and bottom, centre and margin. (Kress and Van Leeuwen, 2006:177). Left and right are presented as the ‘given’ and ‘new’. When an element is arranged in the left

it refers to the given information which means something which is previously known and familiar for the viewers. When the element is in the right, it refers to the new information which means that something is unknown for the viewers and should be taken into consideration (Kress and Van Leeuwen, 2006: 181). Top and bottom are presented as the 'ideal' and 'real'. When an element is placed in the top it means that it is the ideal which means is a general information; and when the element is placed in the bottom it means that it is the real and it refers to the detail information (Kress and Van Leeuwen, 2006: 187). As far as the centre and margin are concerned, the centre is when something is placed in the middle and it means that it is the basic element of the information, whereas the margin refers to all the elements that surround the centre and which are considered as secondary information that are needed by the centre (Kress and Van Leeuwen, 2006: 196).

## **b) Salience**

Salience refers to the various degrees to which the elements are used to attract more the viewers either by dissimilarities in colour, size, placing an element in the centre, and dissimilarities in shape (Kress and Van Leeuwen, 2006:177).

## **c) Framing**

Framing is the disconnection or the connection of elements in the image (Kress and Van Leeuwen, 2006:177). Framing refers to the space where the image and text are placed and whether they are connected or disconnected. Van Leeuwen summarized framing as follows:

- **Segregation:** when the elements are placed in different spaces, so they are not in the same instructions.

- **Separation:** when the elements are disconnected or separated by a blank space, so they are similar in some points and dissimilar in others.
- **Integration:** when a picture and text are placed in the same space, and then may the text combined in pictorial space or the picture which is combined in the text space.
- **Overlap:** when part of a picture may be broken by letters of the linguistic text or the picture or part of it in the text space.
- **Rhyme:** even two elements are separated but they have the same feature as shape.
- **Contrast:** when two elements are dissimilar for example in colour. (Van Leeuwen, 2005:13)

## **Conclusion**

The review of literature in this chapter highlights the teaching of English Language for Specific Purposes. It emphasizes on teaching English for Medical Purposes focusing on vocabulary and teaching materials. It also deals with the teaching process using multimodality which shows the use of multimodal communication in teaching process according to different works that have been done in this field. It introduces multimodal communication in teaching English for Specific Purposes. It reviews Social Semiotics Theory and the major works that have been done in this discipline; and finally it deals with the Multimodal Approach.

# **Chapter 2: Research Design**

## Introduction

This chapter is methodological. It deals with the research design of the study. It describes the data collection and data analysis procedures used to carry out the investigation and to find answers for the research questions. It consists of two main sections. The first section deals with the data collection tools, and provides the description of the corpus which consists in the *Professional English in Use Medicine* textbook, and the interview to the teachers. The second section deals with the data analysis procedures, which consists in the Social Semiotic Multimodal Analysis used to analyse the data obtained from the textbook, and content analysis used to analyse the interview data.

## 1. Data Collection Procedures

### 1.1. Research Method

This research has adopted the qualitative method for data collection through using the textbook PEUM, and ethnographic investigation of field work; an interview with ESP teachers who have already used this textbook.

#### 1.1.1. The description of the Textbook

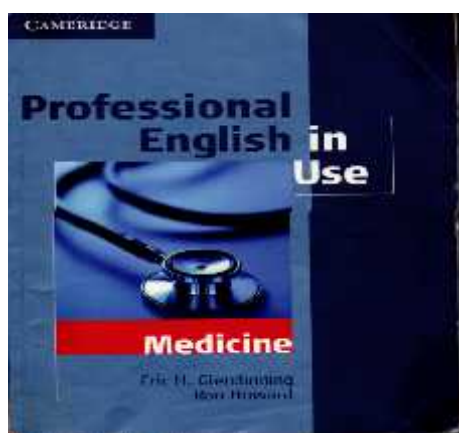


Image 1: “PEUM” Front Cover



Image 2: “PEUM” Back Cover

The corpus of this research is *Professional English in Use Medicine* textbook. The authors of this textbook are “Eric H.Glendingning” and “Ron Howard”. It was first published in 2007 by Cambridge University Press. The level of this book is intermediate to upper-intermediate; the model used is British English, as mentioned in its introduction (pp.: 8-9).It can be used for self-study or with teachers in the classroom.

The textbook is organized into four parts. The first part covers medical topics and communication skills. It consists of sixty units; each set of units is grouped into categories and each one is labelled as the following: the first category is labelled BASICS; it covers four units: the first unit is called Health and illness. The second unit is called Parts of the body1. The third unit is called Parts of the body 2. The fourth unit is called Function of the body. The second category is named MEDICAL AND PARAMEDICAL PERSONNEL AND PLACES. It covers six units: the first unit is called Medical practitioners 1. The second unit is called Medical practitioners 2. The third unit is called Nurses. The fourth unit is called Allied health professionals. The fifth unit is called Hospitals. The sixth unit is called Primary care. The third category is Called EDUCATION AND TRAINING, it includes three units: the first unit is called Medical education 1. The second unit is called Medical education 2. The third unit is called the overseas doctor. The fourth category is named SYSTEM, DISSEASES AND SYMPTOMS it covers twenty units, they are as follows: the first unit is called Symptoms and signs. The second unit is called Blood. The third unit is called Bones. The fourth unit is called Childhood. The fifth unit is called the endocrine system. The sixth unit is called the eye. The seventh unit is called the gastrointestinal system. The eighth unit is called Gynaecology. The ninth unit is called the heart and circulation 1. The tenth unit is called the heart and circulation 2. The eleventh unit is called Infection. The twelfth unit is called Mental illness. The thirteenth unit is called the nervous system 1. The fourteenth unit is called the nervous system2. The fifteenth unit is called Oncology. The sixteenth unit is

called Pregnancy and childbirth. The seventeenth unit is called the respiratory system. The eighteenth unit is called the skin 1. The nineteenth unit is called the skin2. The twelfth unit is called the urinary system. The fifth category is entitled INVESTIGATIONS; it includes six units: the first unit is called Basic investigations. The second unit is called Laboratory tests. The third unit is called Endoscopy. The fourth unit is called X-ray and CT. The fifth unit is called MRI and ultrasound. The sixth unit is called ECG. The sixth category is called TREATMENT; it covers three units: the first unit is called Medical treatment. The second unit is called Surgical treatment. The third unit is called Therapies. The seventh category is called PREVENTION; it includes one unit which is called Screening and immunization.

The eighth category is EPIDEMIOLOGY; it covers one unit which is called Epidemiology. The ninth category is ETHICS; it includes one unit which is called Medical ethics. The tenth category is RESEARCH; it covers one unit which is called Research studies. The eleventh category is TAKING A HISTORY; it includes three units: the first unit is called Taking a history 1. The second unit is called Taking a history 2. The third unit is called Taking history 3. The twelfth category is EXAMINATION; it contains two units: the first one is called Physical examination. The second one is called Mental state examination. The thirteenth category is EXPLANATION; it covers three units: the first unit is called Explaining diagnosis and management. The second unit is called Discussing treatment. The third unit is called Giving bad news. The last category is PRESENTATION; it includes six units: the first unit is called Data presentation 1. The second unit is called Data presentation 2. The third unit is called Research articles. The fourth unit is called Abstracts. The fifth unit is called Conference presentations. The sixth unit is called Case presentations. We are interested in the left-hand pages of the units, which present medical topics using visual images.



The second part contains six appendices useful for a more illustration and development. The third one contains answer key to the exercises. The fourth one is the index. Each unit is composed of two pages. The left-hand page presents the key vocabulary for each theme or skill area as well as information about typical collocation. The right-hand page includes exercises to practice the different words and expressions presented in the left-hand page. At the end of each unit, there is an over to section that permits to students to enter in a discussion with each other in the classroom. This section can be a written activity and it helps for role play.

### **1.1.2. Interview**

Interviewing is a way of gathering data, it “*involves presentation of oral-verbal stimuli and reply in terms of oral-verbal responses*” (C.R Kothari, 1990: 97). It requires an interviewer who asks questions to an interviewee (s). As C.R Kothari notes:

The method of collecting information through personal interviews is usually carried out in a structured way. As such we call the interviews as structured interviews. Such interviews involve the use of a set of predetermined questions and of highly standardized techniques of recording. Thus, the interviewer in a structured interview follows a rigid procedure laid down asking questions in a form and order prescribed (1990:97).

In interviews, questions are prepared in advance and generally they include open-ended and closed-ended questions. In open-ended, the respondent is free to give the answer he/she thinks it is appropriate. In closed-ended questions, the answers are predetermined; the respondent is not free to answer because the answers are suggested by the researcher.

After asking for the permission of three teachers working in the department of English, they agreed to take part in this interview and provide us with answers that will serve in this research. The interview took place in the department of English at Mouloud Mammeri University of Tizi-ouzou, in a period of time between 29 June 2015 and 15 July 2015, with three teachers working in the department of English, who are selected randomly. The

teachers have already taught ESP using *Professional English in Use Medicine* textbook. The type of interview used in this research is a structured interview; it consists of eight predetermined questions. The eight prepared questions are asked orally to each teacher, and they answered orally spending five to twelve minutes while an audio-recording is used to record teachers' natural answers, in order not to waste time writing the answers. After this, the recorded answers have been written down for analysis.

## **2. Data Analysis Procedures**

### **2.1. Social Semiotics Multimodal Analysis**

The textbook *Professional English in Use Medicine* is analysed by adopting the Social Semiotic Multimodal Approach, based on the theoretical frameworks described in the Review of Literature (Chapter One). First of all, relying on Halliday's field, tenor and mode to analyze the linguistic texts of the textbook. The field is the topic, or the content of the subject, is about the social events that is occurred, the tenor is the kind of the relationship between the communicators, and the mode is concerned with whether language is spoken or written and the means in which it is transmitted (Unsworth, 2008: 02).

Second, the images of the textbook are analysed using the three metafunctions of language developed by M.A.K.Halliday. Then, these three metafunctions are extended by Kress and Van Leeuwen to what is beyond linguistic mode which is the visual mode. Kress and Van Leeuwen include this in their work "Visual Grammar", "Reading Images: The Grammar of Visual Design" (1996 and 2 ndedn 2006) (Pippa Stein, 2008:20). The three metafunctions are the representational, interactive, and compositional. The Representational metafunction is the content of the visual representation, it deals with what happens. The interactive metafunction is the type of the relationship between the viewers and what is viewed (Len Unsworth, 2008: 03). The compositional metafunction deals with the

combination between visual and text (Kress and Van leeuwen, 2006: 177). It contains three principles: information value, salience, and framing. Information value is related to the space where the elements are arranged in the image such as left and right, top and bottom, centre and margin (Kress and Van Leeuwen, 2006: 177). Framing is the disconnection or the connection of elements in the image (Kress and Van Leeuwen, 2006: 177). Framing is summarized by Van Leeuwen as segregation, separation, integration, overlap, rhyme and contrast. They are the two concepts that are used for the analysis of the textbooks' images.

## **2.2. Content Analysis**

In order to analyse the data collected through the interview, Content analysis was used. Content Analysis is a research technique that permits to analyse different written materials, not only texts, but it goes beyond this. Klaus Krippendorf defines it as *“a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use”* (2004: 18). This means that Content Analysis does not take only texts as data, but data may include: images, maps, sound, signs, and so on because they are considered as texts and they can be analysed. In addition *“Content analysis takes texts and analyses, reduces and interrogates them into summary form through the use of both pre-existing categories and emergent themes in order to generate or test a theory”* (Cohen et al, 2011: 564).

To succeed in doing the analysis of the *“interview transcripts”* (Cohen et al, 2011: 565), the different steps of Content analysis are followed. First, it consists of the selection of a text as a unit of analysis, in this research the unit of analysis is the teacher's interview answers, *“Interview transcripts”*. Then, decide on codes to be used, *“a code is a word or abbreviation sufficiently close to that which it is describing for the researcher to see at a glance what it means (...)”* (Cohen, et al, 2011: 560), this means that the codes sorted out can

be abbreviations or words. We have to know what the codes can be about, Cohen, L *et al* (2011:559) stated that according to Gibbs (2007: 47-8), coding can be selected on the basis of:

many kinds of data, focusing on, for example: specific acts, conversation, reports, behaviours, events, interactions, activities, contexts, settings, conditions, actions, strategies, practices, tactics, meanings, intentions, states, symbols, participation, relationship, constraints, causes, consequences and issues concerning the researcher's reflexivity. In short nothing is rules out. (2011: 559).

Finally, *“This stage of constructing the categories is sometimes termed the creation of a ‘domain analysis. This involves grouping the units into domains, clusters, groups, patterns, themes and coherent sets to form domains”* (Cohen, L et al, 2011: 566). These codes will be grouped into categories, which will be later on compared to each other. All the categories of one teacher's answers will be compared to the categories of the other teachers.

## **Conclusion**

This chapter highlights the research design of this study. It first describes the procedures of data collection, it explains how the data are collected, using an interview for three teachers who have already taught the module of ESP using the textbook *Professional English in Use Medicine*. The same textbook contains the basic corpus under study. The second part describes how these data collected are analyzed. The choice of content analysis to explain, interpret and analyze the interview transcripts is due to the fact that it is the most frequent technique used in social sciences. It permits to analyze the validity of the hypotheses advanced in the general introduction. The composition of texts and images are analyzed using Social Semiotic theory.

# **Chapter 3: Presentation of the Findings**

## **Introduction**

This chapter presents the results of the data analysis which consists of two parts. First, it presents the findings obtained from *Professional English in Use Medicine* textbook applying a Social Semiotic Multimodal Analysis of images and linguistic texts. Second, it shows the results obtained from the interview which using the content analysis method. The aim of this chapter is to highlight the images-linguistic texts relation, the teachers' exploration of the combination between images and texts in PEUM textbook, and the use of the combination of images and linguistic texts to facilitate the teaching process of medical English.

### **1. Social Semiotics Multimodal Analysis of Textbook**

This research deals with only 19 units of PEUM textbook which contain images in the left hand-pages, since this study deals only with the left hand-pages. Indeed, there are 27 images in the 19 units but we are going to analyse only 13 images. Thus, only 13 linguistic texts that correspond to the 13 images are concerned with the analysis.

## 1.1. A Social Semiotic Multimodal Analysis of Images

		Metafunctions			
Units	Types of images	Representational	Interactive	Compositional	
				Information value	Framing
Unit 2: Parts of the body 1	Image (1) Diagram.	It represents a male human body from both external sides front and back .It shows different parts such as jaw, neck, shoulder, and armpit and so on.	It is an offer image; it gives information about how the different parts of the body look like, there is no direct interaction between the viewers and what is represented in the diagram.	The image is on the left.	The image is separated by empty space from the text.
Unit 3: Parts of the body 2	Image (2) Diagram.	It represents the abdominal organs such as stomach, pancreas, duodenum, gall bladder, liver, right kidney, and left kidney.	It is an offer image; it informs the viewers about how abdominal organs look like.	The image is in the centre.	The image is separated from the space of the text.
Unit 5: Medical practitioners 1	Image (3): Photograph	It represents a doctor who is in her office, holding glasses in her hand, wearing a stethoscope in her neck.	It is demand image; the doctor has direct eyes with the viewers to show confidence and with a smile face to show sympathy. As it ask the viewers to trust her.	It is the bottom-right side.	it is separated from text ; it occupies the right space whereas the text is in the left
Unit 8: Allied health professionals	Image (4): photograph	It represents an artificial limb, it decontextualized with a black background.	It is an offer image; it provides information how an artificial limb is.	It is in the right.	It is separated from the space of the text.

Unit 16: Bones	Image (5): Diagram	It represents five human bones which are broken differently.	It is an offer image; it shows to the viewer's different types of bones' fracture.	It is in the centre	It is separated from the text.
Unit 18: The endocrine system.	Image(6): Diagram.	It represents negative feedback system.	It is an offer image.	It is on the right	It is integrated in the text.
Unit 19: The eye	Image(7): Computer-generated	It represents different external parts of the human eye such as eyebrow, eyelashes, pupil, iris, and eyelid.	It is an offer image; it provides information about different parts of the eye.	It is the top -centre	It is separated in the text.
Unit 21: Gynaecology	Image(8) Diagram	It represents female reproductive system which has different parts such as womb, fallopian tube, ovary, neck of womb, vagina.	It is an offer image; it informs the viewers about different parts that the female reproductive system includes.	It is on the top centre	It is separated from the text.
Unit 27: The nervous system 2.	Image (9) Photograph	It represents a doctor which tests the knee jerk of a patient using a tendon hammer.	It is an offer image which explains where the doctor exactly tests the knee jerks reflexion with a tendon hammer.	It is in the right centre side.	It is separated from the text.
Unit 29: Pregnancy and childbirth	Image (10) Photograph	It represents the Obstetric forceps	It is an offer image.	It is in the bottom-right side	It is separated from the text.
Unit 32: The skin 2	Image (11) Computer-generated	It represents a young child sad face with some fractures in his nose just right, right side of his forehead, and in his right upper lid.	It is an offer image, which explains where the fractures are received in all his head.	It is in the right side.	It is separated from the text.



Unit 34: Basic investigations	Image (12) Cartoon	It represents a sphygmomanometer which is used to diagnosis the blood pressure and a stethoscope which is used to hear the sound of blood rushing back through the artery.	It is an offer image since it informs the viewers about the constitution of a sphygmomanometer and stethoscope.	It is in the centre side.	It is separated from the text
Unit 41: Surgical treatment	Image (13): photograph	It represents a surgeon puts gowns, masks, gloves.	It is an offer image.	It is in the Top -right	It is separated from the text.

**Table 1: A Social Semiotic Multimodal Analysis of the Images**

## 1.2. A Linguistic Analysis of Texts

This part deals with the analysis of the linguistic texts that correspond with the thirteen images.

Units	Pages	Texts	Field	Tenor	Mode
<b>Unit 2: Parts of the body 1</b>	Twelve	Text (1) Part of the body	The text is about the names of the external parts of the human body which have some names only in ordinary English and other names have specific medical terminology in addition to the ordinary names.	The authors address the readers who want to learn medical English terminology. Their aim is to inform the readers about the names of different parts of the body that are shown in the diagram. And to inform the readers that there are some parts of the body which have only the English ordinary names and other parts which have medical English names in addition to the ordinary names.	The text is written to be read. It is divided into three parts: the first is as introduction to the main topic of the text, the second one has a form of word list which are the names of the parts of the body which are numerated; each name has a number that corresponds to the number of each part of body in the diagram. The last part is as small note to the readers. This text has not written in the same space. The first part is above the diagram, the second in the right of it, and the last is below of it.
<b>Unit 3:Parts of the body 2</b>	Fourteen	Text (2) The abdomen.	This text provides information about some abdominal organs which have some ordinary English names but when it comes to the adjectives they have anatomical names but other organs such as the pancreas has only anatomical names. This text provides medical	The authors address the readers who want to have knowledge about the medical English names related to the abdominal organs. And to learn the names of the abdominal organs in medical English.	The text is written to be read. It is divided into three parts: The first part is as an introduction to the topic , the second part Medical English Names which are linked with the diagram, and the last part as small remarks .

			English vocabulary which is related to the abdominal organs and how the doctors talk about the digestive system.		
<b>Unit 5: Medical practitioners 1</b>	Eighteen	Text (3) Choosing a specialty	This text is about what recent graduated doctor tells about her future plan in choosing a speciality in medicine.	The authors of the book reported this text to inform the readers about some specialities in medicine and how to use some phrasal verbs in general English.	The text is written to be read. However I can achieve as s spoken mode
<b>Unit 8: Allied health professionals</b>	Twenty-four	Text (4) Prosthetists and orthotists	This text is about explaining some medical terms such as prosthetics, orthotists and by giving them the equivalent meaning.	The authors aim at explaining more the meaning of the medical terms for the readers to better understanding.	The text is written to be read.
<b>Unit 16: Bones</b>	Forty	Text (5) Fractures	This text is about the different names of fracture' types of the bones and explaining the meaning of other fracture' types.	The authors inform the readers about the names of different types of the bone 'fractures and explain other types of the bone' fracture.	The text is written to be read.
<b>Unit 18: The endocrine system</b>	Forty-four	Text (6) Negative feedback system	This text is about the Negative feedback system	The authors inform the readers how the negative feedback system works.	The text is written to be read.
<b>Unit 19: The eye</b>	Forty-six	Text (7) Parts of the eye	This text is about the different names of the different parts that the human eye consists of.	The authors address the readers who are interested in learning the medical English terms concerning the parts of the eye.	The text is written to be read.

<b>Unit 21: Gynaecology</b>	Fifty	Text (8) The female reproductive system.	This text is about the different names of the parts of the female reproductive system.	The authors inform the readers about the medical terminology of the female productive system.	The text is written to be read.
<b>Unit 27 : The nervous system 2</b>	Sixty-two	Text (9) Tendon reflexes.	This text is about explaining the testing tendon reflexes' procedure and the medical terminology related to it.	The authors help the readers to learn more the medical terminology related to the testing tendon reflexes.	The text is written to be read.
<b>Unit 29: Pregnancy and childbirth</b>	Sixty-six	Text (10) presentation and lie.	This text is about the description of the fetal lie.	The purpose is to explain to the readers.	The text is written to be read.
<b>Unit 32:The skin 2</b>	Seventy-two	Text (11) Case report	This text is a description of some injuries of the child's skin, each type of the injury has its specific name.	The purpose is to make readers learn some medical terminology which are related to some different types of injury.	The text is written to be read.
<b>Unit 34: Basic investigations</b>	Seventy-six	Text (12) Blood pressure	This text is about defining a stethoscope and its function	The purpose is to inform the reader about the name of this medical tool and for what it is used?	The text is written to be read
<b>Unit 41: Surgical treatment</b>	nighty	Text (13) The operating theatre	This text is about what a surgeon has to take care before starting a given surgery.	The purpose is to inform the readers about some medical terms related to the operating theatre.	The text is written to be read

**Table 2: A Social Semiotic Analysis of Texts.**

To sum up, the results obtained from the textbook after a Social Semiotic Multimodal Analysis, shows that there are four types of images including diagram, photograph, computer generated, and cartoon. First, all the images which are of the diagram type have a relation with the linguistic texts that accompany them. Then, all the images which are of photograph type have a relation with the linguistic texts that accompany them except the image (3) and the image (10) which have no relation with the text that accompany them. Next, both the images (7) and (11), which are of the computer generated form, are related to the linguistic texts that accompany them. Finally, the image (12) which is the only one of cartoon type is related to the text that accompanies it.

## **2. Interview Data Analysis**

The second data collection tool used in our research is the interview to ESP teachers. It helps to gain more details and to answer the research questions. It is analyzed using content analysis method. The following are the detailed results of the content analysis of the interview transcripts.

### **Question one: Do you use the visual representations in the textbook as a support or as the main element to teach Medical English Terminology?**

According to the first teacher, it is an obligation and a necessity to use visuals as reinforcement and an illustration to the technical words. The second teacher uses those visual representations just as support for the understanding of some terms. The third teacher says that visual representation is an efficient tool; he highlights its importance in the teaching-learning process and adds that it is a facilitator tool.

**Question two: Is the exploration of linguistic elements alone in this textbook sufficient to facilitate the task of teaching medical English vocabulary?**

According to the first teacher, the exploration of linguistic features alone is not sufficient, so there is need to go beyond it. The second teacher argues that the exploration of linguistic elements in this textbook alone is not enough and requires more efforts. As stated by the third teacher, the linguistic elements in this textbook are not sufficient for the task of teaching medical English terminology.

**Question three: Do you use the images in this textbook to illustrate the content of the lesson?**

The first teacher's answer to this question is with high percentage of certainty; he mentions the necessity of using the images (certainty and necessity). The second teacher answers that she uses them just when it is necessary. The third teacher says that the use of images is necessary and courses should focus on the illustration using images.

**Question four: How do you find the combination of the visual and the linguistic elements in the textbook in transmitting the message?**

The first teacher highlights that it is a positive point and mentions it with certainty (sure). The second teacher highlights that their implementation in the textbook is a positive point. The third teacher says that this combination is very important and it is a good technique to better transmit the message.

**Question five: Do your students prefer to learn using both visual and linguistic elements or by using only one element?**

The answers provided by two teachers are the same. The first teacher's answer is that students' likes, are attracted and are motivated when using both visual and linguistic elements. The second teacher's answer is that students prefer when learning using both visual and linguistic elements. Both of them highlight the students' preference to such composition. Whereas the third teacher never explored the issue, but he explained that theoretically speaking this composition is helpful.

**Question six: Do you find difficulties when explaining a lesson using only the language in the textbook?**

The first teacher considers the association of images and the meaning of words as obligatory. The second teacher considers the use of images and language more helpful, it makes things clear and reduces the efforts that are required when teaching without images. According to the third teacher, sticking to the use of language is problematic, language as a unique technique is not sufficient and this can be solved through combining language and images.

**Question seven: Do you think that your students memorize more medical English terminology when it is accompanied with images or not?**

According to the first teacher, images help in the memorization and storage of medical English terminology. The third teacher mentioned that the use of images facilitates memorization, storage of information and data; this can be reached through the contextualization of the teaching-learning process, through the use of images. This is not the

case for the second teacher; she has never tried to test if images help students to memorize more medical English terminology.

**Question eight: Do you think that the combination of language and images in this textbook simplifies the teaching process?**

As concerns the combination of language and images in this textbook, the first teacher highlights its relevance for the teaching process, and it succeeds to correspond and to associates what is said and what is meant. The second teacher highlights the strengths of this combination in this textbook. The third teacher emphasizes the relevance of the combination and considers it as a good technique for both students and teachers.

To sum up, the answers of the three teachers were very insightful and show the necessity and the importance of the visual representations in the textbook for the teaching of medical English terminology and to illustrate the content of the lesson. The teachers also add that associating visuals with linguistic mode is an important way to better understand the different medical concepts. According to their experience as teachers of the ESP module, the participant teachers argued that the exploration of linguistic elements alone in this textbook is not sufficient; this requires a combination of the visual elements and linguistic elements, because it is a positive point and a good technique to better transmit the message. They indicated that students prefer to learn using both visual and linguistic elements, this makes things easier; as a result, it reduces the difficulties of explaining lessons. Since, there are images in the textbook; this makes the memorization of medical English terminology easier. Finally, the teachers highlight the relevance of the combination of language and images in this textbook for the teaching process.



## **Conclusion**

This chapter presents the results obtained from the social semiotic multimodal analysis of the images and the linguistic texts which reveal that most of images are related to the linguistic texts except the image (3) and (10). It also presents the results obtained from the interview which show that the teachers explore both the image and the text in teaching English for medical purposes. Finally, the combination of the two modes facilitates the process of teaching medical English. These results will be discussed in the last chapter , providing interpretations and explanations.

# **Chapter 3: Discussion**

## **Introduction**

This chapter is devoted to the discussion of the results obtained after applying the Social Semiotic Multimodal Analysis to textbook and the content analysis to the interview. The discussion applies the Social Semiotic Multimodal Approach in relation to teaching which is presented in chapter one to interpret the results presented in chapter three.

## **1. Discussion of Textbook Data**

### **1.1.The Relationship between the Meaning of the Linguistic Texts and the Meaning of the Images**

Social Semiotic Multimodal Analysis of the images and the linguistic texts in the textbook *Professional English in Use Medicine* reveals the relationship between the meaning of the images and the meaning of the linguistic texts. In other words, whether the meaning of the images and the meaning of linguistic texts complete each other or each mode has its own meaning.

#### **1.1.1. Diagrams and Linguistic Texts**

- **Representational / Field Level**

The image (1) and the text (1) (see appendix) are around the same subject which is the external part of the human male body. However they are different in the way they represented the topic and the information that they provide the receivers with about this topic, *“Representational/ideational structures verbally and visually construct the nature of events, the objects and participants involved, and the circumstances in which they occur”* (Len Unsworth, 2008: 03). The image is a diagram designed in the form of a visual mode to represent the visual shape of what the linguistic text is about. Whereas the text is designed in the form of a linguistic mode to provide the vocabulary relating to what is represented in the

diagram and the information about its medical names. Thus both modes complete each other in constructing the meaning of the subject.

The image (2) and the text (2) (see appendix) are about the same topic which is the Abdomen and its organs. But the information that is provided by the two modes is different in the way it is transmitted and the level of the information's content. The image provides a diagram about what the text is about. While the text provides the medical vocabulary and information about the medical vocabulary concerning what the image represents, for example: pancreas, liver, spleen, right kidney. Therefore, the image and the text serve to complete the meaning of each other at the representational level.

The image (5) and the text (5) (see appendix) are about the broken bones and the different types of bones' fracture. In this case the image shows exactly what the text means, and the text also provides the exact medical vocabulary to what the image represented, for instance: greenstick, displaced, comminuted. So, both modes complete each other in the construction of the same meaning.

The image (6) and the text (6) (see appendix) are about the negative feedback system. The image represented a diagram of the negative feedback system, and the text is about medical vocabulary of the negative feedback system such as: pituitary, thyroid, thyroxine. The image designs what the text refers and the text names what it is represented in the image. So, each one complete the meaning of the other.

The image (8) and the text (8) (see appendix) are about the female reproductive system. The image represents a diagram of the female reproductive system which the text speaks about, and the text is about the medical vocabulary related to different parts of what the image shows. So, the image (8) and the text (8) complete the meaning of each other.

- **Interactive/ Tenor Level**

The image (1) and the text (1) address the viewers (image) and readers (text). Both aim at informing the two receivers, *“Interactive/ interpersonal verbal and visual resources construct the nature of the relationship among speakers/listeners, writers/readers, and viewers and what is viewed”* (Len Unsworth, 2008: 03). The image needs the text which provides medical vocabulary concerning the external parts of male human body, for example: jaw, neck, wrist, leg, because the main purpose of the textbook is to teach Medical English Terminology. The text as well requires the image to make the medical terms more understandable when it is concrete; it is represented visually for the readers. Thus, both modes necessitate each other to complete their meaning.

The image (2) addresses the viewers to provide them with the visual representation of the abdominal organs of what a text is about, whereas the text (2) addresses the readers to provide them with the information about the medical English names of the abdominal organs, such as: stomach, gall bladder, duodenum, and to provide the medical English names of the abdominal organs that the image represents. Image-text relation at this level is interrelated; each requires the other to complete its meaning.

The image (5) and the text (5) address viewers and readers. The image represents a diagram to provide the viewers with the visual representation of the different types of bone fractures, for instance: impacted, open (compound), while the text (5) aims at providing the readers with the medical terms which correspond to different types of bone’ fractures in the diagram. Therefore, the image serves to complete the meaning of the text and the text serves to complete the meaning of the image.

The image (6) offers a visual representation of the negative feedback system for the viewers, while the text (6) provides information for the readers about the medical vocabulary

of the negative feedback system, for example: peripheral tissues, negative feedback loop. The image needs the text to identify what this diagram refers to, and the text needs the image to show what the visual representation of the medical terms mean. So, each mode completes the meaning of the other mode.

The image (8) is an offer; it informs the viewers about the different parts that the female reproductive system consists of, and the text provides the readers with the medical English names of each part of the female reproductive system. Hence, the image requires the text in order to provide the viewers about what the diagram refers to, and the text (8) requires the image (8) in order to make the readers understand more the meaning of the medical English names of each part of the female reproductive system. Thus, the image and the text complete the meaning of each other.

- **Compositional / Mode Level**

The image (1) is the ‘given’, and the second part of the text (1) is the ‘new’ information, since it is in the right *“if the left contains a picture and the right is verbal text, the picture is presented as Given, as a well-established point of departure for the text, and the text contains the New.”* (Kress and Van Leeuwen, 2006:183) The image (1) is the given because it represents the external male human body which is already known and familiar for the viewers *“For something to be Given means that is presented as something the viewer’s already knows, as a familiar”* ( Kress and Van Leeuwen,2006:181), and the second part of the text (1) is the ‘new’ because it is something new , special for the readers since it is about the medical English terminology which is not known by the readers, as it is reviewed in the literature Kress and Van Leeuwen state: *“For something to be New means that it is presented as something which is not yet known, or perhaps not yet agreed upon by the viewer, hence as something to which the viewer must pay special attention”*.(2006:181). The first part of the

text is in the top, so it is the ideal because it is introducing what the content of text is about in general as Kress and Van Leeuwen state: *“what has been placed on the top is presented as the ideal...For something to be ideal means that it is presented as the idealised or generalised essence of the information”* (2006: 186-187). And the last part is in the bottom which is the real since it provides the detail information for example: “Limb means arm (upper limb) or leg (Lower limb)”. The image (1) is separated from the text (1) by empty space which means that they are similar in some point (the same topic) and different in others (different types of receivers) as it is reviewed in the previous chapters *“two or more elements are separated by empty space, and this suggests that they should be seen as similar in some respects and different in others”*. (Van Leeuwen, 2005:13) .Therefore, the image and the text are related to each other, each one completes the meaning of the other.

The image (2) is the ‘centre’; it is the basic element of the information and the second part of text (2) is the ‘margin’; it is the secondary element of the information.

For something to be presented as centre means that it is presented as the nucleus of the information to which all the other elements are in some sense subservient. The Margins are these ancillary, dependent elements. In many cases the Margins identical or at least very similar to each other (Kress and Van Leeuwen, 2006: 196).

The image is in the centre because it represents the basic element which is the visual representation of the abdominal organs in order to understand more the content of what the subject is about, to make the viewers see what the abdominal organs mean. The linguistic elements around the image are the margins because they consist of the medical names of each abdominal organ in the diagram. These medical names are secondary elements which are related to the main element (the abdominal organ) because this diagram is necessary to understand what these medical names refer to. The first part of the text (2) is in the top whereas the image (2) is just below it because the first part of the text (2) is a starting point to the main topic while the image (2) is the detail that provides additional information. The last

part of the text (2) is in the bottom and the image is above it so, the image provides general information while the last part of the text (2) provides more details and specification.

For example, “they use the words bowel or intestine: the small intestine or the small bowel”. The image (2) is separated from the space of the text because the two are similar in some point (the same topic) and different in others (different types of receivers). The image is not in isolation; it is combined with the text, even their meaning is interrelated.

The image (5) is in the centre which means that it is the basic element of the information since it shows concretely the bones fractures. The linguistic text (5) part of it is in the top as general information “some of different types of fracture:” and the other part is in the bottom which are the details (medical vocabulary) related to the diagram which is the main element. The image (5) is separated from the space of the text which means they are similar in the content of the subject and different in the mode of representation of the subject.

The image (6) and the linguistic text (6) are in the same space, the image is integrated within the text which means that they complete each other.

The image (8) is in the centre and the text (8) is in the margin which means that the image completes the meaning of the text because something which is in the margin needs what is in the centre as it is mentioned in the literature “*The Margins are these ancillary, dependent elements*” ( Kress and Van Leeuwen, 2006:196). The objective of the text is to provide medical terminology about the female reproductive system which requires the visual representation to make the receivers understand more, especially in a context where English is a foreign language.



### **1.1.2. Photographs and Linguistic Texts**

- **Representational / Field Level**

The image (3) (see appendix) as is shown in the data analysis is a photograph of doctor in her office and the text (3) (see appendix) is about the future plan of recent graduated doctor in choosing a speciality in medicine. So, the image and the text are not about the same subject, neither the image completes the meaning of text nor the text completes the meaning of the image. In this case the image has no role in explaining visually the medical terminology which is included in the text.

The image (4) (see appendix) represents an artificial limb while the text (4) is about Prosthetists and Orthotists what is the meaning of them and other terms related to it. For example, (Prosthetists and Orthotists) provide care for anyone who needs and artificial limb).The image (4) gives the visual equivalent meaning of the medical term ‘Prosthetics’ to make the reader understand more the linguistic meaning. While the text provides an explanation of what the image represents is used for. Thus, the image and the text help each other to complete the meaning for each one.

The image (9) and the text (9) (see appendix) are about the same subject. The image represents visually what the text is about which is the testing tendon reflexes and the text explains the meaning of testing tendon reflexes and the medical English terminology related to which is represented in the image. Thus, both are in need for each other to complete their meaning.

The image (10) and the text (10) (see appendix) are not about the same subject since the image represents a medical instrument which is used by the doctors in some cases in childbirth whereas the text (10) in the left is about the fetal lie and the fetus position. Thus, the two modes are not related to each other, but the linguistic text which is the medical term

below the image is the equivalent to the image representation and the image serves to provide the visual synonym to this medical term. The text below the image provides the linguistic synonym to these medical instruments. Accordingly, the two modes complete the meaning of each other.

The image (13) and the text (13) (see appendix) are about the same subject. The image shows illustrates some of the sterile conditions in operating theatre which the text (13) speaks about. The text describes linguistically what is represented in the image. So, both the image and the linguistic text serve to complete the meaning of each other.

- **Interactive/ Tenor Level**

The image (3) is a demand image; because the doctor has a direct gaze to the viewers as if she asks them to trust her; whereas the text addresses the readers to teach them some medical names of medicine specialities for example (Paediatrics, neurosurgery), and how to use some phrasal verbs such as (working with, interested in). So, the image and the text do not have the same purpose and do not complete the meaning of each other.

The image (4) and the text (4) have the same purpose which is to explain the meaning of the prosthetists and orthotists. The image (4) provides the visual representation for the viewers of what the text is about, and the text defines for the readers what the image represents. Therefore, the image and the text are related to each other and each one works for completing the meaning of the other.

The image (9) offers a visual representation for the viewers to see concretely how the doctor tests knee jerks with a tendon hammer while the text (9) aims at teaching the readers the medical English terms related to tendon reflexes; for example, (Examination of the nervous system normally includes testing the tendon reflexes,...The knee jerks, with a tendon

hammer). The image (9) demonstrates more what the text is about and the text (9) provides more medical English terms to what the image represents. Therefore, the text and the image complete the meaning of each other.

The image (10) informs the viewers about how the obstetric forceps looks like while the text (10) the part which is in the left side of the text (10) want to inform the readers about the fetal lie' meanings and the part which below is the image provides the readers with the medical English name of what is represented in the image. In this case the image and the part of the text which is below it, even they are represented differently and to different receivers, are related to each other and complete the meaning of each other, whereas the left part of the linguistic text and the image are not related to each other and each one has its own meaning.

The image (13) provides the viewers with the representation of the surgeon before starting a given surgery to make visible the meaning which the text aims to transmit while the text (13) provides the readers with some medical terms related to the operating theatre so, the image and the text are related to each other.

- **Compositional / Mode Level**

The image (3) is the new whereas the text (3) is the given, because the text (3) is something already known for the readers. After the graduation there is a plan for making a decision about which speciality that will be continued, but what is the new and special for the addresser is to see the representation of the doctor . There is no connection between the image and the text at this level. The image (3) is separated from the text; this means that they are different in their communicative purpose; they do not address the same message but they are quite similar since the text is about the graduated doctor and the image shows the representation of doctor.

The image (4) is the new and the text (4) is the given. The image provides the details information because it represents the Prosthetists' form, and the text provides the general information about English medical terms related to it. The image is separated from the space of the text this means that they are similar in the content of the subject and different in the way of the representation. The image and the text are related to each other.

The image (9) is in the right side whereas the text is in the left side. So, the image is the new whereas the text is the given; because the image (9) is something special for the receiver to see concretely the practical side of what a text is about whereas the text is something given, not special for the receiver in comparison to the image (9). The image (9) is separated from the space of the text and this means that they are similar in the content of the subject and different in the way of the representation. The image and the text are related to each other.

The image (10) is in the right and the text (10) is in the left which means that the image is the new whereas the text is the given. The text is about something which is already known for the readers because it is about a common subject (fetal position), whereas the image provides the viewers with the representation of the obstetric forceps to make them see concretely medical instrument which is used only by the doctors. Neither the image nor the text completes the meaning of each other. The image is separated from the space of the text because they are different but they are quite similar because both are related to childbirth.

The image (13) is the new and the text (13) is the given. Each one serves the other in completing its meaning. The image is separated from the text which means that they are similar in the content of the subject and different in the way of the representation. The image and the text are related to each other.

### **1.1.3. Computer Generated and Linguistic texts**

- **Representational / Field Level**

The image (7) and the text (7) represent the same subject, the image (7) represents different external parts of the eye which the text (7) speaks about, and the text (7) is about the medical English names of the different parts of the eye which are represented in the image. The image and the text are related to each other and they serve to complete the meaning of each other.

Both the image (11) and the text (11) are about the same subject. The image represents a young child with an injured face which the text describes, and the text is about a description and explanation of some injuries of the child skin, and the medical English name specific to different types of the injury which are showed in the image .Hence, the image and the text are related to each other, both serves each other to make meaning.

- **Interactive/ Tenor Level**

The image (7) addresses the viewers to provide them visual representation of different parts of the eye while the text (7) addresses the readers who are interested in learning the medical English terms concerning the external parts of the eye. So, the image requires the text in order to name the different parts of the eye since the purpose of the textbook is to teach medical terminology, and the text requires the image in order to provide the addresser with the visual equivalent meaning of the medical English names to make them understand more.

The image (11) shows the viewers how different types of injuries look like while the text describes linguistically the different injuries that are in the face of the child by emphasizing on some medical English names .The image (11) completes the meaning of the

text because it explains visually what the medical names refer to. Both modes are related to each other.

- **Compositional / Mode Level**

The image (7) is in the centre while the linguistic text is around, that is, in the margin which means that the image is the basic element of the information because it represents the external parts of the eye which is something concrete that requires to be represented visually. Whereas the text is the secondary element because it provides the medical English names to this visual representation so, the text and the image depend on each other; as Kress and Van Leeuwen states “*The Margins are these ancillary, dependent elements*” (2006: 192). The image is separated from the text because they are similar in the subject and different in the way in which they are represented.

The image (11) is in the right side which is the new whereas the text (11) is in the left side which is the given, because the text is already given for the readers; while the image is something special for the viewers, because it clarifies more what the text is about. The image and the text are related to each other to construct meaning as stated previously “*Compositional textual meanings are concerned with the distribution of the information value or relative emphasis among elements of the text and image*” (Unsworth, 2008:03). The image (11) is separated from the text which means that they are similar in the subject and different in the way they are represented.

#### **1.1.4. Cartoon and the Linguistic Texts**

- **Representational/Mode Level**

The image (12) and the text (12) are about the same subject. The image (12) represents a sphygmomanometer and stethoscope which the text defines. The text (12) is about defining

a sphygmomanometer and stethoscope and the medical names related to each part of what the image represents. Thus, although the two modes are represented differently, they inform about the same subject.

- **Interactive/ Mode Level**

The image 12 is an offer image since it informs the viewers about how the sphygmomanometer and stethoscope look like and what do they constitute of. Whereas the text 12 provides the meaning of the two terms as well as the Medical English names of what they constitute of. Hence, the two semiotic modes complete each other.

- **Compositional / Mode Level**

The image (12) is in the centre and the linguistic elements are in the margin because what is represented in the image is the main subject whereas other details are the secondary information. Thus, the image completes the meaning of the text and both are related to each other. The image is separated from the text because are similar in the subject and different in the way in which they are represented.

All the diagrams , computer generated , and cartoon images types are related to the linguistics texts that accompany them except for the photograph type there are two images (10, 03) which are not related to the linguistic texts that accompany them.

## **2. Content Analysis of the Interview Data**

### **2.1. EFL teachers' Exploration of the Linguistic Texts and Images when Teaching**

#### **2.1.1. Teachers' use of textbooks' visual representation**

The first teacher uses the visual representation to reinforce the lessons. He mentions the necessity to use visuals especially because students are not familiar with the different topics represented in this textbook. Visual illustration is beneficial mainly in teaching medical English terminology; it allows learners to better understand the technical vocabulary, this makes the vocabulary clear. Besides, this facilitates the task of teaching and explaining those words. In this stage:

Learning can no longer be treated as a process which depends on language centrally or even dominantly- our data reveals conclusively that meaning is made in all modes separately, and at the same time that meaning is an effect of all modes acting jointly (Gunther Kress, et al, 2001: 01).

Similar to the first teacher, the third teacher claims that visual representation is an efficient tool as it makes the elements clear, it facilitates the task of teaching, it helps students to understand and it gives much information that make the ideas clear.

According to Pippa Stein, “... *all modes of communication drawn in the meaning are given equally serious attention*” (2008: 1). Whatever the use or the function of the visual modes, either they reinforce or support, they are considered as essential modes to make meaning, and an important ways of acquiring and transmitting knowledge. Thus teaching cannot be done without visual representations, because during the lessons, it facilitates teachers' understanding of the elements to be taught; as a result, students will better



understand some concepts in medical English. In addition to this, it makes matters clearer. In contrast, the second teacher uses the visual representations as a support, that is, they just help learners to understand, they are not sufficient to teach the medical terminology.

When teaching, teachers provide students with different means and requirements that help them learn and make the task of learning clear. In fact, the teachers under investigation assist learners with the multimodal representation in this textbook; they use both the visual and the linguistic modes presented in it, because images facilitate the task of teaching and learning. It is a means that helps students in the understanding of the words which are new for them. In addition to this, it serves as a way to organize and do things in a methodical way to get ideas with relation to the courses and so on.

### **2.1.2. Using Images as Illustration of the Lesson Content**

The three teachers agreed on the fact that the use of images in this textbook as illustration of the content of the lesson is necessary. The third teacher gives more details by stating that there are lessons that should focus on the illustration and the latter should be done through images, this helps students, it makes the different concepts clear and illustrates better the theoretical points. Images are necessary in illustrating the different concepts. For instance, when presenting the different parts of the body, language is not sufficient, in this case instead of using other languages or giving definitions to refer to those parts, images can cover the different parts just by referring to the using arrows. Using images helps more to better illustrate and transmit the ideas needed to be explained.

When presenting a human body with all its parts (hand, legs...) using and referring to the parts with an arrow, it becomes easy to understand and know which parts to speak about. Instead of explaining that 'hand' is 'la main' in French language or giving definitions, students have just to see the image and they understand. However, in the case where there is

no image; this demands more efforts to explain. This supports Kristie S. Fleckstein (2002: 04) way of defining images in abstract topics and this relaying on Langer's (1942: 128) who claims that "*images are ...our readiest instruments for abstracting concepts from the tumbling stream of actual impression*". This means that the different lessons or the abstract topics cannot be understood without using images, because there are concepts that learners do not have any knowledge about, for this reason, using just language makes things complicated, and concepts remain not clear. So images impact on the understanding of those concepts by the students.

### **2.1.3. The students' preferences**

The first and the second teacher argue that the students like and prefer when there are images. Whereas, the third teacher did not explore the issue, and does not know whether students prefer when there are images or not. Students favour the fact that there are images when learning medical English terminology. This motivates them and makes them interested more in learning, because this helps them in the realization of their objectives, which consist of understanding the different concepts. There is a difference between the courses presented using images and those presented without using images, that is, teachers find that students have a great preference, they like more when there are images, because images help them to understand better the different concepts. Moreover, images give students the opportunity to know the theoretical points concretely. In addition, they are motivated and attracted to learn medical English terminology. Presenting the courses using images help students to succeed and to really attain their goals, for this reason they prefer images.

## **2.2. The Combination of the Linguistic and the Visual Modes in the PEUM Textbooks as a Facilitator of the Teaching of Medical English Terminology**

### **2.2.1. The Linguistic Elements in PEUM Textbook**

The three teachers argue that the linguistic elements in this textbook are not sufficient to facilitate the task of teaching medical English vocabulary. Linguistic elements are not enough to teach the medical English terminology; sticking to their use does help neither teachers in making the concepts clear nor students in the understanding of the different medical terms. Teaching should be in a way that permits to transmit a great amount of understanding, for this reason it must be multimodal. This can be done by using images, because the topics represented in this textbook are medical ones, the terms are concrete, the vocabulary is related to the parts of the human body, to health, in this case images are needed and are necessary to make the medical vocabulary clearer and concrete. In fact, images cannot be separated from words, it is important to use them with the linguistic elements in order not to neglect the meaning, for instance, when teaching human anatomy, instead of explaining the different parts of the human body using another language or giving definitions, images can solve the problem, everything is illustrated in them. But, in the case where there are no images, this makes the task of teaching difficult, because it requires more efforts.

The use of language without images in such topics does not make the matter clear. So, to understand what the terms refer to, ESP teachers have not just to stick to the linguistic elements, but they need to go further than language and they need to use the images represented in this textbook since they help a lot. In fact, the use of linguistic elements and images must be equilibrated. Kristie S. Fleckenstein states that *“the scales of meaning and teaching need to be balanced so that word no longer eclipses image. Language is not the sole, perhaps not even the primary, means by which we create meaning of our worlds”* (2002:

04). Language is not the only means used to transmit meaning, images help language to better transmit the meaning. Teaching must be transmitted by using both language and images especially in this textbook, which represents medical topics. Moreover, linguistic features are not sufficient for learners to understand Medical terms; the use of pictures is something good, because it enables learners to understand. In the case where there is no visual support, much more effort is required, that is, using other languages or consulting dictionaries.

### **2.2.2. The Use of the Multimodal Combination in the Transmission of Messages**

The three teachers argue that the combination of the visual and linguistic elements in this textbook is advantageous. The two semiotic modes are implemented in a good way and they explain perfectly the meaning of the different concepts. This combination helps teachers to transmit the message and helps students to make the ideas clear, to exemplify situations and to better understand what is taught. As Pippa Stein (2008: 121) argued referring to Jewitt and Kress who stated that the combination between visual elements and linguistic elements facilitate the task of teaching and learning in the classroom. This technique is positive and good to follow. According to Tom Hutchinson and Alan Waters, ESP is part of EFL/ESL, the latter present an important part or are the main branches of English language in general. Teaching English as a foreign language and for specific purposes requires or seeks to fit the learners' needs, for what they learn or need the English language. In this case, teaching medical English terminology in a good way that necessitates using the adequate means. Accordingly, combining linguistic elements and images helps in the transmission of the messages and facilitates the task for learners to understand the medical concepts.

### **2.2.3. Using the Linguistic Mode to Explain Lessons**

The three teachers argue that explaining lessons using only language in this textbook is not sufficient. The medical concepts represented in this textbook are new for the students, they cannot be taught using just language; they are concrete topics which need to be applicable to be understood, so the task is easy when there are images. For example when dealing with human anatomy, when explaining parts of the human body, images make things clear, the parts that are explained or dealt with are just seen in the image, the teacher does not need to explain, but just seeing the image is sufficient to understand which part is dealt with. Thus, teaching and learning ESP requires the use of multimodality to make the task clear. This supports Guo (2004) view

I also suggest that multimodal construction of meaning should be reflected in ESP/EAP assessment... called multimodal social semiotics, the nature and complexity of scientific discourse and how they might be more effectively taught to ESP/EAP students may be further explored (2004: 216).

Medical topics are better taught using images. Students understand more when there are images that are selected to fit best the meaning intended to be explained. Thus, limiting oneself to the use of language is problematic; because using it as a unique technique to explain is not sufficient. So, during the ESP classes that represent the medical concepts in this textbook, the use or the combination of the linguistic elements and images to illustrate can solve many problems in relation to understanding, comprehension and meaning.

### **2.2.4. Images and Students' Memorization of Medical English Terminology**

The first teacher and the third teacher argue on the fact that students memorize medical English terminology when there are images. Images help the students' memory to get meaning and not to forget it. In addition to this, it facilitates the task of understanding as well

as storing information; all these can be simplified and become easy by means of contextualization of the teaching-learning of these medical terms in their suitable content; this can be possible by using images that make the concepts grasped. This highlights the importance of using images in learning medical English terminology and supports Guo view (2004: 216). However, the second teacher mentioned that she has never tried to test whether images help students' memorization capacity. The participant teachers argue that the use of images helps students to memorize easily and to better understand ideas about different elements, all these can help and can facilitate students' understanding of medical terminology through the contextualization of teaching learning process. Images can make this process clear and make the contextualization possible and concrete.

### **2.2.5. Relevance of the Multimodal Combination in Simplifying the Teaching Process**

The three teachers argue that the combination between language and images in this textbook is relevant to simplify the teaching process. Teaching Medical English Terminology using images help in achieving the aim of both students and teachers; it consists of connecting and joining what is in the written and what is referred to or what is meant, and to better teach what is represented. This combination is used in a way that serves the teaching process. On the one hand it helps teachers to better teach and explain the different concepts, and on the other hand it helps students to better understand the different concepts they have been taught. The three teachers explained, argued and insisted that such combination is 'Positive' and 'succeeds to correspond and to really associate what is said and what is meant'. Besides, the teachers highlight its relevance for teaching medical English terminology. In fact "*there is a recognition that all acts of communication in classroom are multimodal: there is no monomodal communication*" (Jewitt and Kress cited in Pippa Stein,

2008: 121). In the classroom, teaching ESP requires a multimodal presentation of the different courses to simplify the teaching task and make the terminology clear. Images in this textbook are a good and relevant technique to follow. They permit teachers to better teach and this helps students to better understand. Dudley-Evans (1991:298) defines ESP as “*the careful research and design of pedagogical materials and activities for an identifiable group of adult learners within a specific learning context.*” (Cited in Peter Master, 2005: 99). English for Medical Purposes requires choosing the appropriate materials in order to facilitate the teaching of medical terms. In this textbook which is used as a material to teach English for Medical Purposes, images present an important tool to simplify the teaching of those terms and help both teachers and students. They are relevant in the teaching process.

## **Conclusion**

The discussion of both the results of social semiotic multimodal Analysis of the text book and of the interview answered the research questions and confirmed the three hypotheses set in the general introduction. The linguistic texts and the images in Professional English in Use Medicine textbook complete the meaning of each other. Teachers explore both the linguistic texts and images in *Professional English in Use Medicine* when they teach medical English Terminology. The combination of the linguistic texts and the images in PEUM textbook facilitates the task of teaching Medical English Terminology.

# **General Conclusion**



## General conclusion

This paper has investigated the teaching of medical English terminology through the combination of images and linguistic texts in *Professional English in Use Medicine* textbook at Mouloud Mammeri University of Tizi-Ouzou in the department of English. It emphasizes on the use of the images and linguistic texts together in facilitating the task of teaching MET.

Our research paper has targeted two main Objectives. The first objective is to look whether the linguistic texts and images in PEUM textbook depend on each other in making the same meaning. The second objective is to study whether the combination of the images and the linguistic texts in PEUM is efficient in facilitating the teaching process of medical English terminology.

Taking as a starting point “Guo” (2004) who suggested that teaching ESP/EAP should take into consideration the use of multimodality which refers to the combination of two modes: the linguistic and the visual; we hypothesized that the linguistic texts and the images in PEUM textbook complete each other to have the same meaning. We also hypothesized that EFL teachers explore both the linguistic texts and images in PEUM textbook when teaching MET, and that the combination of the linguistic texts and the images in PEUM textbook facilitates the task of teaching MET.

To conduct the investigation, we adopted the qualitative method. We used the qualitative method for data collection and data analysis. The research data consists of PEUM textbook corpus, and an amount of manually transcribed corpus which is brought out from an interview conducted with ESP teachers teaching at Mouloud Mammeri University of Tizi-Ouzou in the department of English who have already taught English for medical purposes using PEUM textbook. As for data analysis, we analysed the PEUM textbook by using social

semiotics multimodal approach; and we analyzed interview data using content analysis method.

The social semiotic multimodal analysis of the PEUM textbook and the content analysis of the interview brought about illuminating results which provided answers to the research questions. These results show the relationship between what the images depict and what the linguistic texts are about in PEUM textbook, and the manner in which each mode serves the other mode to fulfil the same meaning. The descriptive content analysis of the interview reported that the three teachers of MMUTO in the department of English teach MET using the images and the linguistic texts in PEUM, and that the combination of the images and the linguistic text facilitates the task of teaching MET, which is difficult especially for EFL students who are not in the field of medicine.

The discussion of the findings shows that there is a relationship between what the images depict and what the texts are about, and both of them serve to complete the meaning of each other. So, they have the same meaning which is to provide the receivers with a great amount of medical English terminology in a clear and understandable way without the need for a translation to another language.

The results of the study also reveal that all the three participant teachers explore both the images and the linguistic text of the PEUM textbook in teaching MET and that they find the exploration of this two different modes as a necessity in teaching a terminology related to something concrete and scientific but not familiar with their students. Put differently, the difficulty of the teaching task lies in the fact that the target students are EFL student who are asked to understand a difficult domain in a foreign language.

Both results obtained from the social semiotic multimodal analysis of the textbook and the content analysis of the interview to teachers show that the combination of the images and

the linguistic texts in the PEUM textbook facilitates the task of teaching medical English terminology because both of them serve to complete the meaning of each other, and to achieve the same meaning. Additionally, the three teachers argue that this multimodal combination in the textbook help them as it facilitates the task of teaching MET to EFL students.

In sum, the study reveals that the linguistic texts and images in PEUM textbook depend on each other in making a complete meaning, and in achieving the same communicative function. The combination of these two modes, the visual and the linguistic, in PEUM textbook is efficient in facilitating the teaching process of medical English terminology.

Our hope is that our study has contributed to the field of teaching MET through multimodality though slightly so that it will open a new prospective for future research in other domains of ESP teaching. And both of them serve to complete the meaning of each other so, they have the same meaning which provide the receivers with a great amount of Medical English Terminology which is clear and understandable.

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# **Appendices**

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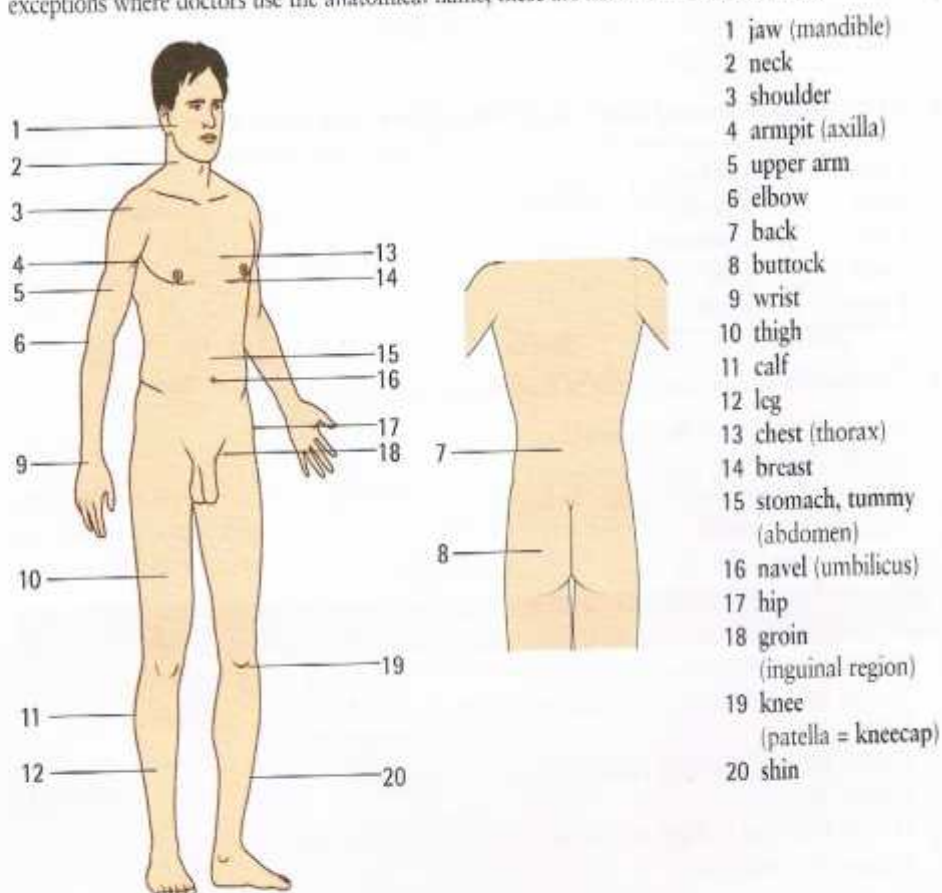
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## 2 Parts of the body 1

### A Parts of the body

Most external parts of the body have ordinary English names as well as anatomical names. Doctors normally use the English names, even when talking to each other. There are a few exceptions where doctors use the anatomical name; these are shown in brackets below.



Limb means arm (upper limb) or leg (lower limb). The trunk is the body excluding the head and limbs.

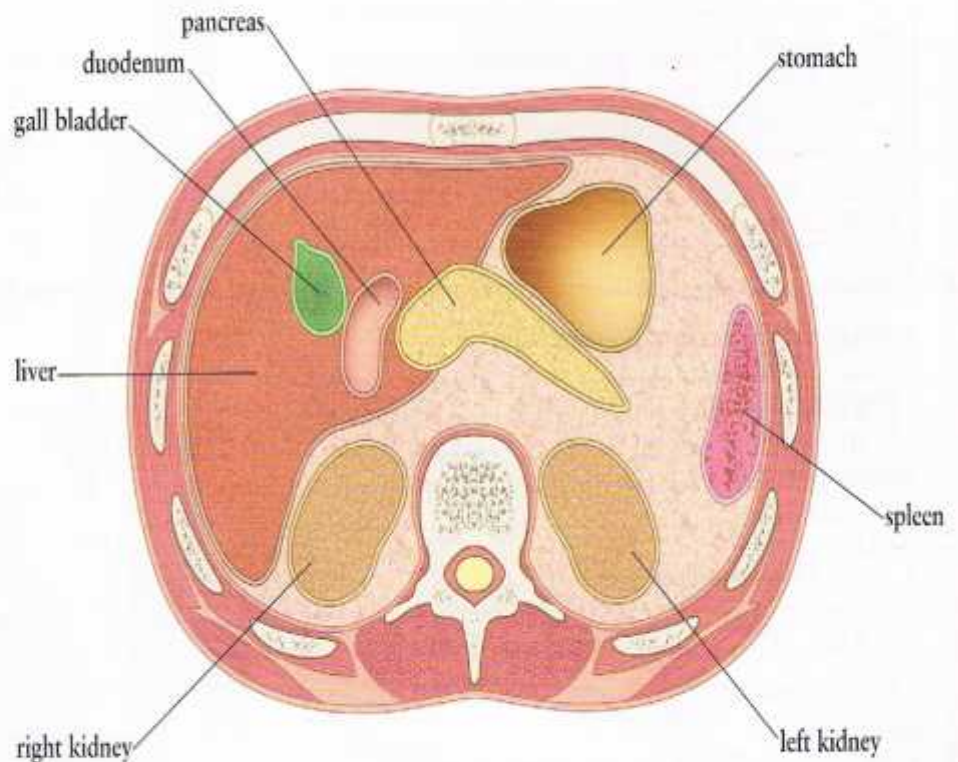
For a more detailed diagram showing parts of the body, see Appendix I on page 00.

Image (1) and text (1)

## 3 Parts of the body 2

### A The abdomen

The main organs of the body have ordinary English names and doctors use these words. But when an adjective is needed they often use an anatomical word. For example, we can say disease of the liver or hepatic disease. Some abdominal organs, for example the pancreas, have no ordinary name.



When doctors talk about the main parts of the digestive system, they use the words bowel or intestine: the small intestine or the small bowel, the large intestine or the large bowel. When speaking to patients, doctors may refer to the anus and rectum as the back passage.

**Image (2) and text (2)**

## 5 Medical practitioners 1

### C Choosing a specialty

Jill Mathews has just graduated from medical school and is talking about her future.

'I haven't decided what to specialize in yet. I need more experience before I decide, but I'm quite attracted to the idea of paediatrics because I like working with children. I'd certainly prefer to work with children than, say, elderly patients – so I don't fancy geriatrics. I was never very interested in detailed anatomy, so the surgical specialties like neurosurgery don't really appeal. You have to be good with your hands, which I don't think is a problem for me – I've assisted at operations several times, and I've even done some minor ops by myself – but surgeons have to be able to do the same thing again and again without getting bored, like tying off cut arteries and so on. I don't think that would be a problem for me, but they need to make decisions fast and I'm not too good at that. I like to have time to think, which means surgery's probably not right for me.'

**Note:** The collocation *good with* is followed by a noun – *He's good with children*. The collocation *good at* is followed by the -ing form (gerund) of a verb, or by a noun – *She's good at explaining procedures*. *She's good at explanations*.



Image (3) and text (3)



## 8 Allied health professionals

### C Prosthetists and orthotists

Prosthetists and orthotists provide care for anyone who needs an **artificial limb**, (a **prosthesis**), or a device to support or control part of the body (an **orthosis**). They also advise on **rehabilitation** – helping patients return to normal life and work after treatment.

Prosthetists provide **artificial replacements** for patients who have had an **amputation** or were born without a limb.

Orthotists provide a range of **splints** and other devices to aid movement, correct **deformity** from an abnormal development of part of the body, for example **club foot (talipes)**, and relieve pain.



A prosthesis

**Image (4) and text (4)**

## 16 Bones

### B Fractures

A fracture is a break in a bone. Some of the different types of fracture:



greenstick



displaced



comminuted



impacted



open (compound)

A pathological fracture is fracture in a diseased bone. A fatigue or stress fracture is due to repeated minor trauma, for example long-distance marching or running.

**Image (5) and text (5)**

## 18 The endocrine system

### B Negative feedback systems

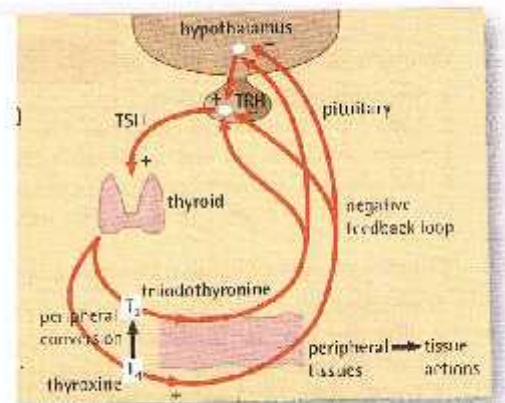


Image (6) text (6)

## 19 The eye

### A Parts of the eye

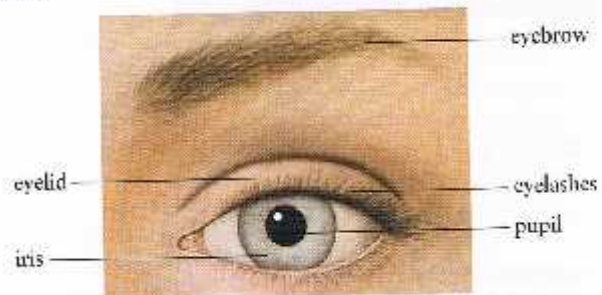


Image (7) and text (7)

## 21 Gynaecology

### A The female reproductive system

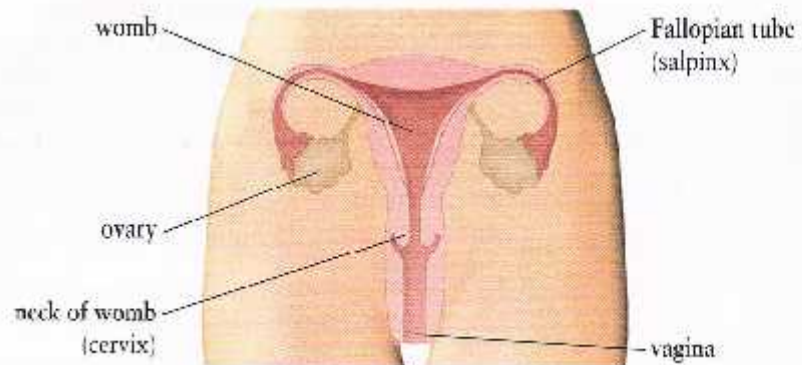


Image (8) and text (8)

## 27 The nervous system 2

### B Tendon reflexes

Examination of the nervous system normally includes testing the tendon reflexes, for example the knee jerks, with a tendon hammer (also known as a reflex hammer). The reflexes may be absent (0), diminished (-), normal (+) or brisk (+++). The plantar reflexes are also checked. The normal plantar response is a downgoing (↓) movement (plantar flexion) of the big toe. An upgoing (↑) toe (extensor or Babinski response) is abnormal.



Testing the knee jerk with a tendon hammer

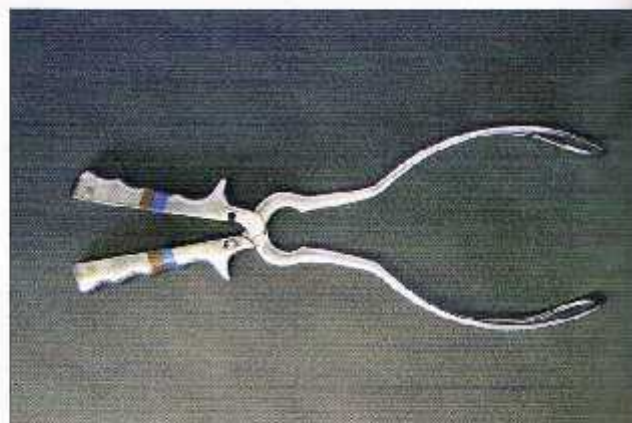
Image (9) and text (9)



## 29 Pregnancy and childbirth

### C Presentation and lie

Fetal lie is the position of the fetus in the uterus. The normal lie is **longitudinal**, and the abnormal lie is **transverse**. Fetal presentation refers to 'the part of the fetus which occupies the centre of the pelvic canal and which the examining finger feels on vaginal examination' (Butterworth). The normal presentation is with the head (**vertex presentation**). Breech presentation means the buttocks are presenting (*breech* is an old word for buttocks). Abnormal presentations may require delivery with forceps.



Obstetric forceps

Image (10) and text (10)

## 32 The skin 2

### B Case report

Read the case report and compare it with the illustration.

#### Case 2

A 9-year-old boy presented to the Accident and Emergency department after he stumbled and fell while running in a wood. He had received a **blow** to the head from a rock and had been **scratched** by bushes. On examination, a vertical laceration 1 cm long was noted on the bridge of his nose just right of the midline. There were a number of superficial scratches on the right side of his forehead. His right upper lid was mildly **confused**.

[BMJ 1990; 316: 1364]

Amended with permission from the BMJ Publishing Group



Image (11) and text (11)

## 34 Basic investigations

### B Blood pressure

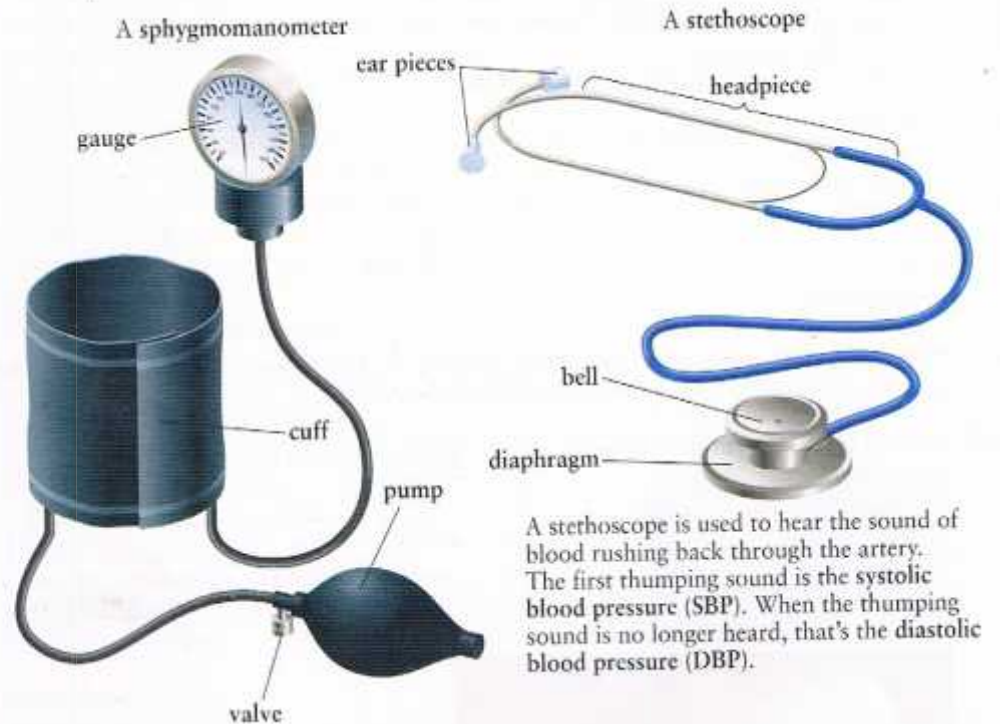


Image (12) and text (12)

## 41 Surgical treatment

### A The operating theatre

Surgery is carried out in an operating theatre. Great care is taken to make sure that operations take place in **sterile conditions** – free from microorganisms. The surgeon and his or her assistant wash or **scrub up**, and put on **surgical gowns**, **masks**, and **gloves**. The patient's skin is prepared by disinfecting it with an antiseptic solution. This is known as **prepping** (preparing) the patient. They are then covered with sterile drapes, so that only the area of the operation is exposed.



Image (13) and text (13)

### **Appendix III: Interviews' questions:**

**1<sup>st</sup> question:** Do you use the visual representations in the textbook as support or as the main element to teach medical English terminology?

**2<sup>th</sup> question:** Is the exploration of linguistic elements alone in this textbook sufficient to facilitate the task of teaching medical English vocabulary?

**3<sup>th</sup> question:** Do you use the images in this text book to illustrate the content of the lesson?

**4<sup>th</sup> question:** How do you find the combination of the visual elements and the linguistics elements in the textbook in transmitting the message?

**5<sup>th</sup> question:** Do your students prefer to learn using both visual and linguistic elements or by using only one element?

**6<sup>th</sup> question:** Do you find difficulties when explaining a lesson using only language in the textbook?

**7<sup>th</sup> question:** How do you think that your students memorize more medical English terminology when it is accompanied with images or not?

**8<sup>th</sup> question:** Do you think that the combination between language and images in this textbook relevant to simplifies the teaching process?

### **Appendix III: Teachers' answers.**

#### **1) Teacher one:**

**1<sup>st</sup> answer:** Sure without any doubt we use the visuals to reinforce and to go even tom because it is really a topic which a little bit new for our students, so there are things that they do not know, so sometimes you are obliged, it means that it is a necessity to use these visuals to illustrate better these words that are really little bit technical for them, so they do not know them, so we are obliged to use visuals really to illustrate these technical vocabulary.

**2<sup>nd</sup> answer:** Now if we really focus on the linguistic features it will be very difficult for both the teacher himself or herself and even for the students, so we have to go as teachers, we have to go beyond linguistic features, because linguistic features is not really enough ok, you have to go beyond and to really to make really understand what is beyond and you have to use other words just to and even to show the image that can really illustrate the words that are specific for that field.

**3<sup>rd</sup> answer:** Sure, the images are necessary and we have to use them. Right

**4<sup>th</sup> answer:** Sure, it is a positive; you have to combine the visual and the linguistic features. Right

**5<sup>th</sup> answer:** So they like when you use visuals, they are attracted and they are motivated. So it is a question if you want to succeed really to attain you objective and to achieve your goal you have to use both of them

**6<sup>th</sup> answer:** Sure, you have to associate, ok, you associate the meaning of words with images, because they are really something which is new for them, and it is not their specialty, so sometimes even for a teacher it is important for him or her to find images corresponding to the meaning that you want to explain.

**7<sup>th</sup> answer:** Sure, the image helps the memory to get the meaning and to store it really in the mind and to really not to forget the meaning, ok when you use the image.

**8<sup>th</sup> answer:** I think that they are really, it is ok, they succeed to correspond and to really to associate what is said and what is meant and it is really relevant for teaching this kind of technical vocabulary.



## 2) Teacher two:

**1<sup>st</sup> answer:** of course, I do you some visuals from time to time, but certainly I just use them as support, they are not enough at all to teach the Medical Terminology, just they are support, they help learners to understand more some terms, some concepts in Medical English.

**2<sup>nd</sup> answer:** well, in fact they are not; means exploring some linguistic concepts or linguistic elements, some terminology that comes in the book, it is not most of the time, it is not enough for learners to understand some medical terms, as you have said sometimes some visual support if you have pictures this is ok, this is good, because enable learners to understand more, for instance you have I don't know if you teach human anatomy, human body instead exploring parts of the human body in French language translated and so on, you have just the, I mean the picture you give the terminology everything is clear, but sometimes it is not I mean explaining or well, this is in case you have visual supports, but sometimes if you do not have visual supports you need to make much more efforts, this is means that you have the linguistic term that you need to explain, you need to, you as teacher you need to understand more the medical problems, you need to understand the medical concepts, then moving to the problem of language, because sometimes it is not just problem of language but it is also a problem of knowledge in medicine, because before you search for the meaning of the word. You need, I mean I do not know if I say any problem that you can mention, if we say arteries, this is in English, you try to find equivalent in French, it is ok, or you just define it all right, but sometimes students need more explanation, deeper explanation. **And you find that the visual representation make this task more clear.** of course visual representation help you a lot, but it depends in fact what kind of concepts, what kind of medical concepts you are explaining, if you are explaining as I have said some parts of the body, this is ok, but if you are explaining I don't know problems such as insomnia, this is ok, you have I don't know kind of black around your eyes this is clear, but there are other problems that cannot be explained through visuals supports.

**3<sup>rd</sup> answer:** Yes, sometimes yes, sometimes I do when, sometimes when I think it is necessary I do it, yes.

**4<sup>th</sup> answer:** of course, there is a kind of positive relationship, there is, the way the images are implemented, even though there are not many pictures, there are not many images in the textbook, but still those images in the textbook are I mean explained perfectly the meaning of the concepts, means they are, their implementation in the textbook something very positive, they help you a lot to transmit your message as a teacher and also for students who work alone, because there are students who work alone, it may help them a lot instead of using for instance bilingual dictionaries, you have sometimes the picture, the image , I mean enough to understand meaning.

**5<sup>th</sup> answer:** in fact I sometimes, my impression is that I mean as concerns the lessons that have already done with visuals images or without, I find that students prefer when there are visual images, because, as I have said they help them understand better, in fact they prefer it with visual images.

**6<sup>th</sup> answer:** of course it is much more easier when you have an image plus the language, it is much more easier, I mean as I have said sometimes if you don't have the image for instance you are dealing with human anatomy, you are explaining parts of the human body, if you have the image it is clear, things are clear, they don't need to tell you that "hand" this is "la main", it means you have just to see it and you understand, but if you don't have the image; you have to make efforts to explain either you give definitions, explanations or sometimes you need to use another language.

**7<sup>th</sup> answer:** in fact, to be sincere I have never tried to test this, I have never tried to test whether their capacity to memorize is related to visual images or not, to be sincere I have never tried this, but certainly, I mean theoretically speaking yes, but in practice to be sincere I have never tried to test this.

**8<sup>th</sup> answer:** I think that the combination between visual images and the linguistic elements as I have said something very positive in the textbook, and I think that as I have said there are not many illustration, but those which are there in the textbook, they are used in a very positive way, even though there are not many illustrations, may be students need more illustrations, because I mean we as learners of English we are not expected to be I don't know to have knowledge in Medicine, so we need may be more illustrations, but still those which are there they are ok.

### 3) Teacher three:

**1<sup>st</sup> answer:** first of all, I would like to say that visual representation is an efficient tool which can help both teachers and students to better understand language elements. First of all, it facilitates memorization and it can make matters clearer in the sense that it gives more details; it gives for example the hints to follow in order for example to understand the parts of the body as with relation to the heart, the eye, the arms and so on. Thus the use of visual representation can be considered as a very important element in the teaching- learning process. It helps teachers to facilitate the understanding of the elements to be taught, and on the other hand it helps the students to memorize, to understand to follow a systematic way to get ideas with relation to the courses and so on.

**2<sup>nd</sup> answer:** English or medical English terminology, we should know that is something concrete, it is something which related to humans, which is related to health, which is related to the different parts of the body of humans, it is concrete and to understand concrete matters, we should give examples: images, illustrations and if it is possible to do experiments to go to labs to see some experiments with specialists to visit doctors, and those who are specialized in medicine. Thus it is not sufficient at all, it is not sufficient to teach only the linguistic elements, the use of visual representation is necessary in this case.

**3<sup>rd</sup> answer:** of course I use images if it is possible, it depends, some courses, in some courses it is necessary to use images in other courses which are introductory courses it is sufficient to stick to theory and of course the coming, the coming lessons focus on the illustration of the theoretical points and this illustration should be done through images, the use of the data show, the use for example of material in order to give the students clearer concepts.

**4<sup>th</sup> answer:** of course this combination can be explained by the fact that it gives first of all theory and then it gives illustrations that is to say through images and so on. This combination seems to be very important and of course terminology we refer to linguistic elements, to vocabulary to specific vocabulary to be used by the students with relation to medicine and images, it is a matter to get clearer ideas to for example to exemplify situations and to better understand what is taught. Yes, it is a good technique to follow.

**5<sup>th</sup> answer:** sincerely speaking, I haven't for example explore the issue, but it is obvious that the use of both techniques is for example helpful to the students, for the students and for the teachers. For the students, for example to know the theoretical points concretely and for the teachers to facilitate the task for the students to understand, I think that it is a good technique.

**6<sup>th</sup> answer:** to stick to the use of language is problematic, why? Medicine as I said is something which is concrete, language we speak that is to say and sometimes the image is vague that is to say the students want to know about the part, that is to say the part you discuss, want to know about the part of the body you analyze, want to know about the part you explain. Thus the use of language as a unique technique to explain is not sufficient at all, medicine as I said is something concrete and this can be , this problem can be solved through the combination of linguistic element and concrete materials to, that is to say to provide illustrations and so on.

**7<sup>th</sup> answer:** of course as I said, I mentioned that the use of images facilitates memorization and that is to say to help the students to better understand and to get clearer ideas about the elements, that is to say teachers teach. Now, memorization it refers to that is to say to the storing of information, to the storing of data and this can be facilitated to, can be facilitated through the contextualization of teaching/learning process; contextualization can be reached through the use of authentic materials, through the use of something which is concrete and so on. Now, memorization can be reached through the use of images.

**8<sup>th</sup> answer:** of course it is relevant, it is good and it is that is to say something which can help teachers to better teach, which help, which can help the student to better understand, it is relevant and it is good technique to follow.