



CBI AS AN ALTERNATIVE APPROACH FOR TEACHING ENGLISH

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Abstract: The present study aims at investigating the impact of content based instruction on improving learners' achievement in English language. The population of the study comprises students from the Department of Biology/ College of Pure Sciences/ University of Mosul. The study was designated according to the experimental design of one group, pre-posttest. In this work, (60) male and female participants of second-year students in the Department were taught the scientific supplementary syllabus in addition to the prescribed text book (The New Headway Plus). A pre-test was conducted before teaching the supplementary syllabus. After implementing the suggested supplementary syllabus, a post-test was administered to investigate the students' progress, if any, and the effectiveness of the given syllabus. The result revealed that the students' achievement was improved. Hence, CBI is an effective approach to teach English for non-departmental students.

Keywords: CBI, achievement, teaching English

Statement of the problem:

Traditional language teaching pays more attention to form-based teaching methodologies such as Grammar Translation and Presentation-Practice-Production (PPP). Since 1960s, quite a few new language teaching methods emerged from America and Canada, for instance, Communicative Language Teaching (CLT), Task-based Language Teaching (TBLT) and Content-based Instruction (CBI), all of which are meaning-formed approaches. However, too much emphasis on drills and language repetitions may make language learners lose motivation. In this context, the emergence of CBI which combines content teaching with language skill teaching seems to address the problem.

During long period of time, students of English language in Iraq enhance their English skills mainly by learning relevant skill-oriented courses, like listening, reading, speaking, writing and translating. Nevertheless, too much emphasis on skill training may lead to students' low communicative competence and poor critical thinking. In addition, it may have little influence on their intercultural communication and expansion of humanistic knowledge. This research focuses on the influence of EFL college professional skills under content-based courses, namely the impact on students' learning, and also, feedback is collected on how students perceive language learning under CBI courses, whether the courses are beneficial to their English learning and whether there is anything that needs to be improved.

Aim of the Study

The current study investigates the impact of CBI on non-departmental students' learning of English language; enhancing their comprehension, acquiring new concepts, and developing their achievement.

Hypothesis

In light of the aim of the study, the researcher hypothesizes the following:

- there is no significant statistical difference between the mean score of students' achievement in the pre- and posttest in English language.

Scope of the Study

The present study is limited to second-year students in the Department of Biology/ College of Education for Pure Sciences/ University of Mosul who studied English language for the academic year 2023-2024.

Literature Review

- Overview

Content-Based Instruction (CBI) or Content Based Language Teaching (CBLT) is a communicative approach to second language teaching in which teaching program is organized, around content rather than a linguistic syllabus.

Saint Augustine was an early proponent of CBI which emerged in 1980s. It draws on the principles of communicative language teaching. Classroom should focus on real communication about the subject matter from outside the domain of language. The subject matter was not grammar, function or some other language -based unit of organization but content. Krankhe (1987) mentions, "It is the teaching of content or information in the language being learned with little or no direct or explicit effort to teach the language itself separately from the content being taught" (as cited in Richards and Rodgers, 2009, p.204). According to Larsen–Freeman (2009, p.137), "The special contribution of content -based instruction is that it integrates the learning of language with the learning of some other content with academic subject matter." CBI is partially related to the task -based and participatory approach; they have in common that teaching is through communication rather than for it. Widdowson (1983, pp.108-109) says, "CBI represents a significant departure from traditional foreign language teaching methods (bottom-up approaches) in that language proficiency is achieved by shifting the focus of instruction from the learning of language per se to the learning of language through the study of subject matter through top-down approaches focusing on meaning".

Over the last decades, there has been a general movement in language teaching away from studying about language towards a focus on using the language as a real tool to communicate. As a direct consequence of this trend, CBI has become increasingly popular as a means of developing linguistic ability in a great variety of educational contexts. The philosophy of this methodological paradigm aims at encouraging students to learn a new language by using it from the first class as a real means of communication. Since the early 1990s, CBI has gained increasing popularity and prominence on the language teaching scene in a wide range of contexts and educational settings. There are numerous references to successfully implemented models of this specific methodology in countries other than Canada and the United States, such as Russia (Leaver, 1984), Australia (Chapell and DeCourcy, 1993), Mexico (Klahn, 1997), Japan (Murphy, 1997), Hong-Kong (Chapple and Curtis, 2000), etc. Within the European framework, the need to provide a meaningful context for learning a language has been reinforced and supported by the European Commission (The Common European Framework of Reference for Languages) and consequently, content based models have become increasingly common in English foreign language settings being perceived as an excellent contribution to contemporary foreign language pedagogy.

Objectives of Content-Based Instruction

Language learning is proportional to the learning of content in CBI; therefore its objectives are stated as the objectives of the content course. According to Brinton et al. (1989), the objectives of CBI are as follows:

1. To activate and develop existing language skills.
2. To acquire learning skills and strategies that could be applied in future language development opportunities.
3. To develop general academic skills applicable to university study in all subject areas.
4. To broaden students understanding of English speaking people. (as cited in Richards and Rodgers, 2009, p.211).

Principles of Content- Based Instruction

CBI stands in contrast to traditional approaches to language teaching in which language form is the primary focus of the syllabus and of classroom teaching. The core principle of CBI is people learn a second language most successfully when the information they are acquiring is perceived as interesting, useful and leading to a desired goal. According to Larsen-Freeman (2009, p.41), the principles of CBI are as follows:

1. The subject matter content is used for language teaching purpose.
2. Teacher should build on students' previous experience.
3. When learners perceive the relevance of their language use they are motivated to learn. They know that it is a means to an end rather than an end in itself.
4. The teacher 'scaffolds' the linguistic content, i.e. helps learners say what it is they want to say by building together with the students complete utterance.
5. Language is learned effectively when it is used as a medium to convey informational content of interest to the students.
6. Vocabulary is easier to acquire when there are contextual clues to help convey meaning.
7. When they work with authentic subject matter, students need language support. For instance, the teacher may provide a number of examples, build in some redundancy, use comprehension checks, etc.
8. Learners work with meaningful, cognitively demanding language and content within the context of authentic material and tasks.
9. Communicative competence involves more than using language conversationally. It also includes the ability to read discuss and write about content from other fields.

Advantages of Content -Based Instruction

The advantages of CBI are as follows:

1. Students will be highly motivated to learn a second language because the CBI courses and classes directly address learners' needs.
2. The use of authentic materials facilitates learning by making it meaningful.
3. This approach aims at developing communicative and practical skills in learners.
4. All the language skills are taught integrated through meaning in content.
5. Comprehensible input is much more focused.
6. In this approach learners are exposed to study skills and learn a variety of language skills which prepare them for arrange of academic tasks they will encounter.
7. CBI gives emphasis on learner autonomy because learners play active and autonomous roles in CBI classes.
8. In CBI the activities of the language classes are specific to the subject being taught and geared to stimulate students to think and learn through the target language.
9. It explores of the alternative learning strategies.

Nowadays, every language teacher gives priority to the communicative method in language teaching. Content-based instruction is also based on communicative notion which has been widely used in a variety of different settings since 1980. It offers unlimited opportunities for teachers according to students' interests and needs with interesting and meaningful content. Richards and Rodgers (2009, pp.219-220) mention, "Its advocates claim that it leads to more successful program outcomes than alternative language teaching approaches. Because it offers unlimited opportunities for teachers to match students' interest and needs with interesting and meaningful content, it offers many practical advantages for teachers and course designers". In this method the activities of language classes are specific to the subject being taught and are geared to stimulate students to think and learn through target language. This is student centered method. It integrates four language skills.

Procedures

The appropriateness of the design for answering the research questions is one of the first steps in educational research. The experimental design is "the structure by which variables are positioned or arranged in the experiment"(Wiersma and Jurs, 2005: 101). Due to the frame of the current study, the experimental design of one group pre-and post-test is implemented. The aim of such design is to teach and implement a specified course to a specified group of learners to know the effectiveness of a given designed course. In such type of design, one group is randomly chosen from the whole population to represent the whole population. The chosen group is pre-tested ,then , the proposed treatment is implemented, after that the post –test is applied to see whether the proposed syllabus has a significant change in terms of achievement test or not.

To achieve objectivity as far as possible ,the researcher has selected subjects that share the same age to avoid age variable . All the subjects of the current study share the same age their age range from (20-21). In order to check the education level of the subjects under investigation, a pre-test is conducted by the researcher to ensure that most of the subjects share almost the same level of education.

Population and Sampling

The term population refers to "the entire people, objects, items that share the same characteristics from which the sample can be chosen" (Malekly et al,2010: 911). The population of this study includes all male and females students of second-year at the Department of Biology/ University of Mosul during the first semester of the academic year 2023-2024. The total number of the population of the current study is (120) subjects.

Sampling refers to the process of selecting a statistically illustrative and representative sample of persons from the population of interest. Sampling process is known as "selecting subjects to represent the whole study population" (ibid ,2010: 912). Students who represent the sample are (60) male and female subjects. The researcher has prepared all the needed instructional materials which include selecting the behavioral objectives and preparing the teaching plans. To achieve the educational and pedagogical aims of the current study, the researcher has prepared a daily lesson plan for the teaching units. It is important to mention that the researcher takes into consideration the general as well as the behavioral objectives of the lessons. It is worth mentioning that the experimental group is taught according to the independent variable "teaching scientific topics through adopting a modified model of CBI in addition to their textbook Headway Plus". It is worth mentioning that the researcher has consulted a group of experts to decide whether the lesson plan is effective and valid or not. Moreover, the researcher kindly addressed the specialists to

ensure the validity of the lesson planning and if there is any addition, modification to be carried out. They kindly read the lesson plan and recommend some modifications.

The Role of the Teacher

Due to the fact that (ESP) is known as the field of language teaching and learning of English in a specific area of specialty however, learning ESP means learning to use English in a given specific context with the implication of all the skills and objectives of language learning. The relevance of content in learning ESP where language is used as a means for meaningful learning has been emphasized by several researchers. In a research on ESP versus EGP,

Lo (2012:79) concludes that “the characteristics of a successful ESP syllabus include, among others, having meaningful tasks. A course designed for adult learners should surpass the traditional focus on notional/functional aspects of language. Adult learners are predisposed to learn language when it is a vehicle of meaningful learning rather than a target in itself”. Moreover, ‘people learn a second language more successfully when they use the language as a means of acquiring information, rather than as an end in itself’ (Richards and Rodgers, 2001:207).

Since teaching scientific English by using a modified version of (CBI) requires teaching language through its communicative use and negotiation of meaning, teachers are required to integrate the four skills and excessively use authentic scientific material to encourage students learn the given topics effectively. Teachers, according to CBI have to: select, adapt, modify the authentic suitable material and topics, create real environment to practise learner-centered activities, lessons are contextualized to be the starting point of departure, provide opportunities for the learners to use the target language successfully, manipulate the topics as well as the communicative abilities of the learners to focus their attention on the target and underlying information, make use of activities and tasks that encourage learners to work in groups (Omoto and Nyongesa, 2013:238).

So in ESP courses a teacher is not only seen as a language provider, but also as a need analyst. Taking all the above mentioned points into account, the researcher has read about the scientific topics within the students’ field of specification and selected the most relevant ones which can increase their opportunities to use, master, comprehend the scientific topics.

The researcher has developed the topics to enhance and improve the students’ four skills. Moreover, the given topics are provided with a brief instruction about the strategies of reading comprehension and the provided units are designed to improve the four skills effectively.

The Role of the Learner

Since CBI is regarded an approach of language teaching and learning, it is seen as a learner-centered approach. Learners, according to CBI, are encouraged to use authentic language effectively, negotiate meanings, engage effectively in the proposed scientific lessons. Learners are recommended to comprehend, acquire and use the scientific material. The proposed lessons are prepared by the researcher to encourage students internalize and understand the prepared topics. Also, learners are required to read the technical, scientific items correctly, infer the important data as well as the specified thoughts from given passages. Teachers, according to this approach, want their students to master content and the linguistic aspects of the language (Celce-Murcia & Brinton, 2014:438).

In general, students are required to use the scientific vocabulary items with their pronunciation appropriately. The prepared units of the scientific topics are divided into four basic divisions namely; the first division is designed

to improve reading comprehension strategies and skills , the focus of this section is on scientific items with their definitions and recognizing their relevance in terms of word groups and it is organized to equip learners with the ability to find out the meaning of the scientific technical concepts .The second division is prepared to enhance the second language learners' ability to write scientific, well-organized summary using their own style of writing the aim is to improve their writing skills. The third section is given to enhance the learners' ability to translate into Arabic and the last section aims at improving the listening and speaking abilities of the learners to use them effectively.

In a nut shell, students are required to engage in the given units in a collaborative and autonomous manner.

Pre-Post Test Description

A test is regarded as an important tool in the process of evaluating any instructional programme as well as the students' progress in a specified area. It is an important device utilized by the researcher to gain the required information and to determine the levels of the subjects. The pre-test is essential to be given by the subjects under study to identify the general level of the subjects and its importance lies in achieving the purpose of the experiment as a whole. An achievement test evaluates how a learner has learned the material within a specific course. The administration of the achievement test is carried out in the classroom with some essential instructions such as how to answer the test items .The answers have been scored as well as analyzed by the researcher herself .The test scores were out of (100) marks distributed among definite questions. Each question measures a specific activity.

In general, the whole test is formulated to measure two basic linguistic levels, namely recognition and production. Basically, the test is designed to assess the subjects' knowledge with regard to (4) specified linguistic dimensions they are:

- a. Reading comprehension. (recognition level)
- b. Acquiring scientific concepts. (recognition level)
- c. Translation. (production level)
- d. Writing. (production level)

As for reading comprehension , the basic skills to be measured are the reading comprehension strategies such as skimming, scanning, previewing. Moreover, the items of the test are designed to achieve the basic goal of the suggested scientific course.

To test the scientific concepts, the pre-posttest involved questions which carry technical vocabulary to measure the subjects' ability to identify, recognize the scientific items in addition to the knowledge of the scientific items and their descriptions and relatedness effectively.

To assess the degree of success in translating from one language (English)into another language (Arabic) , the achievement test has involved item that measure the students' ability to translate paragraphs from English into Arabic language. The last skill to be assessed in the achievement test is writing. The test investigates the students' knowledge in terms of previously mentioned four sections . The test items were scored out of (100), and each section has its own marks and the marks are all distributed among the following:

A-Reading comprehension skill carries (30) marks distributed as follows:

Item No.1 measures previewing skill.

Item No.2 measures skimming skill.

Item No. 3 measures scanning skill.

It is important to state that the questions that investigate reading comprehension skill are formulated in the form of MCQ (Multiple Choice Questions) and the students have to select the most suitable answers to the given questions .

B- Knowledge and identification of scientific concepts carries (30) marks distributed as follows:

Item No. 4 measures the synonyms of scientific items.

Item No. 5 measures antonyms of scientific item.

Item No. 6 measures identification of word groups.

Item NO. 7 measures definition of the specified scientific item.

C-Translation from English into Arabic carries (20) marks;

Item No. 8 seeks to assess the students ability to translate from English into Arabic.

D-Writing is scored out of (20)

Item No. 9 investigates the subjects' ability to write a well-organized paragraph about the function of the Immune System.

To achieve objectivity in the scoring of the translation and written items (items No. 8 and 9) as far as possible, another teacher has scored the answers' of the students.

Specification of the Content and the Scores of the Test

Contents	Behaviors	Questions	Items	Scores	
A- Reading Comprehension Passage The Recognition Level The Production Level	To choose the best answer to the questions.	1		10	
		2		10	
		3		10	
		4		15	
		5		5	
		6		5	
		7		5	
		To Translate into Arabic. To write a summary about the passage	8		20
			9		20
Total		100			

Validity and Reliability of the Pre-Post Tests

Measurement is seen as one of the fundamental components of research design. It has many characteristics such as validity, reliability and practicality (Mousavi ,1997:441). Validity clarifies how well the collected data covers the real area of investigation. Johnson and Christensen point out that “valid research is plausible, credible, trustworthy, and therefor defensible” (2004:410).

The test must demonstrate appropriateness for its purpose to maintain test validity. Although there are various types of validity, only two are regarded relevant for achievement tests, namely content and face validity. These two types will be tackled in details in the following subsections.

The test items were subjected to a jury of specialists in order to decide on face validity of the achievement test. The jurors were authorized to identify if the test items were suitable, partially suitable, or not suitable as well as to omit, add or change anything they consider inappropriate. Finally, they were all in agreement that the test is satisfactory and appropriate for second-year college students and within the accepted standards.

Reliability concerns the extent to which a measurement of a phenomenon provides stable and consistent results. In other words, it measures the quality of the research. Testing for reliability is important in the sense that it refers to the consistency across the parts of a measuring device (Mousavi, 1999; 124). After collecting and analyzing learners' scores statistically, the achievement test reached 0.79 which is high reliability and acceptable. The construction of the achievement test must address item analysis, item difficulty and item discriminability (Cohen & Morrison, 2005: 335). The difficulty of the items in the test has been checked by using a definite statistical mean. It has found out that the level of the difficulty ranged between 27% to 53% for all items. This was regarded as acceptable and satisfactory. Item discriminability is calculated by subtracting the proportion of learners' correct answers in the lower group from the proportion of correct answers in the upper group. By using a suitable statistical mean, the discriminatory index ranges between (0.27 to 0.60) for all items of the test.

Implementation

Basically, the experiment lasted for one course (the first semester) of the academic year 2023-2024. The experiment was launched on the 2nd of October and ended before the mid-year examination. The pre-test is applied a week before the experiment and the same applies to the post-test in which it is applied the week after the end of the course.

The course is taught by the researcher after getting permission from the Dean of the College of Arts as well as the Dean of the College of Education for Pure Sciences. The content of the course is divided into two components the first one is the students' textbook the "New Headway Plus" in addition to the supplementary scientific syllabus. The academic year comprises two semesters and the proposed units of the suggested course are (12) units, each (6) units should be taught within one course. Moreover, each unit will be taught within (2) weeks; (2) hours a week.

The experiment ended on Thursday, 12th, January 2024 by administering the posttest to the sample subjects. Then, a questionnaire has been given to the subjects to show their views concerning the suggested Biological English course. Then, the students' responses have been scored and the collected data analyzed by using suitable statistical means.

Data Analysis

Obviously, the main purpose to administer the posttest is to find out the significant difference (if any) concerning the variables found in a specified study. The mean scores of the pre and posttest are documented and analyzed statistically using SPSS package version (25). In other words, the achievement of the students is analyzed to see the effect of teaching and implementing a supplementary scientific syllabus on the students' achievement as a whole.

Concerning the formula adopted in the analysis, the researcher consulted a specialized person to deal with the analysis. It is important to state that, the (T- test formula) is used in the process of analyzing the collected data.

The mean scores of the experimental group on the pre-test is (35.95) whereas the mean scores of the experimental group concerning the posttest is (53.783). The T calculated value is (8.803) whereas the T tabulated is (1.676) at 0.05 level of significance. This comparison of the T calculated value and the T tabulated indicates that there is a statistically significant difference between the pre- and posttest concerning the scientific proposed syllabus. The comparison shows that the highly significant difference is found out in favor of the posttest. The results point out the fact that the component of the suggested scientific design is effective. The statistical difference of the mean scores between the

pre-test and the post one indicates that the students get benefits from the suggested syllabus. The course has developed their achievement level.

The following table illustrates the statistical treatment and results concerning the comparison between the pre and posttest in the achievement level of the experimental group.

Comparison Between the Pre and Post Achievement Test

EG	No.	Mean Scores	SD.	T- Value	
				Calculated	Tabulated
Pre-test	60	35.95	14.748	8.803	1.676
Post-test	60	53.783	16.615		

***Significant at ≤ 0.05 level under (59) degree of freedom, tabulated T (1.676)**

After analyzing the posttest results statistically, it has been found out that the percentage of the true answers is (%71.67). This indicates that the scientific syllabus is effective and the progress is shown clearly in the students' answers.

The researcher hypothesized that there is no statistically significant difference between the mean scores of the experimental group in the pre and posttest with regard to the achievement test. After documenting the data and analyzing them, the above results show that there is a significant difference between the mean scores of the pre-post achievement tests. The difference is in favor of the posttest. Consequently, the null hypothesis is rejected and the alternative one is accepted.

Conclusion

According to the findings of the study, the following conclusion has been reached at:

1. According to the results obtained from the data of the pre and posttest of the experimental group of the current study, it is believed that the proposed syllabus is approved to be beneficial, effective and appropriate for teaching scientific material.
2. Scientific topics are more motivating and encouraging material for second-year students of Biology since these topics are the core of their specialization.
3. Learning how to translate from English into Arabic is approved to be essential in the academic second-year in the Department of Biology.
4. The process of teaching academic, scientific English is effective when the students are equipped with the essential, most utilized items which comprise the core of their specialization.
5. The recognition level is motivated when the focus is on the scientific items and essential technical words of the scientific field. Besides, reading comprehension strategies are enhanced when the focus is on teaching their strategies and employ them in the process of reading.
6. The production level is very important. Students should be encouraged to write, underline, pinpoint, summarize, gain the main idea after reading the given passage carefully.
7. Teaching a scientific syllabus as well as many other linguistic aspects such as grammar, listening, language function, pronunciation, and everyday English are effective for the students and such a mixture between scientific topics and the general English has approved to be effective.

8. After teaching the suggested supplementary syllabus, students are able to use reading comprehension strategies effectively. They acquire these strategies such as previewing, skimming and scanning.
9. The students' ability to speak and express their ideas as well as share their information are enhanced when they feel confident.
10. Recognition and production skills are practised interactively.
11. The structural as well as the communicative aspects of the language are practised in the proposed course of the current study. Students are offered with great chances to utilize these aspects interactively.
12. The Content-Based Approach proved to be applicable and effective.

Recommendations

In the light of the results obtained above, the researcher recommends the following:

- 1- It is recommended that scientific items should be focused on when teaching second-year students since such items and vocabularies are the core of their specialization.
- 2- The focus on teaching such scientific departments will be on meaning as well as on the structural aspects of language.
- 3- Teachers are recommended to design syllabus taking into account the most difficult aspects of language students face in their study courses.
- 4- Teachers are recommended to follow a well-designed and prepared plan when teaching scientific English so that students can share information and participate in side the class.
- 5- Teaching scientific English depending on the Content-based Instruction is approved to be effective since there is no specific method of teaching to be followed by the teachers what is needed is to make the students active participant and engage in the process of teaching and learning effectively.
- 6- Scientific items in their authentic context are recommended to be heavily used in the scientific syllabus.

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