The Effectiveness of Brainstorming on Teaching ESP Reading at University Level

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Abstract

Many teaching techniques have been used to improve students' reading comprehension level in advanced ESP courses. However, these techniques focus only on the product and process of reading comprehension. Therefore, these techniques are not adequate enough since they disregard certain teaching factors that stimulate students to become efficient readers of ESP texts. In addition, most Iraqi advanced ESP courses rely heavily on the conventional techniques of reading instruction, which simply involve reading the text, explaining its meaning, and answering its questions.

As a result, students in ESP courses need novel techniques that enable them to have full comprehension of what they have already read. One of such techniques is believed to be the brainstorming adopted here as new orientation and most effective teaching technique which allows ESP students to freely express themselves and generate indefinite number of ideas on a topic relating to a given text prior to the reading activity in class.

The Problem of the Study

The teaching of reading is a real problem everywhere in the world, so teachers have adopted variety of techniques since they look at the nature of the problem differently (Wardaugh, 1968: 235). Rivers (1981 : 265) and Brown and Race (1997: 102) assert that " the teacher must continually provide students with opportunities to reading texts in an interchange of communication."

Stemming from the idea that students in advanced ESP courses are often more knowledgeable than their ESP teacher concerning the area of specialization being read or discussed (Abbott, 1978: 137), many teaching techniques have been used to improve students' comprehension level in such courses. However, these techniques focus only on the product and process of reading comprehension(Al -Marsumi, 1994:137). Therefore, these techniques are not adequate enough since they disregard certain teaching factors that stimulate students to become efficient readers of ESP texts (Ellis and Barkhuizen,2005: 281). In addition, most of Iraqi advanced ESP courses rely heavily on the conventional techniques of reading instruction which simply involve: reading the texts, explaining its meaning, and answering its questions.

Students in ESP courses need novel techniques that enable them to have full comprehension of what they have already read. One of such techniques is believed to be the brainstorming(henceforth BS) adopted here as a new orientation to reading instruction. This technique can better improve students' level of reading comprehension by allowing them to freely express themselves on a topic relating to a given text prior to the reading activity in class(Kroll , 2001:224). Consequently, BS can be adopted as the most effective teaching technique and included in the teaching techniques of ESP reading, since to the best knowledge of the researcher, no

previous study has correlated the effectiveness of BS on the achievement of Iraqi university students in ESP reading.

Aim of the Study

The study aims at determining the effectiveness of using BS as a technique for teaching reading comprehension in advanced ESP courses.

Hypothesis of the Study

It is hypothesized that the BS technique has positive effect on teaching ESP reading to university students.

Limits of the Study

This study is limited to using BS in teaching ESP reading to first–year students of the college of political sciences, university of Baghdad. It is applied during the first semester of the academic year 2008-2009.

Value of the Study

This study may be of value in:

1. Providing an evidence on the application of BS as a teaching technique to the achievement of students in ESP reading.

2. Assisting non-departmental branches in using novelty techniques when teaching ESP reading.

3. Making ESP students recognize the requirements of the BS session that provides them with the opportunities of producing thoughts without any form of interruption.

4.`Enabling ESP textbook designers to select appropriate topics in which ESP teachers and students can generate indefinite number of ideas, among which are the creative ones.

What is ESP?

The teaching of English for specific purposes has grown to become one of the most prominent areas of teaching EFL. ESP has been defined to meet the specific needs of learners in other specialties: Arabic, medicine, engineering, political sciences, etc .It makes use of methodology and activities of the discipline it serves. Also, it centers on the language appropriate to these activities(Yeserskaya and Rostovtseva, 2003: 2).

To Hutchinson and Water (1987:7), ESP is an approach to language teaching in which the decision as to content and methods is based on learners' reasons for learning. Hence, ESP is a learner-centered approach to teaching EFL, i.e. it meets the needs of adult learners who need to learn a foreign language for use in their specific needs. It concentrates more on language in context than on teaching grammar and language structure. As a result, English is not taught as a subject separated from students' real world. It is integrated into a subject matter area important to the learners (Hedge, 2000:46).

Finally, ESP comes to existence owing to its relation to psychology of learning. Rather than simple focusing upon the method of language delivery, more attention is given to the ways learners acquire language and differences in the ways language is acquired. Learners are seen to employ different strategies, use different skills, enter with different learning schemata, and be motivated by different needs and interests(Richards, 2001: 28-36).

However, an ESP definition needs to distinguish between four absolute and two variable characteristics:

-- Absolute Characteristics.ESP consists of language teaching which is:

1. designed to meet the specified needs of the learner,

2. related to content(i.e. in its themes and topics) to particular disciplines, occupations or activities,

3. centered on the language appropriate to these activities in syntax, lexis, discourse, semantics and the analysis of this discourse, and

4. in contrast to general English.

-- Variable Characteristics. ESP may be but not necessarily:

1. restricted to the language skills to be learned(e.g. reading only)

2. not taught according to any preordained methodology.

Why ESP?

To Wright (1992:5), there are three main benefits from ESP courses:

1. Learning Speed. ESP results in faster acquisition of required linguistic items. This is because it follows the pattern of the native speakers' acquisition of language for specific purposes, in which speakers learn what they need when they need it in authentic , content-based contexts. ESP not only follows this pattern, but also improves upon it by providing an opportunity to learn in an accelerated, intensive context.

2. Learning Efficiency. On an ESP course, the trainees make maximal use of their learning resources, all of which are brought to bear on acquiring specific linguistic items and skills.

3. Learning Effectiveness. On completion of an ESP course, the trainees are ready to use language appropriately and correctly in job- related tasks, which have been identified prior to the course by means of needs analysis. Accordingly, English becomes usable immediately in the employment of context. In

addition, the trainees are prepared for further job-related training in English. Such preparation will result in greater academic performance since no time is wasted in acquiring the necessary language.

Selection of ESP Reading Texts

The selection of ESP reading texts can rely on the following criteria:

1. Most terms incorporated are the specialized terms that are vital to the comprehension of the ESP texts. This means that such texts involve various word formations that contribute a lot to the mastery of vocabulary in the specialty concerned.

2. The texts relate to students' background knowledge which can create more ideas and some novelty ones. In this regard, Wood (1982: 171) confirms that if students have a difficult subject in the specialization concerned, they will find themselves tangled in complicated terminology and difficult concepts that they cannot understand.

3. The texts should be devoid of any form of complexity and difficulty with meaning, vocabulary, structures, ideas, style, etc. As to the ideas adopted, they should be simple, clear, interesting and stimulating. Otherwise, students' reluctance to provide ideas may arise occasionally(Nunan, 1999:154-155).

4. While simple statement patterns dominate most of the texts, other sentence structures can be adopted. If other complicated structures are used, students may face difficulties in self-expression and comprehension of the given texts.

5. Concerning the kind of ESP reading texts, expository and argumentative ones are the most desirable since they can stimulate students to adopt diversion of thoughts that make them create some novelty ones.

6. The balance which has to be maintained between the linguistic and the conceptual level of students is perhaps more evident in ESP programs than in general English (Kennedy and Bolitho, 1984: 14)and (Richards and Renandya,2002:109)

In addition to all the criteria above, careful instruction in the significance and value of using English as a means of improving knowledge, skills and attitudes related to a particular specialization should be provided for the students since the English language provides ESP students with the most up-to-date scientific and advanced knowledge concerning their specialty. Any deficiency in such convincement may adversely influence their performance in the foreign language.

Brainstorming as a Teaching Technique

To Stein(1975: 269), BS is a cognitive technique to creativity based on the theory of associationism,i.e. through stimulation, represented by a problem, for example, one can create many responses as alternative answers to that problem." Furthermore, Pratt(1980:455) looks at BS as a process of generating ideas and solutions throughout free-flowing creative thoughts and spontaneous noncritical expression of ideas. To Fontana (1981 :145),BS is a technique for coming up with ideas without regard to their evaluation. This does not mean that evaluation is disregarded but rather it is deferred till the end of the BS session. BS is dealt with in a group and relaxed atmosphere in which people feel free to speak what comes into their minds without self- censorship or fear of criticism. Last, To Ellis (2003:266-271), BS is " an exciting group participation designed to develop multiple answers to a single question ."

From these definitions, one can arrive at the following points:

1. BS depends on the generation of ideas, views, suggestions, solutions, etc.

2. Free expression is essential to BS.

3. No interruption, no criticism, and no evaluation arise during the BS session.

4. BS develops the spirit of creativity, i.e. the quantity of ideas leads to novelty ones.

5.Thoughts flow owing to existence of a problem or topic for which a group of people should cooperatively find a solution.

In this study, BS is the teaching technique that allows ESP students to freely express themselves on a topic of a reading text prior to the reading activity in class. This will give them the freedom of self-expression, and at the same time eliminates the authoritative system inside the classroom, and hence improve their level of comprehension in the ESP reading texts.

Brainstorming Requirements

It is the task of the BS teacher to have enough experience in using the various requirements of the BS session in order to motivate the ESP students to express themselves in the foreign language. These requirements are:

--Permissive Atmosphere. The teacher induces the students to generate free associations of ideas without fear of failure, criticism, evaluation, looking funny, etc.(Clouse,2006:38-39)

--Deferment of Judgment. Any judgment or evaluation of thoughts is deferred till the end of the BS session lest it should interrupt or obstruct students' flow of ideas. At any rate, BS proves to be a very useful device since the difficulty with some specialized terms and expressions requires the ESP teacher to let students free while expressing themselves in the foreign language (Senior,2006 : 104).

--Idea Generation. Dozens of suggestions, facts, questions, solutions etc. are provided in each BS session.

--Self-Expression. Whenever ESP students feel free, safe and stimulated, their ideas come fluently.

--Interaction. Effective interaction in class can be secured since the teacher helps the students to attend to the text and cooperatively make their own interpretations, not to impose his/her own (Cook,2008:157).

--Self-confidence. Opportunities of success such as being encouraging rather than censuring constitute the proper means of building confidence in ESP students for better participation and comprehension in the foreign language(Nation and Macalister, 2010:62-64)).

--Attention. Students' attention is attracted through variety of activities practiced during the BS session.

--Peer Teaching. Students teach each other in groups, so they learn from each other's specialized knowledge and skills.

--Creativity. Some novelty ideas are made by the students as a result of the free production of ideas.

--Problem Solving. Since students are allowed to give as many solutions as possible to a given problem, some creative solutions will arise occasionally (Briggs, 2006:231-240).

--Image Building. When students see their ideas, their image increases accordingly.

--Repetition. Shy and weak students have the chance to feel success through repetition of some terms and ideas in the foreign language.

--Questioning. Making various question structures is actively practiced in the BS session.

Background Knowledge. Students' background knowledge that gleans through verbal discussions assists a lot in the generation of various responses.

--Integration of Foreign Language Skills. All members of the BS session pre-read the given text, take or make the written notes related to it, listen to each other's ideas and verbally respond to them.

The skilled Brainstormer in ESP

The BS teacher of ESP reading always gives students high dose of motivation when expressing themselves on a given text. He/ She has the ability to stimulate them to produce as many thoughts as possible. In this regard, Hadley(2003:200) recommends that: "Students should be given enough opportunity to become acquainted with the concepts and potentialities of modern science and technology in the foreign language . Any deficiency in this will impair the teacher' s normal efficiency . Accordingly, the BS teacher should have good mastery over the terms, expressions and concepts used in a certain specialty; otherwise, the required interaction that leads to an effective BS session may not be achieved. However, the skilled brainstormer does not need to learn the specialist subject knowledge. Instead, he / she should have the capacity to:

--master all the requirements of the BS session.

--provide the positive and permissive environment that encourages idea generation, discussion and invention(Ellis,2003: 31-32).

--provide students with novelty ideas and situations that motivate them to generate novelty ones.

--reflect satisfactory command of scientific and technological English.

--initiate activities which instill in students interest, comment, questioning , etc.

--appreciate the scientific point of view and the role of science and technology in modern society.

--master the linguistic, technical and psychological aspects of ESP teaching and learning.

Procedures and Methodology

The following procedural measures are adopted to carry out the aim and the hypothesis of the study :

1. Design of the Experiment

In this study, the effectiveness of the independent variable, i.e. BS as a teaching technique, on the dependent variable, i.e. ESP reading at university level will be found out.

2. Population and Sample

The population of the study are 1st- year students of the college of political sciences, university of Baghdad, during the academic year 2008-2009. Their total number is (173) of both sexes grouped into (4) sections. (19) of them who are repeating the year for second time are excluded from the sample. The rest totaling (154) students represent the actual population. Also, (30) of them have been drawn randomly for the purpose of the pilot study.

(60) students are selected randomly from the population to act as both Experimental and control groups respectively, distributed into two sections. Steps are then taken to equalize them according to following variables: their achievement scores during the 1st year, college level, the test value of the scores in the 1st pre-test of ESP reading, their age, and the educational level of their parents. (See Tables 1,2,3 and 4 below((Lueplow,1975:91).

Variables Groups	No. of Subjects	X mean	SD	DF	t-Value	
					Cal.	Dis.
Exp.	30	84.9	6.95	58	0.538	2.000
Con.	30	84.2	6.09			

Table (1) The mean, Standard Deviation and t-Value of the Subjects' Level of Achievement in the Previous Year.
SD: Standard Deviation DF: Degree of Freedom Exp: Experimental Con: Control

Variables Groups	No. of Subjects	X mean	SD	DF
Exp.	30	16.9	0.251	58
Con.	30	16.9	0.305	58

Table (2) The mean, Standard Deviation and t-value of the Subjects' Age

Stages of Education	Exp	Con	Total	DF	Chi-Square Value	
					Calculated	Distribution
Primary	0	0	0	3	1.367	7.82
Intermediate	0	0	0			
Secondary	1	1	2			
Institute	2	1	3			
University	14	16	30			
Higher Studies	9	10	19			
Total	26	28	54			

Table (3) Frequency and Chi-Square Value for the Level of Father's Education of the Subjects of Both Groups.

Stages of Education	Exp	Con	Total	DF	Chi-Square Value	
					Calculated	Distribution
Primary	0	0	0			
Intermediate	2	2	4			

Secondary	3	3	6	3	1.367	7.82
Institute	2	4	6			
University	17	13	30			
Higher Studies	5	6	11			
Total	29	28	57			

Table (4) Frequency and Chi-Square Value for the Level of Mother's Education of the Subjects of Both Groups.

However, the control group of (30) students is chosen only to verify the ineffectiveness of the conventional techniques of teaching ESP reading, which involve: reading the text, explaining its vocabulary, and answering its questions.

3. Duration of Instruction

The instruction period for the two groups lasted for (8) weeks, i.e. for about (16) class periods with a rate of one unit distributed over (4) class periods. The control group was taught by the researcher according to conventional techniques, whereas the experimental one was taught by the researcher according to the BS technique. The length of the instruction period depends on the students' abilities to generate ideas in ESP reading. At any rate, the duration of each BS session lasted (20-25) minutes, during which various pre-reading activities are exploited. The remaining time is allotted to give some evaluation in addition to explanation of some questions related to the given text (Dirkes, 1981:71).

4. Techniques of Instruction

During the first ESP reading lecture, the subjects of the experimental group are exposed to a detailed and clear explanation of the major requirements of the BS session . The following procedures are used to storm the brains of the subjects of the experimental group:

1.The subjects are divided into small groups, each of (5) students. All of them are to work cooperatively and effectively for producing more ideas about a given text.

2. Pre-reading Activities. The subjects of the experimental group are provided with a number of pre-reading activities for creating a positive attitude and high motivation towards the text. Thus, Doff (1988:172) stipulates that students should be given some reasons for reading as well as some information that helps them to communicate and comprehend. The following pre-reading activities are adopted to encourage the students to freely generate ideas about the ESP reading text:

--A question-and-answer technique

--Eliciting some ideas by the teacher or peer students.

--Stating the beginning of ideas and asking for completion or giving related details.

--Drawing a diagram with some deleted thoughts related to the topic of a given text.

--Making a comparison between two or more thoughts cited or related to the text.

--Multiple-Choice Items

--Cloze Procedure Technique in which the teacher gives a text with blanks and asks students to fill in these blanks.

--Ideas suggested by the teacher or the students.

--Suggesting wrong ideas and asking for arguing against them.

3. While Reading Activities. After the pre-reading activities are carried out during the BS session, the ESP teacher can read the text aloud and explain some meanings and structures.

4.Post-Reading Activities. Such activities necessitate the teacher to evaluate students' participation, thoughts, structures, etc.

The control group are exposed to the same texts adopted for the experimental group. No brainstorming is given to this group. Instead, these conventional devices are used for teaching them ESP reading texts. Thus, the teacher:

1. reads the text aloud

2.reads or asks students to read.

3.explains some ideas and structures of the text.

4.answers the questions and the exercises that follow the text under investigation.

5. Post-Test Design

At the end of the instruction period, both the experimental and the control groups are given a post-test on the particular texts taught during the instruction period. The test of this study is of (4) sets: multiple-choice items, true-false items, short-answer question items, and completion items. Each set is of (10) items based on the ESP reading texts. The distribution of scores on the items is as follows: the item that elicits inferential information receives (3) scores, whereas the item that requires only literal information has (2) scores. The total score of the whole test items is (100).

6. Test Validity

To achieve the face and content validity of the post test, the test items were given to a jury of specialists in English Language Teaching and Linguistics to judge their appropriateness to the ESP students' level as well as to the application of the BS technique in the ESP reading texts(Heaton, 1975: 153-155).

7. Test Reliability

By using the Split halves method, the correlation between the scores on the odd-number items and those on the even-numbered items is ascertained. The more fluctuation shows lower reliability, and the less fluctuation shows higher reliability.. By using Pearson's formula, the computed reliability coefficient of the test was (0.863). The reliability coefficient of any test will be acceptable if it is less than (0.50),therefore, the figure (0.863) is considered a high stable coefficient and indicates that the test as a whole is reliable (Madsen, 1983: 178).

8. The Pilot Study

After the establishment of the validity of the test, a pilot version is administered to (30) students taken from the population. Accordingly, the clarity, suitability, discriminating power, tempting power of distracters, reliability, and average time needed to answer the test items are determined (Abbott and Wingard, 1981:138).

9. Item Analysis

On the basis of the results of the pilot study, the final version of the test has been prepared in full. This version secures the essential features of a good test: content and face validity, suitability of the difficulty level of items(0.26-0.75), satisfactory discriminating power of items (0.32-0.73) , sufficient tempting power of distracters and a satisfactory coefficient of reliability (according to Pearson's formula 0.863)

Pre-Test				Post Test			
No.	Scores	No.	Scores	No.	Scores	No.	Scores
1	28	16	21	1	27	16	22
2	36	17	14	2	37	17	19
3	22	18	21	3	23	18	26
4	31	19	20	4	29	19	24
5	29	20	26	5	28	20	27
6	21	21	26	6	22	21	28

7	25	22	25	7	26	22	28
8	29	23	14	8	31	23	18
9	18	24	29	9	18	24	28
10	15	25	31	10	16	25	32
11	24	26	34	11	23	26	33
12	26	27	31	12	23	27	31
13	22	28	33	13	23	28	35
14	23	29	29	14	23	29	32
15	24	30	31	15	27	30	31

Table (5) Subjects' Scores in the Pre-test and Post Test of the Control Group

Pre-Test				Post Test			
No.	Scores	No.	Scores	No.	Scores	No.	Scores
1	23	16	25	1	34	16	34
2	22	17	26	2	32	17	37
3	24	18	28	3	35	18	36
4	22	19	26	4	33	19	38
5	16	20	30	5	29	20	40
6	20	21	30	6	30	21	38
7	21	22	32	7	32	22	40
8	26	23	34	8	28	23	38
9	21	24	31	9	29	24	38
10	26	25	26	10	36	25	40
11	23	26	24	11	35	26	38
12	26	27	25	12	40	27	36
13	13	28	25	13	31	28	36
14	19	29	22	14	27	29	40
15	20	30	31	15	32	30	40

Table (6) Subjects' Scores in the Pre-test and Post Test of the Experimental Group

Analysis and Discussion of Results

Relevant to the aim and hypothesis of the study, the following results are drawn from the analysis of data.

1. Effectiveness of BS in ESP reading

The aim of the study is to prove with empirical evidence which techniques are more effective for teaching ESP reading, the BS or the conventional ones . Accordingly, the achievement scores of the subjects of the experimental and control groups in the pre-test and post test of ESP reading are compared. The results show that the performance of the subjects of the experimental group outweighs considerably that of the control group. This is so since the mean score obtained by the experimental group is (35.06) with a standard deviation of ( ), whereas the mean score of the control is (24.33) with a standard deviation of ( ).

The t-value is found to be (10.198) which indicates that there is a significant difference at (0.05) level of significance and the degree of freedom is (58) between the two groups. This indicates that the experimental group is better than the control group, so the hypothesis of the study is validated. (See Table 7 below)

Variables / Group	No. of Subjects	X Mean	SD	DF	T – Value
E	30	35 . 6	3 . 95	58	Cal.
					Tab.
C	30	24 . 33	5 . 18	58	10.189
					2.0

Table(7) Mean, SD and T-Value of the Post Test Scores of both groups

2. Comparison of the Pre-test and Post Test Scores of the Control Group

The mean scores of the control group in the pre-test is found to be (25.31), whereas in the post test is found to be (24.33).So, to determine if there is a significant difference between the scores of the control group in the pre- and post tests, the t-formula is used. The calculated t-value is found to be (0.940) at the level of significance of (0.05). This indicates

that there is a slight difference between them.(See Table 8 below).

Variables Test	No. of Subjects	X Mean	SD	DF	T – Value
Pre – Test	30	25 . 31	5.10	58	Cal.
Post - Test	30	24.33	5.18		Tab. 0 . 940 2.000

Table(8) Mean, SD and T-Value of Pre-test and Post Test Scores of the Control Group

3. Comparison in the Pre- and Post Test Scores of the Experimental Group

The t-formula is also used to find out whether there is a significant difference between the mean scores of the pre-test which is found to be (24.10) and mean scores of the post test which is found to be(935.06) for the experimental group. The t-value is found to be (12.744) at level of significance of (0.05), which indicates that there is a significant difference between the two test s scores. This means that the experimental group is much better in the pre-test than in the pre-test. This is due to the teaching technique, i.e. brainstorming, used with the experimental group.

The statistical analysis of the results indicates that the mean value of the experimental group is found to be (35.06) and it is higher than the mean value of the control group in the post test, which is found to be (24.33) (See Table 9 below). This means that the achievement of the students of the experimental group is significantly higher than that of the control group on the total scores of the post test. This means that BS which is used in teaching ESP reading to the experimental group is more useful than the conventional techniques.

Variables / Test	No. of Subjects	X Mean	SD	DF	T – Value
Pre – Test	30	24 . 33	5.36	38	Cal.
Post - Test	30	35.06	3.95		12.744
					Tab. 2.000

Table(9) Mean, SD and T-Value of Pre-Test and Post Test Scores of the Experimental Group

Conclusions

In the light of the findings of the study, we have observed that brainstorming is an effective technique of ESP reading. Such technique provides ESP students with opportunities that help them generate various ideas in the foreign language. These opportunities are: permissive atmosphere, deferment of judgment, idea generation, self-expression, interaction, self confidence, attention, problem solving, and image building.

Also, this study has illustrated the fact that the conventional techniques of ESP reading have not succeeded yet in making students of specialties other than English read and have better comprehension of ESP reading texts. Accordingly, ESP students necessarily require BS as the most preferable teaching technique that provides them with effective learning opportunities such as the stimulating and permissive atmosphere. Such atmosphere lets them read, discuss and better comprehend the various sub-skills in ESP reading before the reading activity starts in class. Moreover, the ESP teacher, as a skilled brainstormer, should have essential knowledge and skill that motivate students to generate various ideas related to a given text. Then, while students' novelty thoughts are desirable, familiar vocabulary and structures in the foreign

language guarantee students' effective participation and comprehension since any difficulty in this regard may partially or fully block students' generation of ideas.

Furthermore, ESP students find difficulties in using English for expressing themselves on the ideas related to the texts of their specialization. Such difficulties can be attributed to the following reasons:

-- Students are demotivated towards EFL owing to past failure

-- The standards of English in the relatively large classes of specializations other than English are very variable.

-- There is a lack of time allotted for ESP on the time table.

-- ESP students care more about their specialty than EFL. They have less satisfaction with ESP.

--English as a non-departmental topic is dealt with as part of other subjects, i.e. ESP in not taught as an independent topic in the syllabus.

-- ESP is only taught whenever there is a necessity to refer to some specialized vocabulary, idioms or expressions in the foreign language.

-- Most ESP students lack the ability of self-expression in English owing to their lack of competence and motivation resulting from absence of enough encouragement concerning using the foreign language.

-- Most teachers teaching ESP are not professional teachers of English, i.e. they are related to specialties other than English.

Pedagogical Implications

A number of pedagogical implications may be drawn from the literature investigated and as follows:

1. A lot of attention should be paid to ESP reading program in terms of number of hours of instruction, i.e. (3-4) class periods a week.

2. Non-authoritarian teachers are highly required to carry out the brainstorming technique. When negative or passive atmosphere dominates the classroom, it is the role of the BS teacher to maintain students' attention and interaction.

3. As to students full preparation of each text before participating in the BS session is necessary. Also, novelty ideas given by some students are greatly enhanced.

4. The ESP reading texts should be interesting and within students 'goals, background knowledge and level of comprehension in the foreign language.

الخلاصة

لقد استخدمت العديد من أساليب التعليم لتطوير مستوى الاستيعاب القرائي في المقررات الدراسية المتقدمة في الانكليزية للأغراض الخاصة. إلا أن هذه الأساليب تركز فقط على نتاج وعملية الاستيعاب القرائي. لذا فهذه الأساليب غير دقيقة لأنها تتجاهل عوامل تعليمية معينة التي تحفز الطلبة كي يصبحوا قراء أكفاء لنصوص الانكليزية للأغراض الخاصة. أضف إلى ذلك فأن اغلب المقررات المتقدمة في الانكليزية للأغراض الخاصة تعتمد بشدة على الأساليب التقليدية لتدريس القراءة والتي تتضمن فقط قراءة النص وشرح معناه والإجابة على أسئلته. نتيجة لذلك يحتاج الطلبة في مقررات الانكليزية للأغراض الخاصة إلى أساليب مبتكرة تمكنهم من الاستيعاب الكامل لما يقرؤونه مسبقا. وأن إحدى هذه الأساليب التي تم تبنيها هنا في هذه الدراسة هو العصف الذهني على أساس توجه جديد وأكثر أساليب التعليم فاعلية والتي تساعد طلبة الانكليزية للأغراض الخاصة في التعبير عن أنفسهم بطلاقة وتكوين عدد غير محدد من الأفكار حول موضوع يتعلق بنص معين قبل البدء بفعالية القراءة داخل الصف.

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