Chapter 2: Review of Literature
2.1. Overview

This chapter, in a stepwise manner, will explore the related literature, theories and researches on the area of academic text analysis, coherence relations, discourse markers, ESP and genre analysis and reading comprehension strategies. Additionally, issues related to conceptualization and measurement of these variables will be discussed.

2. 2. Discourse Analysis

2.2.1. History and definition of discourse

In literature, the traditional meaning of discourse is the ordered exposition in writing or speech of a particular subject but recently this term has been applied with new meaning, reflecting the effect on critical vocabulary of work which has been done within and across the boundaries of various disciplines: linguistics, philosophy, literary criticism, psychology, sociology and history (Fowler, 2001). Discourse is a challenging concept due to some conflicting and overlapping definitions which are issued from various theoretical and disciplinary standpoints. Fairclough (1992) indicates that discourse is used to refer to extended samples of either spoken or written language in Linguistics. He (2003) also defines discourse as:

a way of representing aspects of the world, the processes, relations and structures of the material word, the ‘mental world’ of thoughts, feelings, beliefs and the social world (p.124).

As a general approach to language and as an influential force, discourse analysis emerged in the early 1970s, but for the first time, Zellig S. Harris
discussed it in his paper with the same title in 1952. He defined discourse analysis as the breaking up of a discourse into its essential elements or component parts by standard distributional methods. He was interested in the distribution of linguistic elements in texts and the link between the text and its social situation. In Schiffrin’s viewpoint (1994), the definition of discourse is categorized in three groups:

- Discourse as language above the sentence: Harris (1952) claimed explicitly that discourse is the next level in a hierarchy of morphemes, clauses and sentences. He viewed discourse analysis as a formal, derived from structural methods of linguistic analysis; in this way, a text breaks down into relationships among its lower-level constituents.

- Discourse as language use: this definition is consistent with functionalism in general: discourse is viewed as a system through which particular functions are realized. Functionally based approaches view discourse as a socially and culturally organized way of speaking and tend to draw upon a variety of methods of analysis, often including not just quantitative methods drawn from social scientific approaches, but also more humanistically base interpretive efforts to replicate actors’ own purposes or goals.

- Discourse as utterance: in this view, discourse is considered above other units of language; however, by saying that utterance is the smaller unit of which discourse is comprised, it can be suggested that discourse arises not as a collection of decontextualized units of language structure, but as a collection of inherently contextualized units of language use.

In general view, the definitions of discourse can be categorized according to the different points of views: structurally based definitions of discourse lead to analyses of constituents (smaller units) that have particular relationship with one another in a text. They rely on linguistic
Characteristics of clauses as clues to textual structures. Considering discourse as language use is the replacement of the above mentioned view; it focuses on the function of the sentences. A more functionalist view of discourse is stated by Brown and Yule (1983); this view makes clear the analysis of language use can not be independent of the analysis of the purposes and functions of language in social and human life because they are interrelated to each other.

In Fairclough’s view (1992), language and society particularly constitute one another. This can be considered as an extreme functionalist view: discourse is assumed to be interdependent with social life; its analysis necessarily intersects with meanings, activities, and system outside of itself (discourse is viewed as a system, a socially and culturally organized way of speaking) through which particular functions are realized.

Discourse can be under survey at micro and macro levels: at the micro-level of discourse analysis, the component units of discourse receive greater attention as the focus is on the relation between the components at sentence level and how coherence is achieved through their linking. At the macro level the overall coherence of the whole discourse receives more attention. In such a study, discourse topics, different from sentence topics, are taken into account. Discourse topics or themes are the global meanings of discourse. The topic summarizes the more detailed meaning of a discourse.

2.2.2. What is discourse analysis concerned with?

Discourse analysis refers to the attempts to study the organization of language above the sentence or above the clause. It is concerned with language use in social contexts, in other words, it is the contextualized use
of language; the study of language in actual use, language use as a social action, language use as situated performance and language use as tied to social relations. It is the broadest comprehension of language since the sentence meaning and speaker’s intent are not the same; utterances have both a literal and an intended or functional meaning which should be considered in comprehension of the discourse. In discourse analysis, the use of language for communication and the speaker’s use of linguistic messages and the listener’s use in interpretation of the messages are examined. It can be called a ‘functional approach’ because each utterance is classified in terms of what sentences do and what their functions are. In this approach, we deal how the meaning of the sentence is quite independent of its form at times; it may be non-standard forms. Chomsky (1965) believed that it should not be accounted for in the grammar of a language. This is clearly an approach which is concerned with the communication features of language as its primary area of investigation; it considers linguistic forms as a dynamic means to express the intended meaning. It might imply that discourse is not linguistically organized at all. It is not entirely separate from the study of grammar and phonology but discourse analysts are interested in a lot more than linguistic forms.

In the study of language in use, discourse analyst is more concerned with the relationship between the producer and utterance, on the particular occasion of use, than with the potential relationship of one sentence to another, regardless of their use. Using terms such as reference, presupposition, implicature and inference, discourse analyst is describing what writers/speakers and reader/hearers are doing and not the relationship which exists between one sentence and another. The discourse analysts, like the grammarians, are also interested in things being well
formed but by quite different criteria when an utterance occurs. For a discourse analyst, the questions of who uttered the utterance, where, when, for whom, with what goal, are all relevant to an interpretation as to whether the act of utterance is well formed. For this reason, discourse analysts work with utterance which is a string of words written or spoken in specific context rather than with sentence which is composed with string of words confirmed by the rules of grammar for the construction of phrases, clauses, etc.

By surveying the works of discourse analysts, it is implied that discourse involves studying longer (spoken and written) texts but, above all, it involves examining the relationship between a text and the situation in which it occurs. Hence, even the meaning of a short notice like “no cigarette” is to be interpreted within the situation of its occurrence; this notice in the entry of the hospital or other public area announces that it is forbidden to smoke cigarette in this place, but the same notice in the window of a shop means that the shop is out of cigarette. The grammar mode of the first notice is the imperative but that of the second one is not an imperative but a statement. What factors enable us to interpret this notice? They are clearly not in the text, but are in interpretation based on the text in its context. This ability leads us to take into account the communicative dimension of language. Widdowson (1978) notes:

The study of communicative activity is concerned not with exact description of grammatical rules but with their communicative potential and with how language user put their knowledge of such rules to communicative effect, how they negotiate meanings with each other, how they structure an ongoing interaction, and so on. There is no one-to-one
correspondence between the signification of linguistic forms and their communicative values as utterances in context. Discourse meanings are to some degree unpredictable (p.109).

The important difference between discourse analysis and other descriptive methods of language is consideration of the unit of language. All these methods have not gone beyond the sentence and beyond linguistic factors, but discourse analysis brings into consideration other non-linguistic factors, of which the most important one is context. Discourse analysis is a vast subject area within linguistics and analyzes the spoken and written language over and above concerns such as the structure of the clause or sentence. The interpretation of discourse is not simply a matter of identifying the assumptions attached to individual sentences as they appear in sequences. The linguistic context in which they occur and the extralinguistic context of utterance, go along together to create presuppositions of a pragmatic kind of ‘implicatures’ which can override those which are associated with linguistic forms. This growing interest in the process of meaning creation in real situation where texts alone were insufficient evidence for the linguist, settings and goals of interaction came to the fore in the linguistics discipline. Therefore the role of context in discourse requires further discussion.

2.3. Context

2.3.1: Crucial evidence in interpretation of the discourse

It is quite possible for two fragments of language to be completely unrelated as sentences and therefore exhibit no coherence, but the same fragments can be very closely related as utterances in context and therefore to exhibit coherence as discourse. In fact, discourse is full of
utterances which do not exhibit coherence relations and which are perfectly understandable without taking into account its contextual information. One piece of utterance conveys a message may convey quite a different message in another context (Krzeszowski, 1975). Therefore, the importance of context and background knowledge of the world surrounding the discourse is crucial to discourse analysis for the sake of supporting the intended interpretation. It is to be pointed out that some elements of the utterances can only be interpreted with respect to the context in which they are uttered. The more the analyst of discourse knows about the features of context, the more he/she can predict what is likely to be said. The idea that a linguistic string can be fully comprehensible without considering context has been seriously questioned. While the linguistic properties of an utterance determine some interpretations, nonlinguistic properties need to be taken into consideration for recovering the entirety of its message. The implications of taking context into account are well expressed by Sadock (1978) as cited in Kasher (1998):

There is, then, a serious methodological problem that confronts the advocate of linguistic pragmatics. Given some aspects of what a sentence conveys in a particular context, is that aspect part of what the sentence conveys in virtue of its meaning... or should it be “worked out” on the basis of Gricean principles from the rest of the meaning of the sentence and relevant facts of the context of utterance?(p. 315)

A theory aiming at explaining how listeners understand utterances in context must include an account of the principles by which the context for interpretation of a given utterance is selected from the other possible
contexts. These principles cover not just verbal communication but all types of communication which are verbal and non-verbal. Widdowson (1979) believes that while learning his language, the child is at the same time acquiring how to monitor his environment by organizing it into conceptual classifications and internalizing patterns of social behaviors. It is difficult to accept that the child uses his experience and the language system in communication without regarding the contexts which made this system meaningful in the first place.

In using language we naturally follow the principle of communication economy whereby we pay attention to linguistic features only to the extent which is needed to make connection with context and so we achieve the indexical meaning which is suited to our purpose. This process of mediation doesn’t depend on linguistic analysis but it will involve the matching up to context in which communication is performed. Which elements are influential in fulfilling this communication and the interpretation? The answer lies in the fact that the way we view the world is governed by our socio-cultural background, our experiences within it and our shared knowledge which promotes understanding. Needless to say that language occurs in specific contexts with real users who have different personalities, relationship, and socio-economic status and in specific situation with a specific purpose. This has been represented diagrammatically by Valerie Arndt et. al in (2000). The figure 2.1 explains what is meant by language – in – use:
This diagram containing the basic features of language use is a convenient mode of representing the relationships of the different categories of language use; it deals with the three dimensions consisting what, how and where. These dimensions need to be considered in interpretation of the discourse.

It shows how the specific context influences the language choices. Therefore it can be claimed that any communication is interpreted under the light of the context which, in turn, is determined by many factors such as: participants (who), addresser, addressee (whom), time (when), place (where), purpose (why), subject or topic (about what), channel (in what way), setting, code (what language, dialect), message form (chat, debate, love and friend letter), and event (the nature of communicative event within which a genre embedded). These criteria are affected by the social and cultural expectations of the participants and can be used by discourse analyst to ascertain whether the act of utterance is well formed or not.

Specifying the features of context would be relevant to the identification of a type of speech event. Having knowledge about them help the recipients to have different expectation of the sort of language both with
respect to form and to content. In Chomsky’s view (1965) contextual factors provide favorable conditions for the learning of the linguistic system. In Halliday’s view these factors are embodied as design features of the system itself.

In many cases, one cannot tell what act is being performed in the uttering of a certain sentence unless one is provided with the context. The context of utterance and the conventions of use associated with some discourse very often override the linguistic indicator. The role of context in communicative events has been developed by Hymes (1962); he believes that relying on the context limits the range of possible interpretation and also supports the intended interpretation:

The use of a linguistic form identifies a range of meanings. A context can support a range of meanings. When a form is used in a context it eliminates the meanings possible to that context other than those the form can signal: the context eliminates from consideration the meanings possible to the form other than those the context can support (quoted in Wootton, 1975, p. 44).

Some researches have been carried out to show the role of context in the process of comprehension. In a series of experiments reported by Bransford and Johnson (1973), subjects were presented with well constructed texts to read, comprehend and recall. The result of the experiment demonstrated that the comprehension of English texts depends not only on knowledge of the language, but also on extra-linguistic knowledge, particularly related to the context in which the texts occur.

In view of the above, for interpretation of the discourse, one needs to rely on the context, the relationship between participants, linguistic elements
and extra-linguistic knowledge including the semantic and pragmatic aspects.

2.2.2. Linguistic form, semantics and pragmatics in context

Utterances can be classified in terms of grammatical structure, semantic or logical structure and what sentences do (functional approach). In this approach there are some functional values which are independent of the actual words and their grammatical arrangement. In comprehension process, difficulty arises because of concentrating on the words and understanding the grammar of the language uses rather than focusing on the message conveyed by the sender of the message. In so doing, the readers miss important semantic cues which could enable them to synthesize the content of the message. They can not build words into higher-level meaning which sometimes requires resort to the other factors. Dian Blakemore (1992) stated that to determine the meaning of a message we should rely on the linguistic forms and the non-linguistic factors. The reader is expected to recover a specific message on the basis of non-linguistic or contextual information as well as linguistic representation. This means that to achieve complete and successful communication in English, the pragmatics, syntax and phonology aspects of the language are to be considered. Pragmatics is the study of the relations of signs to their interpreter, syntax is the study of the relations of signs to signs and semantics is called for the study of the relations of signs to world.

A text has structure but it is semantic structure not grammatical. Just as a syllabus has a phonological structure, and a clause has a grammatical structure, a text has a semantic structure. To understand a text semantically means to be able to identify a macrosemantic
representation of which that series represents an expansion. A text is semantically coherent to the extent that it allows for such an operation. A grammar pairing phonetic and semantic representation of sentences can not determine some elements used in the utterances. As grammatical representations do not have intentional properties, the grammar should include a component with intentional properties along with a purely formal component.

Van Dijk (1977) suggests that in order to account for the well-formedness of discourse, a ‘pragmatic component’ with rules relating sentence-context pairs should be included to our grammar to interpretation at a global level of semantic description or “macro-structure” (p. 6-7). This strategy means that we could speak of a language using pragmatics in exactly the same way that we do using syntax or phonology. It is to be mentioned that studying discourse analysis includes studying syntax and semantics and also studying pragmatics (Gasdar, 1979). Pragmatics is defined as a speech situation which includes not only the utterance, but also the shared knowledge about the utterance. This shared knowledge is the context of the utterance.

2.3.3. Review of some related theories

Due to different points of views, there are some related literatures on theoretical views of language. Foreign language teaching as a profession focuses on sound linguistic as well as psychological theories. In this line, Widdowson (1990) says:

There are two approaches to language description: semantic and pragmatic. The semantic approach provides an account of how the language contains within itself, within its grammar and lexis, the essential resources for meaning. The
pragmatic approach on the other hand focuses on how these resources have to be exploited for language users to achieve meaning. On the one hand, then, we have meaning seen in terms of a potential contained within linguistic form. On the other hand, we have meaning seen in terms of the procedures and contextual conditions that come into play in order for this potential to be realized. These two approaches to language description are complementary. They inform different approaches to language pedagogy (p.117).

Also, three different theoretical views are taken into account as the bases of the current approaches and methods in language teaching. The first is the structural view which describes language as a system of structurally related elements for coding of meaning. To achieve language learning, one should master the elements of this system which are defined in terms of phonological units, lexical units and grammatical units. The second view of language is called the functional view. In this view language is served as a tool to express the functional meaning. This theory emphasizes the semantic and communicative dimension rather than the grammatical characteristics of language. Wilkins’s Notional Syllabus (1976) is an attempt to spell out the implications of this view of language for syllabus design. A notional syllabus would include not only elements of grammar and lexis but also specify the topics, notions, and concepts that the learner needs to communicate about. The English for specific purpose movement begins from a functional account of learner’s needs. The third view of language is the interactional view in which language is seen as a vehicle for the realization of interpersonal relation and for the performance of social transactions between individuals. This theory focuses on the patterns of moves, acts, negotiation and interaction found in
communication. These three models of language provide the theoretical framework motivating a particular teaching method, but they are incomplete and need to be supplemented with theories of language teaching. Structural manipulation through pattern practice is proposed as a process which facilitates the communicative purpose. Lado (1957) argues that this practice provides situations for effective communicative use. He talks of “the message conveyed through the language” and of “the meaning of the communication” as linguistically encoded (p.75). So it appears that he conceives of meaning as intrinsic to language itself, a property which is signaled through the medium of language. This view which defines meaning as a function of linguistic sign can be contrasted with the concept of meaning as significance which is mediated by human agency. In this view, meaning is a pragmatic matter of negotiating an indexical relationship between linguistic signs and features of the context. In the medium view, the learner is dependent on the teacher as a source of information. The teacher’s task is to transmit and the learner is to receive what is transmitted. The language constitutes, in Holiday’s view, a meaning potential, and this can be manifested through sentence, but the potential also can be realized in language use which is related to the context. So, it is acceptable that knowledge of language is a prerequisite for communication but it is not a sufficient condition. Language is medium for the demonstration of meaning potential but this can only be realized by mediation for a purpose. In structural approach, language learning comes about by teaching learners to know the forms of the language as a medium and the meaning they incorporate but in communicative approach; it is believed that language learning comes about when the teacher gets learners to use the language pragmatically to mediate meanings for a purpose. They will learn knowledge of the
language itself, the formal and the semantic properties of the medium, and there is no need to teach it explicitly. The definition of teaching as a pragmatic process of continuous evaluation applies only to the teaching of language but is in principle applicable the teaching of all subjects on the curriculum. So it is supposed that a concern for grammar is inconsistent with the principles of communicative language teaching. This is because of the impoverished concept of the nature of grammar, one which does not account for the complementary functioning of lexis and syntax as an essential resource for the negotiation of meaning in context.

The written texts are not simply large grammatical units or a kind of super-sentence. A text should be seen as a semantic unit or the unity of meaning in context, “a texture that expresses the fact that it relates as a whole to the environment in which it is placed” (Halliday & Hasan, 1983, p. 293). As a semantic unit the text is realized in the form of sentences and in this way the relation of text to sentence can be interpreted. The expression of the semantic unity of the text depends on the cohesion among the component sentences of the text. Writers need to make use of semantic cohesive ties to signal texture and the reader reacts to it in his/her interpretation of this texture. Cohesive devices such as discourse markers signal explicitly the coherence of what may be a complex and text. Therefore, cohesion can reasonably be used as a criterion for the recognition of the boundaries of a text (Halliday & Hasan, 1983, p. 295).

2.4. Cohesive elements as coherence devices in text

In order to construct discourse, it is needed to establish additional relations within the text; these relations may involve elements which can be both smaller and larger than clauses, from single words to lengthy passages of text. It does not depend on the grammatical structure but on
some devices. These non-structural resources for discourse are called cohesion. The term cohesion has been defined in various ways; some researches relate the term cohesion to the smaller units of language in the text and to the surface structure of the text. Halliday & Hasan’s book (1976) is a detailed exploration of the view that a text is created by cohesive relationships within and between sentences, that is, by the use of cohesive devices which are available in a language. They claim that cohesion is a part of the system of language and point out that a text is a unit of language in use and it does not consist of sentences. In a language, the conveyed meaning is crucial element in communication and it can be raised either implicitly or explicitly. The relation established by a cohesive device doesn’t always indicate a relation between linguistically realized meanings, that is, even addressee who is faced with two sentences related by a cohesive device, he/she has to go beyond their linguistic resources in order to arrive at an interpretation. Recent researches on interpretation of discourse have adopted the view that the ability of addressee in recovering the messages is due to their assumption that in discourse, linguistic strings are connected, i.e., discourse is coherent. This fact is formed on the basis of their background or contextual assumptions. They will be able to recover any kind of message as long as they can recognize that the segments of the discourse cohere in some way and are bound together by principles of connectivity of textual unity and in this case we are able to interpret them as connected and pretend that discourse is comprehensible. These connections are not always made explicit; they can be explicit or implicit. This kind of relationship needed for interpretation is coherence. This produces one particular interpretation in which the elements of the message are connected, with or without overt linguistic connections between those elements. Coherence is the feeling that a text hangs
together, that it makes sense. Some researches relate the term coherence to some overall integrity in the text and to the concepts and relations underlying its meaning. A question is raised: How can the reader get access to the writer's intended meaning? In addition to the assumption of coherence, the principles of analogy, local interpretation and general features of context, the reader also has knowledge of other standard formats in which information is conveyed, sentential structure, the regularities of discourse structure and the regular features of information structure organization. These are the aspects of discourse which the reader can use in his interpretation of a particular discourse fragment. Some writers like Dijk (1977) and Hobbs (1978 & 1979) assume that coherence of context can be explicated in terms of coherence relations between propositions. However, they recognize that the meaning relations within a text are realized by sentences. But it is not clear that the meaning relations must be realized explicitly for a discourse to be coherent. Sometimes these can be conveyed implicitly. Moreover, the relation indicated by a cohesive device is not always related to the linguistically meaning. That's why when the listeners encounters two sentences related by a cohesive tie, he/she has to use non-linguistic resources and contextual assumption to interpret the discourse. So we need to turn to the semantic relations sometimes realized by cohesive ties.

Labove (1970) argues that there are rules of interpretation which relate what is said to what is done and it is on the basis of such social and non-linguistic rules that we interpret some discourse sequences as coherent and others as non-coherent. To arrive at an interpretation of a message solely based on the words and structure of the sentence is a pervasive illusion in the analysis of language. It is common that two formally unconnected utterances placed together form a coherent piece of
discourse because there is an assumed coherent structure to discourse over and above the more frequently described structure of sentential form. It is a mistake to assume that we operate only with syntactic structure and lexical items to our interpretation of a given message. Yule and Brown (1983) state:

We have isolated three aspects of the process of interpreting a speaker’s /writer’s intended meaning in producing discourse. These involve computing the communicative function (how to take the message), using general socio-cultural knowledge [facts about the world] and determining the inferences to be made (p. 225).

A complete theory of discourse coherence requires a harmonious layering of several levels including vocabulary, sentence structure, meaning, discourse context, style, and background knowledge. When these levels lack coordination, coherence is more difficult. Therefore, the sender should try to coordinate the levels to render the message interpretable. A sequence of sentences linked to the next by a coherence relation should create a unified topic, that is, discourse is not an arbitrary sequence of utterances and the meaning of each sentence should define the meaning of the discourse as a whole. It goes without doubt that the identification of the discourse topic itself depends on the recipient’s ability to recognize the proposition underlying each sentence of the text. As mentioned above, coherence is established by a variety of clues and relations which belong to different levels of language and work together simultaneously in varying combination. Shiffrin (1985) argues that,

coherence can not be considered the result of any single level of patterning or structure: if we attempt to analyze the syntax of a discourse without also analyzing its semantic
meaning or pragmatic force, we may not get very far in understanding what quality (or qualities) distinguishes coherent discourse from a random collection of sentences (p. 662).

A text can include a cluster of coherence types such as prosodic coherence, syntactic coherence, semantic coherence, pragmatic coherence. So, overall coherence relates to these different types which are different from genre to genre and from situation to situation. Following Goffman’s (1983) constraints on communication system, the coherent text is the result of using our knowledge of scripts, speech events, syntactic markers of various types and rhetorical organization, and the topic. But when the connections which are drawn between various parts of the discourse are not very apparent, a wide repertoire of cohesive markers needs to be used to guide the reader. Cohesive ties help make relations among sentences or clauses of the discourse more explicit. The analysis of cohesive ties shows how the readers or writers use linguistic signals to promote coherence in the text. Cohesion is only a guide to coherence and coherence is something created by the reader in the act of reading the text. Although cohesion alone cannot fully account for coherence in discourse, the psycholinguistic literature has shown that cohesion facilitates coherence. Cohesive markers in the text are used to create links across sentence boundaries and pair and chain together items that are related. But reading is a complex process and for interpretation we have to interpret the ties and make sense of the message. Chapman (1983), drawing on work on cohesion (Halliday & Hasan, 1976) noted the kinds of difficulties which are related with the cohesive ties in texts, such as pronouns, for L1 learners. Such difficulties are likely to be correspondingly greater for L2
learners and therefore these learners are faced with lack of comprehension.

Although the learner’s knowledge about the genre structure of any discourse promotes reading processes, many foreign students experience difficulty in reading English texts and doing written assignments because of an inadequate grasp of patterns of rhetorical organization and the various cohesive devices necessary for coherent prose (Halliday & Hasan, 1976). In reading, teaching the students to become more aware of such devices facilitates the process of understanding and results in better understanding the text. In a study carried out by Cohen et.al. (1979) concerning with the reading problem of the students, he found out that foreign students studying in English often didn’t identify and understand “conjunctive words signaling cohesion, not even the more basic ones like however and thus” (p. 160) in their Science and Economics texts; therefore they encountered with some comprehension problems. These researchers argued that reading of non-native speakers is more locally than native speakers and because they don’t always attend to connectives, they have trouble synthesizing the information at the intra and intersentential level as well as across paragraphs. The instruction in this matter is needed for reader of non native speaker for getting access to the information. Organizing the idea in reading and writing is the main key to receive the message and make comprehensible a text in reading. The students need instructions in this area. Cooper, 1979 (as cited in Basley, 1990) comments:

Many students can write grammatically correct sentences but fail to progress because they are unable to organize their ideas in a manner acceptable to an English reader. Similarly, though they understand individual sentences,
students fail to comprehend extended pieces of writing because they are unable to see the organization of the idea.

In one sense, Comprehension can be defined in terms of grasping the meaning relationships (coherence) which exist inside a sentence by the receiver. In a coherent text, when sentences are overtly related, we can detect cohesive ties such as reference, substitution, ellipsis and discourse markers. So in a reading course, our teaching method needs to turn to the semantic or conceptual relations that may be realized by cohesive ties. In the next step, discourse markers as a cohesive device making coherence in the text will be discussed.

2.5. Discourse markers promoting coherence in the text

2.5.1. Definition and theoretical view of the discourse markers

Within the past ten years, there has been an increasing interest in the theoretical status and defining of discourse markers. These lexical expressions have been studied under various labels, including discourse markers, sentence connectives, discourse connectives, pragmatic connectives, discourse operators, and cue phrases. The term ‘discourse markers’ is preferred over others because of its inclusive aspect; since there are different categories of markers with different functions. Discourse markers indicate that language is not only a matter of proper grammatical structure and word choice, but also a matter of information that is culturally and socially bounded. Although most researchers agree that they are expressions which relate discourse segments, there is no agreement on how they are to be defined or how they function. One of the earliest and most extensive discussions of discourse markers is presented in Schiffrin (1987, P. 31), who defines discourse markers as “sequentially
dependent elements which bracket units of talk” and argues that they are multifunctional and operate at five different planes of discourse. These elements establish the integration which are needed for discourse coherence by relating (i) conversational turns (the exchange plane) (ii) speech acts (the action plane), and (iii) propositions (the ideational plane). Since coherence is not independent of the participants and their knowledge, Schiffrin considers producer/ receiver and producer/ utterance relations as a forth plane of discourse, which she calls (iv) ‘the participation framework’. Also relevant knowledge of the producer and recipient are included in a separate plane, (v) the information state (oh, you know).

The detachment of an expression or a word which is used as a discourse marker in an utterance does not cause a change in the meaning since discourse markers do not contribute to the propositional meaning of the utterance in which they occur. In fact, discourse markers like but, then,… are conjunctions which are used not just to link individual utterances, but often linking one producer’s utterances with another producer’s utterances, at the beginning of turns, or making a shift in topic or sub-topic. In this sense, they are better thought of as discourse markers, in that they organize and manage quite extended stretches of discourse. When they are used in inter sentencetic, the type of meaning relationship between independent sentences in a text is established. Ozbeck (1995, as cited in Sonmez, 2000, p.56). Considering the importance role of discourse markers in coherence establishment in the text, it is claimed that these elements are a class worthy of study on its merits in every language Levinson in his book entitled pragmatics argued that:

there are many words and phrases in English, and no doubt most languages, that indicate the relationship between an
utterance and the prior discourse. Examples are utterance-initial usages of but, therefore, in conclusion, to the contrary, still, however, anyway, well, besides, actually, all in all, so, after all, and so on. It is generally conceded that such words have at least a component of meaning that resists truth-conditional treatment... what they seem to do is indicate, often in very complex ways, just how the utterance that contains them is a response to, or a continuation of, some portion of the prior discourse (p. 87-88).

In the recent years, some theoretical status of discourse markers have been presented emphasizing on what they stand for, what they mean, and what functions they have in language.

Fraser (1999) focuses on four research efforts which capture the issues surrounding discourse markers. He claimed that the researchers were unaware of other researchers’ efforts in the initial stages. The most detailed and initial effort belongs to Schiffrin (1987), labeling the term of ‘discourse markers’ for the first time. She analyzes in detail the expressions ‘and, because, but, I mean, now, oh, or, so, then, well, and y’know ’ as they occur in unstructured interview conversations. She suggests that discourse markers do not easily fit into a linguistic class. In fact, in her point of view paralinguistic features and non-verbal gestures are possible discourse markers. The second approach is that of the Fraser (1987) who approached discourse markers from solely a grammatical-pragmatic perspective. He believed discourse markers do not contribute to the propositional content of the sentence but signal different types of messages. In his later works (1988, 1990 and 1993), he focused on what discourse markers are and what their grammatical status is. He characterized discourse markers as a linguistic expression only (in contrast
to Schiffrin, who permits non-verbal discourse markers). He (1999) defines discourse markers as a class of lexical expressions which are drawn mainly from the syntactic classes of conjunctions, adverbs, and prepositional phrases. In many cases, they relate the interpretation of the segment they are a part of, to the previously segment. They have a core meaning, which is procedural, not conceptual, and their more specific interpretation is 'negotiated' by the context, both linguistic and conceptual. He represents the canonical form of this relationship which is imposed by discourse markers between some aspects of the discourse segment they introduce, named S2, and some aspect of a prior discourse segment, named S1, as:

\(<S_1, DM+S_2>\), or \(<S_1, DM+S_2>\)

Blakemore (1987, 1992) provided the third approach to the study of discourse markers. In her belief they are considered as a type of Gricean conventional implicature, but she rejects his analysis of a higher order speech act (Grice, 1989 & Blakemore, 1992), and focuses on how discourse markers impose constraints on implicatures. She argued that discourse markers do not have a representational meaning but have only a procedural meaning, which, in turns, includes instructions about how to manipulate the conceptual representation of the utterance. The researchers like Mann and Thompson (1987&1988), Hobbs (1985), Sanders et al. (1992), Knott and Dale (1994), proposing ‘Rhetorical structure theory’ provided the forth theoretical perspective on discourse markers. Their works being in the field of discourse coherence have addressed the nature of relations between the sentences of a text such that "the content of one sentence might provide elaboration, circumstances, or explanation for the content of another" (Knott and Dale, 1994: p. 35). The effort of these researchers has resulted in various accounts of discourse coherence, where
the use of discourse markers usually makes explicit discourse relations. This approach of developing the relationship as a tool for text analysis is opposite to the other three approaches, where a linguistic entity, discourse markers, was the primary unit of study, and their effect on the interpretation of discourse was secondary. This fourth perspective focuses the research on the number of discourse relations and their justification.

Shiffrin (1987) has identified a set of conditions which are listed below identifying an expression as a discourse marker. They have to

- be syntactically detachable from the sentence;
- be commonly used in the initial position of an utterance;
- have a range of prosodic contours such as tonic stress and must be followed by a pause or phonological reduction;
- be able to operate at both local and global levels and on different planes of discourse. They either have to have no meaning (well), a vague meaning (all in all) or be reflexive (of the language; of the speaker) (p. 328).

Discourse markers are an important persuasive resource which is used to influence receptors'/readers' reactions to the text according to values and established conventions of a given discourse community. Theoretically, discourse markers are a functional class of verbal and non-verbal devices which provide contextual coordination for ongoing talk (schiffrin, 1987). According to Hyland (1999), in expert to non-expert communication discourse markers help to present information in a clear, convincing and interesting way in an effort to promote acceptance and understanding.

Discourse markers as a cohesive device are usually used for the production of coherence and, specially, to make clear the writer’s intentions and show what the writer intends to do with words. Shiffrin
(1987) sees discourse markers as serving an integrative function in discourse and thus contributing to discourse coherence. In order to facilitate the reading process, we need to prepare students not only to pay attention to the significance of discourse but also to recognize the various devices used to create textual cohesion and more especially the use of linking-words and discourse markers. These elements signal the information structure of the discourse and explicitly the coherence of what may be a complex text. Simple recognition of the inter or intra-sentential connectors will help learners to understand the development of ideas and propositions in the passage. Cohesive devices such as discourse markers can be reasonably used as a criterion for the recognition of the boundaries of a text (Halliday and Hassan, 1983: 295).

In many cases, new text begins with a sentence which shows no cohesion with the ones preceding it. Some times isolated sentences or other structural units do not necessarily cohere with those around them, in this case they may form a part of a connected passage. For Mealy and Nist (1989), the ability to recognize quickly and accurately the specific relationship between two pieces of information is a skill invaluable in improving the reading speed and comprehension. Cohesion can be considered as a set of relations in a language which is a necessary, though not sufficient condition for the creation of text (Halliday and Hassan, 1983: 299).

2.5.2. Discourse markers & prepositions

Discourse markers have the same function as prepositions. Their function is to link words between components of sentences, signaling the types of meaning relation between such components to the discourse receiver. They usually occur at the beginning and only seldom in the
middle of an utterance (De Bruyn, 1998: P. 128). Especially if preceded by a pause, they serve as a barrier between two messages that run parallel. The potential relationship with the message that follows the preceding discourse marker is not necessarily dependent on the presence or absence of the discourse marker. Preposition discusses another part of speech distinct from conjunctions or discourse markers. It is to be said these two language elements are the same functionally; both of them are linking words or connectors which signal the meaning relations, however, they are different in terms of structure; discourse markers occur with clauses but prepositions occur with noun groups.

2.5.3. Classification of discourse markers

There are many discourse markers that express different relationships between ideas. The most common types of discourse markers in terms of their function are as follows:

*Adding something moreover:* in addition, additionally, further, further to this, also, besides, what is more.

*Making a contrast between two separate things, people, ideas, etc.:* however, on the other hand, in contrast, yet.

*Making an unexpected contrast (concession):* although, even though, despite the fact that, in spite of the fact that, regardless of the fact that.

*Saying what the result of something is:* therefore, consequently, in consequence, as a result, accordingly, hence, thus, for this reason, because of this.

*Expressing a condition:* if, in the event of, as long as..., so long as..., provided that..., assuming that..., given that....

*Making what you say stronger:* on the contrary, as a matter of fact, in fact, indeed.
Saying why something is the case: because, since, as, insofar as.

Discourse markers contain valuable information about the text which makes comprehension easier. Thus it is a logical assumption that if students are not able to recognize and interpret specific markers in a text, they will be faced with the difficulty to comprehend the text and also if a piece of writing does not benefit from sufficient discourse markers to establish the coherence, it would not seem logically constructed and the connections between the different sentences and paragraphs would not be obvious.

Familiarity with discourse markers would certainly help the reader with his/her comprehension of a text by enabling him/her to grasp the interrelations among the new concepts presented in the text, especially the scientific ones.

2.5.4. Researches concerning the role of discourse markers

Discourse markers are as signals that the piece of text being processed is to be linked to some other piece of the text in a particular way. Although, there is no precise literature dealing with the coherent role of all discourse markers on the academic reading comprehension, some researches have been carried out to present discoursal function of some discourse markers. Most discourse markers that have received in-depth analysis are and, but, well okay, like, you know, what I’m saying Maschler (2002). Other analysis belongs to Waring (2003) who studied about also and concluded that it maintains the look of coherence by legitimizing one’s speaking rights in a locally disjunctive environment. He argued that also is called discourse markers because it did seem to perform some interactional duties beyond its semantic/referential meanings. In addition some experimental evidence shows that discourse markers are used in the
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recognition of rhetorical relations. Haberlandt(1982) tested reading times with marked and unmarked relations between two sentences, and found that the pairs that were marked with discourse markers were processed faster. In some cases, it can be argued that a relation is present, although not explicitly indicated. A rich array of investigations into the complex nature of discourse markers have been accomplished in the past 15 years (e.g. Condon, 2001; Craig and Sanusi, 2000; Erman, 2001; Fraser, 1990; Kleiner, 1998; Lenk, 1998; Maschler, 2002; Schiffrin, 1987; & Schourup, 2001).

In another study, Flowerdew and Tauroza (1995) examined the effect of discourse markers on L2 lecture comprehension. They used an authentic lecture with the control group and exposed the experimental group to a version of the lecture from which the naturally occurring markers had been deleted. They decided on this specific lecture because the lecturer provided an example of moderate use of micro-markers and the lecture was suitable for the particular students. They used self-assessment, written partial recall and a short answer tests to provide a different perspective of how the students comprehended the lecture. They concluded by using the results of the measurement that subjects comprehended a lecture better when discourse markers are included than when they are omitted in the lecture (Flowerdew and Tauroza, 1995). In the research conducted by Smit (2006), she intended to build on the outcomes of the other studies which show that knowledge of discourse markers as used in academic lectures enhance student’s listening comprehension of content lectures. The result of this research indicated that the listening comprehension and recall of content information would be enhanced in case the learners were sensitized and trained in the recognition of those discourse markers which indicated major transitions.
in spoken academic lectures. She argued that encouraging students to recognize the role of discourse markers in denoting the structural turns in lecture may improve the quality of their listening comprehension in the academic situation. In this study, based on an expository lecture which gave content information, the results of the test showed a marked increase in the comprehension of the lecture in the experimental group in comparison with the results of the control group. It is clear that knowledge of the use of discourse markers in an academic lecture is not a cure for all difficulties which arise in students’ listening comprehension at tertiary level. Also in the role of relational markers, Geva and Ryan (1985), on the basis of a reading comprehension test, found that the high, medium and low groups benefited from the typographical highlighting of connectives. But when the connectives were not highlighted, only highly skilled readers benefited from their presence.

2.6. Academic Text Reading

2.6.1. ESP Reading properties

Reading involves the application of elements such as context and purpose along with the knowledge of grammar, vocabulary, discourse convention, graphemic knowledge, and metacognitive awareness in order to develop an appropriate meaning. Clarifying the purpose of the reading is the essential factor in developing second or foreign language contexts. In a university setting where the medium of instruction and communication is not English but students are required to read content-course bibliographies in English, there is a need for reading comprehension courses in EAP. Probably, the most needed skill in ESP worldwide, especially in academic contexts, is reading comprehension.
Anbarshahi (1997). Alderson (1984) claims, it is frequently the case, that the ability of the students to read English is often assessed using a test of reading comprehension by the students’ subject departments. Also Sherrin (1989) claims that of all the language skills, reading is the most necessary for independent learning since through reading students can gain access to further knowledge both about the language and about other subjects. The goal of ESP courses is to provide students with the skills and strategies needed to meet their English reading requirements for their academic courses. In such settings, ESP course designers are faced with a number of issues and practical problems. The text which is assigned in academic content courses requires a high level of linguistic proficiency and presupposes extensive background knowledge. In college or university courses, reading depends on course objectives, which are determined by the types of students, needs and situations. Students have very different needs in reading. Thus, the responsibility for curriculum design in EFL programs at all levels of reading instruction should be sensitive to the needs of the students. What the readers read in the real world and why they read may not be entirely replicable in language classrooms. However, language students come to the class from the real world in which they read certain types of materials for very real purposes. As readers’ purposes for reading change, they vary the way they read; when they read for information, they read differently from when they read for interest or for pleasure (scanning, skimming, extensive reading...). The level of detail learned from the text will vary depending on what the reader wants to learn from the text in reading. The reader’s intent in reading fiction is different from the reader’s intent in reading a professional article, the researcher retrieves detail from research reports because that is what he or she is reading for. But in addition to the level of detail, reading intent can
also affect the nature of the information that is acquired from the text. Thus, the very nature of the material acquired from the text has changed as a function of the reader’s actions. These discussions mention that the reader’s intent in reading any text is very important and it results in the distinction of ESP reading task from other reading tasks. This intent may be due to the needs of readers to read and it can be mentioned that texts in different fields are formed according to these needs. These texts, being different from general English, have specific purposes and specific form. ESP text has its own structure, text type and vocabulary; successful readers should have this knowledge to overcome the difficulties raised in reading ESP.

2.6.2. Reading theory and model and their application in ESP

Regarding the nature of reading, the theoretical assumption that need to be held have to be determined. This assumption along with the already held assumption regarding teaching, course goals, and objectives would ultimately determine the types of syllabus to be used for the classroom methodology, the materials and the assessment methods. Reading is viewed as a complex cognitive process, where the reader engages in meaning construction based on the information presented in the text. Students need a variety of reading skills and strategies to cope with their courses. They need to be able to get the main idea of the passage and to understand a principle. Students can probably learn to read more easily than they can acquire any other skill, and they can use reading materials as a primary source of comprehensible input as they learn the language. A competent language learner is assumed to be necessarily a good reader in that language. The purpose of reading is the retrieving the meaning of the text. A reader should activate his knowledge of the world to recreate the
Reading is an indispensable part of any educational program and is an active process involving strategies that can be learned and it is perhaps the best means for acquiring large amounts of comprehensible input because comprehension in reading has its own special importance (Chastain, 1988; Rivers, 1981; Samuel Kamil, 1988; Alderson, 1984). It is claimed that effective reading is judged not by reference to the accurate rendering the linguistic coding a written text, but by strategies which the reader can be used to draw on which may signal progress, even in the absence of accurate text decoding. Reading strategies are of interest for what they reveal about the way readers manage their interaction with written text and how these strategies are associated with text comprehension. Strategies can be defined as learning techniques, behaviors, problem solving or study skills which make learning more effective and efficient. Research in second / foreign language reading suggests that learners apply a variety of strategies to assist them with the acquisition, storage and retrieval of information (Ringney, 1978). To analyze and to describe the reading of academic written text, there are two ways, according to Widdowson (1983): one way is to analyze it as a sample of text; in this way, we concentrate on some certain linguistic structure and vocabulary i.e. the formal properties as instances of linguistic usage. It is called register analysis which doesn’t consider communication function. Another way is to analyze it as a sample of discourse; this means characterize it as a description, a report, instruction, etc. In such a way we are dealing with the communicative function not with linguistic properties. An analysis of the sample as discourse must take into account both verbal and non verbal (symbol, table, formula..) features and the manner in which they are related. As an instance, when we are faced with one formula in a chemical text, it is considered as an
English sentence in respect of linguistic usage, but it represents a general statement expressing a chemical act in respect of communicative use. It is to be mentioned that different linguistic forms may express one function and different functions may be expressed with one linguistic form. The theory of the two above mentioned ways of analysis is that scientific English concerning one subject is not described as a text chosen from other varieties of language in terms of its linguistic properties, rather it is a discourse selected from other uses of language in terms of its function in communication. Research in the acquisition of second language reading skills has shown that reading comprehension is not simply something a reader gets from a text by simply reading the words. It is described as an active process not passive and which suggests that the reader is involved in an active and constructive process building meaning from a text, based on ability, skills and prior knowledge in order to recreate the writer’s intended meaning (Goodman, 1973; Palstone, & Bruder, 1976). In other words, reading requires the reader to focus his/ her attention on the reading materials and integrate already acquired knowledge and skills to absorb what someone else has encoded in a written mode. On the basis of some researches, one can reasonably conclude that learners do not need to be supported with the mechanical aspects of learning to read but they need specific help with effective processing of the text. Such processing is aided, moreover, by an understanding of the sociocultural origins of the texts and literacy practices.

One of the most widely cited and agreed –upon definition of reading describes reading as the process of constructing meaning through dynamic interaction among: the reader’s existing knowledge, the information suggested by the text being read and the context of the reading situation (Wixson, Peters, Weber and Roeber, 1987). Some other
authors state that reading is the act of simultaneously reading the lines, reading between the lines and reading beyond the lines (Manzo and Manzo, 1990). By reading the lines of the text they meant the act of decoding the words to grasp the author’s basic message, by reading between the lines, they meant making inferences and understanding the author’s implied message and by reading beyond the lines they mean judging of the significance of the author’s message and applying it to other of background knowledge.

On the base of perspectives of different fields of study, reading is considered as practice, product or process. The first has captured the interest of social psychologist: their concern is with reading and writing practices as related to their uses in everyday life. The second orientation focuses on the form and meaning of written texts and their constituent parts. The third perspective gives the great role to the reader in the ongoing processing of written language and the strategies that he/ she draws on in constructing meaning from the text. In focusing on the text as a product, priority is given to the text and parts of texts with varying attention paid to form alone or the relationship between the form and the meaning. Readers make analogies between new and known words; make wider use of their linguistic knowledge than is involved in grapheme to phoneme decoding. The bottom up has been used for approaches to reading which emphasis text- based features at word and sentence level. A different kind of text- focused approach to reading is exemplified by the genre approach: this approach considers the text as a whole, focusing not on word and sentence level, but emphasizing the value for readers of an awareness of the distinctive features of the range of text type characteristic of social settings, particularly related to schooling. In considering the text as a process, the focus is on the reader and it takes the reader rather than
the text as a point of departure. The top-down approach is used and gives great emphasis to the kind of background knowledge and values which the reader brings to reading. The nature of this knowledge can be characterized as a “schema” or mental model allowing the reader to relate new, text-based knowledge to existing world knowledge. Reader role shifted in 1980-1990; it was considered as an active one as opposed to a passive one. Thus the reader was described as “extracting” meaning from a text. More recently the next level of transition was observed where reading was considered interactive rather than simply active. Since reading is an interactive process that goes on between the reader and the text, resulting in comprehension. The text presents letters, words, sentences, and paragraphs that encode meaning. The reader uses knowledge, skills, and strategies to determine what that meaning is. To learn a language means to learn words and sentences, and also to learn the procedures to achieve and process them. Comprehension process of a text means extracting the meaning in the light of all available linguistic cues in combination with the learner’s general knowledge of the world. The top level comprehension is constituted by the knowledge system, i.e. the schematic knowledge and the bottom up is constituted by the language system, i.e. the informant’s knowledge of the L2 at the linguistic levels (systemic knowledge). A reading model should take both the levels into account. This model is derived from Widdowson’s (1983) theory of language use, as an appropriate framework for readers to make use of two types of knowledge in reading comprehension: systemic and schematic knowledge, which correspond to the readers’ linguistic and communicative competence respectively.

A significant body of literature posits that reading is an interactive process (Carrell, Devine, & Eskey 1988; Grabe, 1988, 1991; Rumelheart,
1977; Stanovich, 1980). According to Grab (1988, p.56), the notion of reading as an interactive process refers to “a kind of dialogue between the reader and the text” and evolved from schema theory. The term interactive model usually refers to the interplay of both bottom-up (lower-level) which includes decoding graphic features and grammatical characteristics and top-down (higher-level) reading strategies which include both global strategies for processing the text as well as activating conceptual (background) knowledge of the world (Eskey, 1988; Rumelhart, 1977). L1 non-proficient readers tend to employ world-level cues to focus on decoding the text and looking for intra-sentential consistency rather than connection between sentences and larger chunks of text. Thus, they don’t possess appropriate content and formal schemata. It seems that it is similar to L2 readers because they having less proficiency can’t allocate for higher level processing (Clapham, 1996, Carrell, 1988). In the view of above mentioned issues, the implications for comprehension of reading academic texts can be that ESP students should make a balance between top-down and bottom-up reading skill, try to know the text process strategies and also focus on meaning rather than on linguistic forms. According to Rumelharts’ interactive theory, higher-level processes such as paragraph-level semantic processing may influence or ‘interact’ with lower level processing such as word meaning access (Samuel & Kamil, 1988). Interactive models of reading appear to provide a more accurate conceptualization of reading performance than strictly top-down or bottom-up models do, when combined with an assumption of compensatory processing; interactive models provide a better account of using the orthographic structure and sentence within context. A key concept in ‘interactive-compensatory model’ is that ‘a process at any level can compensate for deficiencies at any other level’. Thus, if there is a
deficiency at an early print analysis stage, higher-order knowledge structures will attempt to compensate, on the other hand, if the reader is skilled at word recognition but does not know much about the text topic, it may be easier to imply recognize the words on the page and rely on bottom-up process. In this regards, Samuel & Kamil (1988) state:

Interactive- models …assume that a pattern is synthesized based on information provided simultaneously from several knowledge sources. The compensatory assumption states that a deficient in any knowledge results in a heavier reliance on other knowledge sources, regardless of their level in the processing hierarchy (p.63).

To get the intended meaning, skilled readers constantly shift their model of processing, accommodating to the demands of a particular text and a particular reading situation: less skilled readers tend to over rely on process in one direction producing deleterious effects on comprehension (Spiro, 1978).

Thus, the good readers understand the text and try to interact text model and situational model. They don’t rely on background and neglect the text model. Consequently, for foreign language reader, these two processes especially, both top-down and bottom-up skills and strategies must be developed, since both of them contribute directly to the successful comprehension of written text. Some factors which may interfere the bi-directional language of text-based and knowledge-based processing of text in EFL reading comprehension are schema availability, schema activation, skill deficiency and finally, misconceptions about reading, specifically about reading in a second language and in a second language classroom where reading evaluation is involved.
As ESP student may have some problem when they are faced with formal and content schemata; they are unfamiliar with various academic text genres, academic content and cultural references, it is needed to choose a text concerning the topic to develop content schemata and simultaneously to focus on rhetorical forms and typical academic genres to develop formal schemata in reading courses.

2.6.3. Schemata role in academic reading

Language teaching should be concerned with language use, then, it cannot be entirely based on the linguist’s idealization of data which is concerned with the contextualized sign as symbol. The concept of the scheme was proposed fifty years ago by the psychologist. Bartlett (1932) to account for the way information in stories is refashioned in memory so as to make it consistent with custom.

Carrell (1987) has investigated the usefulness of the notion of schema theory for second language reading and states that activating content information plays a major role in students’ comprehension and recall of information from a text. He was the first person who draws a distinction between content and formal schema. In his view, content schema refers to background knowledge of the content area of a text and formal schema refers to background knowledge of the formal rhetorical organizational structures of different types of a text. Grabe (1991) states that it is the knowledge of text organization which has special influences on the comprehension of a text. On the same line, Horsella and Sinderman (1992) identify the organizational patterns in texts and specify the linguistic means in order to determine patterns which would form the syllabus of ESP course.
Schema can be defined as cognitive construct which allow for the organization of information in long-term memory and provide a basis for prediction. So, schema is defined as having to do not with the structure of sentences but with the organization of utterances, as a set of expectations derived from previous experience which are projected on to instances of actual language behavior. It consists of stereotypical patterns of language use which are derived from instances of past experience which organize language in preparation for use. Schematic knowledge not only provides the process incoming information with relating it retrospectively to established patterns, it also works prospectively to project anticipations about what is to come. It is for this reason that we can learn to read with such rapidity, when the content and the manner of organization is familiar. The power of schemata to shape events in their own image is strong enough to override meanings explicitly signaled in the sentence if those meanings run counter to the schematic interpretation of an expression as an utterance. Interpretation procedures are needed to exploit schematic knowledge and bring this knowledge in the particular communicative use of language. All communication depends on the alignment of each interlocutor’s schemata so that they are brought into sufficient correspondence for the interlocutors to feel that they have reached an understanding. In relation to the propositional content of discourse, to what is being said, schemata can be thought of as frames of reference. In relation to the illocutionary activity of discourse, schemata may be thought of as rhetorical routines.

Needless to say that in communication process, the interpretation makes use of linguistic rules, but the point is that such use is mediated through schemata. These develop as the child acquires the lexical and syntactic elements; they provide individual with a way to arrange new
information to be interpreted. When these schemata are very familiar, procedural activity will be minimal. But schemata don’t tell us the whole story of language use. They are cognitive structures which constitute communicative competence. It is needed to have a procedural ability for realizing schematic knowledge as communicative behavior. This ability which is referred to as ‘capacity’ by Widdowson (1983, p.49) help the user of language to consider the language system as a meaning resources in order to relate it to the schematic knowledge of the conventions of language use. Schematic knowledge enable us to process incoming information by relating it retrospectively to established patterns, and also it is engaged prospectively to projecting anticipations about what is to come in the text. As professional texts have different structure, the background knowledge, schema theory, and knowledge of reading strategies in L2 play important role in comprehension of professional texts. Since comprehending a text is an interactive process between reader’s background knowledge and the text, it is the teacher’s role to give sufficient language and context clues to readers in order to help them process and activate the relevant schemata necessary for comprehension of the text. So it is believed that it is imperative to have access to efficient and rapid means of retrieving relevant information.

This knowledge and genre analysis can relate to ESP course. It seems that the aim of genre analysis is to establish schematic types to raise an activity which relates what we know and what we do. ESP course design can take advantage of schematic units derived from areas of use which is the students’ intended subject so that the students can achieve their own competence and objectives of the course.

2.7. Genre analysis: appropriate approach in ESP
2.7.1. Genre analysis

Swales (1981), having used the term of genre for the first time, considers author’s purpose to be of central importance. This purpose is explained with reference to the professional culture to which the author belongs. Thus, for Swales genre involves not only text type but also the role of the text in the community which produces it. The genre analysis approach looks at the operation of language within a complete text and considers the text as a system of features and choices. Selection is made according to the communicative purpose of the text producer. In Genre analysis, it is assumed that the members of a class of communicative events have some set of communicative purposes in common. These purposes are recognized by the expert members of the discourse community and form the genre which results in shaping the schematic structure of the discourse and influences the choice of content and style (Swales, 1981). In addition to purpose, samples of a genre show various patterns of similarity in terms of structure, style, content and intended audience. Based on many researches in ELT it is claimed that it is only within genres that viable correlations between cognitive, rhetorical and linguistic features can be established (Swales 1981, Dudley- Evans 1989, Bhatia, 1993, Naylor 1989). Dudley–Evans (1994) provides a clear introduction to genre analysis:

It has characteristic features of style and form that are recognized either overtly or covertly, by those who use the genre. Thus, for example, the research article has a known public purpose, and has conventions about layout, form and style that are to a large degree standardized (as cited in Jordan, 1997, p. 231).
He also argues that genre analysis may be used as a classification system by which the essential differences between one genre and the other genres and also between the various sub-genres are observed. The genre analysis approach seeks to see the text as a whole rather than as a collection of isolated units. He quotes that to teach very specific texts, the instructors need a system of analysis that shows how each type of text differs from the other types. Genre is seen as a staged, goal-oriented social process which is realized through register: a sequentially organized pattern of register patterns. One underlying motivation has been that in a given culture, not all combinations of field, tenor and mode variables occur. Bazerman (1988) referring the social aspect of genres indicates how each text may strengthen the genre it belongs to:

A genre consists of something beyond simple similarity of formal characteristics among a number of texts. A genre is socially recognized, repeated strategy for achieving similar goals in situations socially recognized as being similar. A genre provides a writer with a way of formulating responses in certain circumstances and a reader a way of recognizing the kind of message being transmitted. [...] Thus the formal features that are shared by the corpus of texts in a genre and by which we usually recognize a text’s inclusion in a genre, are the linguistic/symbolic solution to a problem in social interaction (p. 62).

Currently, it is widely accepted that genre interests have become interdisciplinary and are no longer considered static in form and structure, but that they are affected by context. The structure of an utterance is determined by its use and the communicative context in which it occurs (Freadman, 1999; Lyon, 1981). It is evident that language use is
considered as an effect of situational variables; the meaning of a word is not a fixed one, but depends on the other words with which it collocates. Thus, the analysis of the collocates of a word in a specific text will reveal the meaning of that word. The analyst working in the text seeks to describe the regularities in the linguistic relations used by people to communicate those meanings and intentions. In a general sense, the language is used as an element of social life which is associated with other elements; the different discourses are the different perspectives on the world. They are associated with the different relations people have to the world according to their positions in the world, their social and personal identities and the social relationships with other people. The notion of genre brings up a pragmatic dimension and incorporates a consideration of the socio-cultural conventions for the assessment of reading comprehension. Genre theory suggests that texts occur in social contexts and are employed by specific communities to achieve cultural goals. Miller (1984) described genre as a recurrent social action taking place in recurrent rhetorical situations in particular discourse communities. Swales (1990) further defined genre as particular forms of discourse with shared “structure, style, context, and intended audience”, which are used by a specific discourse community to achieve certain communicative purposes through “socio-rhetorical” activities of writing (p.8-10). Some authors have pointed out the close relationships between community and discourse: community involves discourse and discourse involves community. Thus, it is implied that both discourse and community can involve each other and it can be said that the notion of genre was applied on defining the concept of discourse community. This concept is defined by Swales (1990) as the following:
- A discourse community has a broadly agreed set of common public goals.
- A discourse community has mechanism of intercommunication among its members.
- A discourse community uses participatory mechanisms primarily to provide information and feedback.
- A discourse community utilizes and hence possesses one or more genres in the communicative furtherance of its aims.
- In addition to owing genres, a discourse community has some specific lexis.
- A discourse community has a threshold level of members with a suitable degree of relevant content and discoursal expertise (p. 28).

The genres of academic writing which members of one community like professors and students encounter on a daily basis include a startlingly broad range, from research reports and e-mail communication to requests for reprints and term papers. So, understanding an academic text requires an awareness of relationship between text form (i.e. language conventions of different academic genres), writer’s purpose(s), audience and social context. For this reason, some researches in the genre field have been carried out in the last two decades. The genre approach was mainly practiced in teaching research articles. These researches were based on analyzing the research articles or their specific sections. For example, Swales studied the introduction section of the research articles (1981, 1985, & 1990) and Nwogu (1997) studied the research article genre of medical articles, and Posteguillo (1999) examined the research article of computer sciences. Also, structure of medical discourse was studied from different perspectives by several researchers, for example, Nwogu (1995) studied the structure of medical discourse using the given–new
perspective. Her study indicated that the progressions of given-new information can account for the structure of information in sections of the experimental research paper. It is seen that the information in particular sections of the research paper can be organized effectively by adopting appropriate progression patterns. This is not to suggest that information in all paragraphs of a given section is organized by means of one progression pattern, but it suggests that there is a tendency for information to be organized by means of a particular progression pattern. Salager- Meyer and et.al (1990) did a principal component analysis of medical English scholarly papers which are referred to as both subgenres and text types. The results suggest a systematic difference between each text type and subgenre according to the attitude of the writer to the reader. They indicate that they see editorials, research papers and case reports as subgenres of the genre of medical English. Also Hopkins and Dudley-Evans (1988), Salager- Meyer (1990), Tompson (1994) have used structural move analysis to describe organization patterns in genre. The findings of genre analysis bring together the insights of the earlier approaches to text analysis and result in a greater sophistication in the examination of the writer’s purpose.

The term ‘genre’ is thought of as sociolinguistic activity through which members of a discourse community (participants) are able to achieve their communicative goals. The aim of genre analysis is to relate the linguistic features of a genre to the actions they perform, so the purpose of a particular genre, and the context in which it is set should play a crucial role in a genre-based approach to language learning especially in ESP settings. Nowadays, genre has become a popular framework for investigating the form and function of both oral and written discourse, and it serves as a technique for developing educational practices in the field of
language for specific purposes (LSP). Nevertheless, there have been little researches on the contrasts between different LSP texts, and on the usefulness of genre analysis for language teaching.

2.7.2. Perspective on ESP & EAP

English for academic purposes originates in an intention to identify and teach the language and literacy skills that students need to succeed in school, and especially in disciplinary contexts. EAP has its roots in formal comparisons of texts and evolves towards studies which encompass increasingly “narrower” and “deeper” treatments (Swales, 1990: P.3) of the social and institutional contexts in which texts are actually authored, circulated and evaluated. EAP courses for the student’s wishing to pursue higher academic studies in English are an important branch of the English for Specific Purposes (ESP). This movement which has grown rapidly in the last thirty years as the language teaching profession has attempted to meet the diverse demands of the professions for English language training. ESP courses are assumed to prepare students to get information from their specialized written materials conveniently. While remaining a part of ELT, ESP has developed its own procedures such as need analysis, materials and teaching methodology.

As Widdowson (1983) suggests ESP is a training operation which seeks to provide students with a restricted competence so that they could cope with certain clearly defined tasks. These tasks constitute the specific purposes which the ESP course is designed to meet. On the contrary, General English Proficiency (GEP) is an educational operation which seeks to provide students with a general competency so that they could cope with undefined eventualities in the future. ESP, as a teaching approach, begins with learner and the situation, whereas General English
begins with the language, consisting of a significant body of research into effective teaching approaches, analysis of the linguistic and discoursal structures of academic texts, methods of analysis of the academic language needs of students and analysis of the textual practices of academics. It is to be mentioned that the purpose of ESP like GEP is to engage the learner’s use of procedures for realizing schematic meaning which he /she drives from knowledge of the language system as a resource.

The emphasis in the definition of ESP has been in how ESP teaching develops procedures appropriate to learners whose main purpose is learning English for a purpose other than just learning the language system. That purpose may be educational, or may be professional, and ESP seeks its justification on how well it prepares learners to fulfill the requirements of the specific purpose. In ESP, the learning of English for students is auxiliary to some other primary academic purpose. In fact this learning is a means for achieving something else and is not an objective in itself. Thus, ESP is linked with the professional purpose of the students which have already been defined and which is the students’ interest to be met. In ESP program students are in an EFL situation studying their subjects course in their first language and don’t have the high proficiency levels in English that most students have in native or ESL situations.

In the view of above, we can claim that it is a secondary activity since it has no purpose of its own; it is used to serve the ones that is specified elsewhere. ESP developed alongside with the development of communicative approach to language teaching. The discipline imposed by needs analysis and the importance of awareness of learner’s need make a communicative approach which is based on learner and learning needs (Hutchinson & Waters, 1987). Its greatest strength is the responsiveness to
the needs of the learners. Apart from need analysis, Robinson in her first overview of ESP (1980) suggested that limited duration (intensive course of a fixed length) and adult learners are defining features of ESP course. In recent times, innovations from communicative language teaching, especially in ESP contexts, have shifted the focus away from materials that were essentially a vehicle for presenting structure to the ones which demand use of “real life” language.

2.7.3. ESP instructor’s task

Effective ESP program requires relevant materials, knowledgeable instructors and team work with subject matter professionals. ESP practitioner’s first task in any setting is to perform a need analysis; the logical starting place is a linguistic deconstruction of genuine texts produced by experts for real-world purposes. After need analysis, next stage is when the ESP teacher considers the texts that the learner has to produce and/or understand and tries to identify the text key features and devices of teaching materials that will enable learners to use the texts effectively. The task of the teacher of ESP is to relate the two kinds of knowledge (science and language) to convert usage into use of language considering the student’s existing communicative competence in his own language. ESP may be designed for specific disciplines or professions. The ESP teacher has to have in mind and exploit this specific subject knowledge for teaching methodology but in some situation, e.g. pre-study, pre-work courses where learners have not started their academic or professional activity, teaching methodology can be similar to general English course. ESP is concerned with teaching language, discourse and relevant communication skills; these are considered as ESP characteristic (Dudley-Evans & John 1998). Most writing about ESP is concerned with
aspects of teaching, materials production and text analysis rather than with the development of a particular theory of ESP. Thus, it is wise that the teacher of ESP chooses an eclectic approach, takes what is useful from each theory and trusts his/her own experience as a teacher. With the development of ESP teaching and research in the last thirty years, the ESP teachers who are in charge of instructing non-native English students, scientists and professionals involved in reading and writing the scientific texts, based their pedagogy on the principle that language is for communication. Then, a demand for the development and a good guide to approaches to linguistic analysis such as genre analysis and rhetorical approach emerged in ESP area.

2. 7. 4. Genre based syllabus in ESP

The course is successful to the extent that it provides the learners with a limited competence that they need to meet their requirement. ESP course is not for developing a restricted competence to cope with a specified set of tasks, but for developing a general competence for language use. The work in ESP has always been limited to the structure of discourse. ESP teaching and research have been developing over the last thirty years. It began with a lexico-grammatical pedagogy for science and technical subjects, to genre issues in both the 1980s and 1990s, and arrived at the doorsteps of the new rhetoric (Freadman, 1994) in the 90s. The theoretical base underlying much of the material already produced for ESP is the notion of register analysis. Because with the area of register analysis, the researchers have restricted themselves to quantitative selections and presentations of lexical and syntactic features at sentence level, Widdowson (1970), Mackay and Mountfor (1978), Swales (1990) and Bhatia (1993) point to its inadequacies and report genre as a new way
for language analysis. Within the last two decades, genre has been considered in ESP context as a tool for developing L1 and L2 instruction by a number of researchers such as Swales (1981, 1990), Hopkins & Dudley-Evans (1988), Salager Meyer (1990), Bhatia (1993) and Thompson (1994). Swales (1990) uses the concept of genre in order to pay attention to the role of contextual factors and emphasizes the role of communicative purposes through a text. Dudley-Evans (1986) argues for a theory of ESP based on text, but one that starts from the point of the view that texts in different disciplines will have different patterns of organization rather than variations on one “common core” pattern. Common core patterns are, as Dudley-Evans suggests, a convenient starting point for pedagogical purposes, but may not have much basis in actual genre analysis.

Genre analysis model has a profound influence on EAP. This is largely owing to its explicitness, completeness and capacity to investigate and explain complex relationship between text and context in educationally appropriate terms. Dudley-Evans (1994) believes that the basic philosophy of a genre approach is entirely consistent with an ESP approach. It seems that the focus on imparting certain knowledge is a part of a shortcut method of raising students’ proficiency in a relatively limited period of time to the level which is required of them by their instructors. Genre analysis considers the disciplinary environment in which academic writing takes place and which has a major influence on the nature and form of the communication. Genre has the power to force communicational intentions to achieve the purposes of ESP students. Applying the requirements of a genre, however, does not mean a complete ‘conformity’. Within the imposed compulsions there are several possibilities to choose form in order to express the same idea. Thus, it is
claimed that this is what the teacher of English for Medicine Purposes (EMP) should teach the students applying a genre-based syllabus.

Early work in ESP genre analysis placed the focus on ‘Moves’, studying how the writer structures a text or part of a text. Masuku (1996), whose work is more recently in genre analysis, has extended the analyses of the other researchers to relate them more directly to the conventions and expectations of the target discourse communities that ESP learners wish to become members of. The aim of fulfilling this study was to generate the appropriate teaching material for ESP. Studies related to ESP genres have been carried out lately focusing on different levels of analysis, such as internal ordering, lexico-grammatical patterns or terminology. The most popular practice in the genre approach was developed and popularized by Swales (1990). He defined the genre as a communicative event with a common purpose and mutually understood aims which are shared with participants of the same community. It has structure and standardized communicative constraints, and those who practice frequently and professionally in one genre will have an overt knowledge of its rhetorical features. As a result many ESP writers (Paltridge, 1997; Gosden, 1995; Mustafa 1995; Sionis 1995 & Marshall 1991) have recommended that academic writing instruction should focus on the genre: its communicative purpose, its content structure, and its language conventions. This approach was mainly practiced in teaching the research articles (RA). Recently Swales and others have turned away from a reliance on moves to consideration the working of discourse communities and to the role of genres which is played within those communities. These interests have led to an increasing overlap between ESP and New Rhetoric Schools.
ESP research and teaching are increasingly focusing on and sensitive to the learners’ background and the effects of the environment in which they use English. The ESP and genre-based teaching researches lead the course designer from the initial needs analysis to material production and lesson planning.

2.7.5. ESP program in Iran

The sources of information for need analysis are the students, the language teaching institutions and those who are concerned with the student’s specific job or study situation. Students can provide much more valuable information for teachers than an expression for their needs (Sysoyev, 1999). Therefore, a better term than need analysis can be students’ analysis so that we could make up for their deficiencies. According to Robinson (1991) there is agreement that as much as possible, the need analysis should be completed before designing and starting any course. So, one should be able to frame the objectives for the ESP course and it is necessary to design the syllabus based on these objectives. Strevens (1977) provides a picture of ESP as highly specialized instruction, designed to meet learner’s needs exactly as they will be using English. ESP is driven by the specific learning needs of the language learner. The first step for ESP, curriculum reform is research to identify the specific learner needs of the students, this help us make good decisions about our ESP programs.

The primary aim of the ESP course in Iranian universities, being an example of the EFL situations, is to enable the students to read their specialized texts in English. In these universities, English is not a language of instruction and is not used as a medium of instruction; it is taught as a subject in the university. The way English is taught as a
foreign language in our university leads to a lot of problems. The students who joined the university realize that language learning means only acquiring specific terms in their own fields of study. A review of English language teaching in Iranian universities reveals that the Iranian students are confronted by some problems; understanding English and manipulating an appropriate method in developing new information through reading are examples to be noted. Concerning this specific purpose, the development of the target reading skills seems to be the main objectives of ESP learners in our EFL learning teaching situation. Since much of learning is involved in reading texts, it is important to find ways, or at least detect efficient factors, to increase the students’ understanding of the materials in the most efficient way possible. Students may also have a problem in following the lines of argument and in relating different parts of discourse to each other. Most of ESP courses in the university follow the traditional and non-discoursal view of reading which considers the meaning to reside in the text and are involved in teaching a lot of grammar and vocabulary to the learner who has already received much knowledge of English grammar at the secondary level without ever being able to engage in an authentic communication activity even in its very elementary sense. That is why we confront that EFL and ESP program in the university are ineffective. The students find themselves disillusioned and disappointed and it also leads to wastage of a huge amount of national resources. Teaching methods are instrumental in effective teaching English; some methods produce some ill effects in English teaching in the universities. Our students seldom have a good mastery of the foreign language although they have passed some English courses before they enter the university. Thus, we are faced with the poor current English teaching situation in the universities. For overcoming this shortcoming,
some remedial steps should be undertaken and some ways should be recovered to fill this gap. In higher education, both lecturers and students should make extensive use of academic texts in English if they want to compete not only with their native English speaking counterparts but also with all those who are proficient in ESL and EFL. The studies illustrated that although students realize the importance of English competence for success in their studies and future careers and although students are strongly motivated to improve their English skills, English education in colleges and universities failed to satisfy student’s expectations and to improve their language competence.

Regarding above mentioned issues, it is needed that Iranian universities redesign their English language curriculum and search for better options and new policies at national level. As a few studies on ESP curriculum design for the specific needs of university students have been conducted in EFL situation dealing with specific applications of ESP, it is a requirement to conduct a study addressing the issue of reforming English courses at university level.

2.8. English for Medicine Students (ESM)

2.8.1. Medical discourse

Text exists in context which determines move structure and associated verbal form; what fits one context may not fit another. Texts have different contexts, structures and languages. Each text has a typical conventionalized structure. The structure of an utterance is determined by its use and the communicative context in which it occurs (Lyons, 1981). It is, in turn, involved in the related community. A typical example for a discourse community can be the community of medical doctors and medicine students. It is often convenient to refer to types of ESP by
profession, so one commonly hear terms such as medical English, English for engineering; these terms may be useful as a quick classification. Medical English may include EAP for students following a degree course in medicine where English is the medium of instruction, and also a type of EOP for practicing doctors using English to talk to patients. Among the many various language learners with different purposes, the students of medicine have been paid a great deal of attention to learn needed skills in order to profit the up to date information in medical field and also medical doctors are to achieve the common goals from which the most important may be the prevention or effective treatment of diseases in society. That is why, some attempts have been made to fulfill their communication needs in order to enable them to extract information out of their field oriented written or spoken discourse. This led to the conduction of numerous research projects and the development of the massive teaching materials based on these principles along with suggestion for language instruction to the students of medicine. The immediate and pressing needs of these study resulted in rapid development of English for Students of Medicine (ESM), as a branch of ESP. This presents a specific approach to meet the increasing and varying demands of medical students. In this approach, the task of the practitioners is not only to teach specialized medical vocabulary but also its most basic vocabulary in its historical context in order to avoid misusages which cause misinterpretation by hearers or cause rejection of the manuscript submitted for publication and also the task is to improve the ability of medicine students in academic reading.

The discourse of medicine is based in supremacy of technology and science. The degree of specialization within medicine is so high that without understanding the phenomena and process that are described, we can not understand the language that is used to describe it. In other words,
it is not the language that we do not understand but we lack the professional background (or content schemata). The doctors have participatory mechanisms; they intercommunicate with each other using specific genres which are highly specialized. In study of genres of medicine, it is revealed that they are different because each serves a unique recognizable purpose, each has a typical conventionalized structure and each has a special language characterizing that genre. Faced with some short texts on research, we realize that they are raised in different contexts and they have different purpose, structures and language; different purpose as each serves a unique recognizable purpose; different structure as each has a typical conventionalized structure; different language as each has a special language characterizing that genre. To grasp the intention of the medical authors in one text, it is needed to pay attention to the medical genre which dominates in that text. This fact can be explained by the communicative functions and the corresponding rhetorical moves in each sub genre. To study about genres is an important for a native speaker as for a non native. Even the native speaker should be familiar with the specific vocabulary, nomenclature, terminology used by the given discourse community otherwise s/he will be regarded as a ‘lay person’ by the member of the discourse community. In addition, being unaware of the communicative purpose, forms and grammatical structures mainly applied in the genre means that the communicational intention will have not achieved its purpose.

Some prevalent genres are presented in medical discourse, examples are as: case report, conference lecture, poster, research article (short communications, original research, review papers, research proposals, etc.), research paper abstract, conference abstract clinical trials (randomized, no-randomized), the doctor-patient interview and the
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textbook. In some literature, medical text types are categorized in 3 fundamental types: research papers/case reports and review articles. And research texts are recognized in 4 basic research types: clinical, basic epidemiological, and operative. The medical research articles found in the periodicals are a means to present the findings in one subject to the others. Physicians perceive periodicals to be the most valuable and available source of their ongoing education and for disseminating new knowledge (Harris, 1966; Currie, 1975 & 1976). In the present-day medicine community, research articles are frequently used as a major indicator of a researcher’s academic standing and it is only natural that a great deal of a reader’s time and effort is spent on the writing of research articles. This genre used by medical researchers for communicating new ideas can be viewed as either the end product of a researcher’s effort to contribute to science or a certain stage in a life-long process of doing so. It should not be surprising therefore, that this genre of writing has been subjected to extensive rhetoric and linguistic studied in the past twenty years. In different sections of research article, the medical discourse reflects the authors’ intention. Authors make use of different textual strategies in writing of the research article in order to create the impression of reality.

2.8.2. Research articles: A genre of academic written text

According to the communicative purpose, context, positioning and form, the written genres can be recognized like editorials, journals articles, newsletters, referral or discharges letters, case report etc. In the academic written texts, there are three major written genres: editorials, clinical or case reports and research articles RA. The latter of these genres is identified as ‘truly scientific’ (Salager Meyer, 1989). It is claimed that it is
truly scientific-indicator and finalized product of the researcher’s study, effort, time and findings. It is a mean to present the research’s process and finding to others and can have a communicative role of new information and idea. Research articles are considered as sites of disciplinary engagements, where writers interact with specialist audiences rather than with general readers. Therefore, this kind of genre occupies a pivotal position in the network of scientific communication and in the negotiation of the community members. Swales’ definition of the research paper reflects clearly the nature of this genre:

Research articles are rarely simple narratives of investigation. Instead they are complexly distances reconstructions of research activities, at least part of this reconstructive process deriving from a need to anticipate and discountenance negative reactions to the knowledge claims being advanced (1990, p. 175)

In research articles, selection of linguistic forms is determined by what the researcher wants to say and also how it should be said according to the style of the discipline. In the last few years, the editors of some leading journals in different disciplines have urged the researcher to structure their research article. The researchers are to send for publication in such a way that the sections and content be consistently described in a standardized manner. That’s why the general guidelines for research papers have been suggested. The editors have decided to make uniform the technical requirements (instruction) to authors on how to prepare scientific papers for manuscripts to be submitted to their journals.

The works of the sociologists such as Knorr-Cetina, (1981) and Latour and Woolgar (1979) have proved that scientific texts are not the objective report of the experiment and its findings, but the result of a
process of social construction. The authors resort to rhetoric to persuade the audience to assent to the claim put forward in the paper. Research articles, being ‘an established and regularized genre’ (Bazerman 1988, p. 23) has developed separates sections, according to their specific purposes and rhetorical function; they can be generally named as: introduction, methodology, result and discussion. Each of these sections has its own different goals: in the introduction stage, the research topic is announced; the method and the background of the topic are presented in the review of literature; in the method stage, the steps followed in the experimental phase for giving information to the reader about the appropriateness of the method are stated; the data in relation to the research problem is described in the result stage (Publication Manual of the American Psychological Association, 1994). According to the Systemic Functional Linguistics (SFL), linguists like Halliday & Martin, 1993; Eggins, 1994) suggest that each stage of a genre exhibits its own structure and clusters of predictable lexico-grammatical patterns. In recent years there has been a growing interest in the study of academic writing. One line of research has concentrated on the study of grammatical and stylistic aspects of written academic discourse. Another line has focused on the structural organizational of academic texts. On the basis of surveys of the research articles, Swales’s (1990) presented his CARS model as a general model but subsequent studies indicated that the structure of research articles introductions may vary in significant ways across disciplines. For instance, Holmes (1997) in the study about the sociology and political research article states that the introduction stage of these articles indicates deviation of CARS model.
2.8.3. Some research on medical text

In the view of above, some steps have been undertaken to meet the communication needs of medicine professionals in order to strengthen them to extract information out of their field oriented written or spoken discourse. This resulted in conducting numerous research projects to explore the syntactic and discoursal features of medical discourse. The study of Marco (2000) describes the patterns of occurrence of the most frequent non-technical adjectives found in medical papers and examines the discourse function of these patterns. The result of this study shows that there is a set of adjectives which occurs with high frequency across medical papers. These adjectives are part of phraseological pattern. They tend to co-occur with specific words and the typical meaning of these adjectives in medical papers can be determined by looking at the words which co-occur with them. This co-occurrence with specific nouns is motivated by the rhetorical aims of the genre.

For over a decade, some linguists (Atkinson 1992, Salager Meyer 1990, 1992, 1994) have reported on a variety of features in medical English research articles. In this line, Russell-Pinson (2006, 2002) investigated three distinctive medical English genres in order to improve the understanding of the frequency and function of the linguistic and extratextual features used in these writings. The following dependent variables were examined in the corpus: linguistic features such as nominals, personal pronouns, verb tense/aspect/voice/mood, epistemic markers, relative clauses, sentences type, and length and extratextual features such as visual information, author information reference lists. The results obtained from the analysis of the data in this study indicate that the frequencies of certain linguistic and extratextual features vary according to four communicative functions expressed in the medical English genres.
Furthermore, the same communicative function may be conveyed by different linguistic and extratextual features characteristic to each genre. In another research carried out by Vazquez (2005) about rhetorical structures of biomedical sub-genres in English and Spanish, two secondary goals were pursued: 1) to illustrate the effectiveness of a corpus-based research study in which a genre-based analytical approach was used to present the rhetorical structure of texts; and 2) to prove the usefulness of this method for teacher, students and even translators. The analysis of textual structure indicates that these biomedical texts have the same field, but they don’t share the same communicative purpose. The structures of all the sub-genres analyzed are heterogeneous and flexible. In the comparison of the texts in different languages but belonging to the same sub-genre, it is revealed that there are few differences in their rhetorical organization. Nevertheless, in comparing texts in the same language but belonging to different sub-genre greater differences are found. To conclude, the schemata which are obtained on the basis of an analysis of the contents of each sub-genre show that each sub-genre has its own rhetorical structure. Following Paltridge’s (1997) approach, based on simple keys to symbolize the main parts of discourse in the environmental area, a similar analysis was developed in order to work with the rhetorical structure of the texts of another area, i.e. Medicine. After studying the informational structure of the texts and analyzing the results, it was found striking differences when comparing the discourse organization in texts of various sub-genres. This shows that each genre has unique linguistic patterns which are not shared with the rest.

Mendez-Gendon and Lopez- Arroyo (2003) in a study offered a description of rhetorical and phraseological patterns observed in medical research papers and abstracts using a semantic and functional approach.
Their methodology is descriptively performed on a comparable corpus composed of research papers and abstracts in the field of diagnostic imaging and published in esteemed journals. They determined the composition strategies by means of the description of the authors’ favorite structures found in the corpus. After these favorite structures have been obtained for every genre, they proceeded with semantic analysis so as to establish their similarities and differences. In other work, Salager Meyer (1983) analyzed the core lexis of medicine, that is, the items (verbs, nouns, adjectives and function words) with a homogenous distribution across medical texts, and found that the adjectives occurring in this type of discourse describe illness or injuries, as well as the quality and timing of treatment.