

In-house CBI materials and English language education

ALI IŞIK

Istinye University

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ABSTRACT: This study aims to investigate and compare the effects of in-house content-based instruction (CBI) materials and general English course materials on student attitudes toward English language learning together with their impact on student English language development and mastery of academic content. It also focuses on English as a foreign language (EFL) teachers and departmental faculty members' attitudes towards CBI materials. A mixed-methods research model was used to collect data from 175 university freshman EFL students, 17 EFL teachers, and seven departmental faculty members from different faculties. The EFL teachers developed their own CBI materials for each academic program. The results indicate that the students view the in-house CBI materials more positively than general English course materials. Moreover, the CBI materials also contributed to the students' English development and mastery of academic content outside English language learning. Both EFL teachers and departmental lecturers expressed positive attitudes towards the CBI materials.

Key words: Content-based Instruction, in-house English Language Teaching (ELT) materials, learner attitudes, teacher attitudes, teacher training

Materiales propios de CBI y educación en inglés

RESUMEN: Este estudio tiene como objetivo investigar y comparar los efectos de los materiales propios de instrucción basada en contenidos (IBC) y los materiales de un curso de inglés general en las actitudes de los estudiantes hacia el aprendizaje de la lengua inglesa; junto con su impacto en el desarrollo del idioma y el dominio del contenido académico. También se centra en las actitudes de los profesores de inglés como lengua extranjera (ILE) y los miembros de las facultades relacionadas con los materiales de IBC. Utilizando un diseño de investigación de métodos mixtos, se han recopilado datos de 175 estudiantes universitarios de ILE de primer año, 17 profesores de ILE y siete miembros de diferentes facultades. El profesorado de ILE había desarrollado sus propios materiales IBC para cada programa académico. Los resultados indican que los estudiantes ven más positivamente los materiales propios de IBC que los materiales del curso de inglés general. Además, los materiales de IBC también contribuyeron al desarrollo del inglés de los estudiantes y al dominio del contenido académico. Finalmente, tanto los profesores generales como los profesores de inglés como lengua extranjera expresaron actitudes positivas hacia los materiales de IBC.

Palabras clave: Instrucción basada en contenidos, materiales internos para la enseñanza de la lengua inglesa, actitudes de los aprendices, actitudes de los docentes, formación del profesorado.

1. INTRODUCTION

CBI's relevant content and varied real and challenging materials conceivably appeal to students and lead to interesting classroom activities (Banegas, 2012; Tedick & Wesley, 2015). When students realize that the CBI materials develop the skills and knowledge, they need to fulfill their future goals, they are likely to embrace the learning process cognitively and affectively to master both linguistic and academic content (Bulon, 2020). Thus, the relevance of materials and classroom tasks increases student motivation and learning efficiency (Ballinger, 2013; Cenoz, 2015; Cenoz & Ruiz de Zarobe, 2015; Tedick & Cammarata, 2012). Moreover, CBI materials are cumulative by nature and build on what students have already learned. This reduces student anxiety, boosts comprehension, and increases self-confidence in mastering CBI materials. In short, CBI materials stimulate and encourage interaction, negotiation, and comprehension, which all develop communication skills (Ball et al., 2015; Mayo & Ibarrola, 2015). As the primary means to realize the aim of a language program, CBI materials, especially in-house ones, demand scrutiny in different contexts, to better grasp their pivotal role in CBI.

2. LITERATURE REVIEW

CBI materials must be meticulously calibrated considering both micro and macro contextual factors. Relevant and multidimensional CBI materials harmonize content and program language goals while being tailored to students' cognitive, academic, and linguistic levels (Işık, 2021; Lo, 2015; Mehisto et al., 2012; Morton, 2018; Siekmann et al., 2017). Unfortunately, appropriate CBI materials are rare in the marketplace. Those available are usually inadequate to meet the needs of specific CBI programs. Yet developing and implementing high-quality materials to meet the needs of each unique context is extremely demanding (Ball et al., 2015; Morton, 2013; Siekmann, et al., 2017), time-consuming and challenging, requiring expertise and dexterity in both the content area and the target language (Kong, 2015; Llinares et al., 2012; Morton, 2018; Nikula, 2015; Zhyrun, 2016). Materials development and implementation demand that content and language be combined and modified and adapted to students' linguistic, academic, and cognitive levels (Banegas, 2012; Coyle et al., 2010; Mehisto, 2012). Incrementally presenting knowledge while considering the interconnection of content and language is an immense task (Pena & Pladevall-Ballester, 2020).

As CBI materials stem directly from the needs of students, a meticulous needs analysis facilitates the preparation of materials for a particular context (Mehisto, 2008). Close analysis of students' needs determines program goals. Course content, classroom procedures, teaching materials, and language-related tasks are then developed in a cumulative sequence to realize goals (Reynolds-Young & Hood, 2014; Short, 2017). This requires both concerted materials development and stakeholder commitment. Content and language teachers, program developers, and education administrators must work together to come up with appropriate materials to fulfill program goals (Lorenzo, 2007; Lorenzo et al., 2010; Short, 2017; Stoller, 2008).

Although customized CBI materials serve to realize program goals, development carries risks. Pre-service and in-service teacher training may not prepare teachers well enough to

engage in such a process, so that teacher-related factors may impede materials adaptation or task development (Banegas, 2012; Nikula, 2015). Mechanical, irrelevant, and unappealing materials produced by ELT teachers lacking training in materials development may fail to follow basic pedagogical principles and meet CBI program goals (Coyle et al., 2010; Zhyrun, 2016). Unqualified teachers may create chaos for both themselves and their students while developing and implementing materials. Moreover, ELT teachers may lack adequate knowledge of the academic discipline to handle its content and may tend to emphasize the linguistic aspect of CBI at the content's expense. Conversely, teachers of the academic discipline may not attain a balance between language and content and may focus on content at the expense of language (Bruton, 2013; Cammarata & Haley, 2018; Oattes et al., 2018; Siekmann et al., 2017; Short, 2017). To sum up, problems related to developing and utilizing materials in CBI may yield failure in both content and language goals. Such a failure may have negative repercussions on student and teacher motivation and self-esteem, resulting in reduced time and money invested in CBI programs (Bruton, 2015).

Research on CBI materials to date mainly addresses student attitudes. Yet CBI efficiency studies conducted in different parts of the world show CBI's positive effect on language and content learning and student and teacher attitudes (Echevarria et al., 2017; Graham et al., 2018). CBI students demonstrate more positive attitudes towards the target language, show increased self-confidence in their ability to use the target language, and express interest in pursuing its study. CBI students were also found to be more motivated to learn both language and content (Dupuy, 2000; Sylvén & Tompson, 2015). The relevance of CBI materials and tasks results in increased student satisfaction with CBI and more positive attitudes towards it (Corrales & Maloof, 2011; Dalton-Puffer et al., 2009; Lai & Aksornjarung, 2018). Besides, CBI materials in conjunction with materials for traditional content education bring about improved student content knowledge and understanding (Allen, 2004; Alonso et al., 2008; Corzo & Lopera, 2016; Dupuy, 2000; Papai, 2000; Tedick & Wesley, 2015; Tseng, 2017). Furthermore, teachers also perceive CBI more positively (Alonso et al., 2008; Arnó-Macià & Mancho-Barés, 2015; Czura et al., 2009). Although there are numerous studies on the effect of CBI on student target language development, there apparently is no study that specifically focuses on the impact of in-house CBI materials on student language learning. To address this, the current study examined the effects of in-house CBI materials on learners' English language proficiency and their content knowledge and investigated students' and teachers' attitudes towards CBI materials in an EFL program at a university in Turkey.

3. THE PRESENT STUDY

Though it is growing in popularity and is increasingly the subject of research, CBI has not received enough attention in Turkey. When Pérez-Cañado (2012) presented an overview of CBI (CLIL) programs throughout Europe, no Turkish studies were cited because so few exist. This study fills that void in assessing the development of materials for a tertiary-level CBI program in Turkey. This study differs from existing studies in assessing the success of an actual CBI program, comprehensively evaluating the effectiveness of seventeen sets of in-house materials customized for each of seventeen different academic departments at a

single university. Effectiveness was assessed not only for use in the EFL language program alone but also for the university academic programs. Reporting on the first institution-wide, comprehensive CBI program, the study enriches CBI research in Turkey and aspires to spur similar research inside and outside Turkey. Finally, the study also compares the effectiveness of in-house CBI materials to the effectiveness of a general English coursebook (GEC) used supplementally. The study explores the following research questions:

1. How do Turkish EFL students regard in-house CBI materials?
2. How do in-house CBI materials affect the English levels of Turkish EFL students?
3. How do in-house CBI materials affect Turkish EFL students' knowledge of content?
4. How do Turkish EFL teachers regard in-house CBI materials?
5. How do departmental faculty members regard in-house CBI materials?

3.1. The CBI Program

In Turkey, English preparatory school education is often the mechanism to teach English to incoming students, but students sacrifice a year for the process and pay extra for it (Işık & Işık, 2020). Introduced with the slogan “Learning a foreign language without losing a year”, the CBI program featured in this research is unique in Turkey. It divided the number of hours devoted to most English preparatory programs by four and distributed them evenly across each year of a standard four-year academic program, which allotted 8-12 hours a week for CBI.

3.2. Teacher Training

An initial training program for the teachers was conducted by the advisor. The advisor had theoretical knowledge of and practical experience with CBI, as he had designed and implemented CBI programs and CBI materials development courses in the ELT departments of major universities in Turkey since 1996. The 80-hour training was divided into two parts. The first part concerned the theoretical foundations of CBI materials, whereas the second was devoted to the development of CBI materials. Finally, the teachers worked with the advisor to develop their first units of content, then sought more feedback and revised their work. The materials development and teacher training process continued throughout the academic year.

3.3. Materials

Seventeen separate sets of in-house CBI materials customized for seventeen different academic programs were generated to realize the goals of the CBI program. Depending on the total hours of English allotted, a general English coursebook (GEC) prepared by commercial international publishers was introduced for one or two hours a week to supplement the CBI materials.

3.4. Materials Development

3.4.1. The Materials Development Process

One EFL teacher was assigned to each academic discipline. The Common European Framework of Reference for Languages (CEFR) was used as the template for the materials development, and coursebooks were planned for levels A1 to C1. In addition to the CEFR framework, the advisor also introduced a template for the structure of a unit (see Appendix 1). An examination of students' academic programs and other similar academic programs in Turkey and abroad determined student needs related both to content and English language learning. While developing the materials, the EFL teachers needed to collaborate with the lecturers in the relevant academic programs. The process continued throughout the academic year, serving to refine both content and language objectives and determine what skills and tasks the students needed to realize the program goals.

3.4.2. The Materials Development Stages

The in-house materials development process consisted of tightly interwoven steps (see Appendix 2). To carry out the needs analysis and determine the overall aims of the program, the EFL teachers collaborated with departmental faculty members who offered academic courses. Later, the EFL teachers collaborated with the CBI advisor to form a modular table of contents, then received feedback on the table of contents from the departmental faculty members. Each coursebook contained four modules consisting of three units. The EFL teachers began by developing the blueprint of the first module under the supervision of the advisor. After obtaining his approval, they prepared the first unit. The advisor evaluated the first draft of the first unit in the first module and suggested revisions, and the teachers made the revisions and released their units to graphic designers to prepare them for initial use. The process was repeated for the rest of the units in the first module and the other modules in the coursebook. The materials development process proceeded unit by unit, module by module, and the materials were implemented as soon as they were prepared.

Due to strict program regulations and time limitations, the materials were not piloted after the final drafts were completed. Instead, the initial implementation of the materials was considered the pilot. The teachers responsible for developing materials for a specific academic program implemented their materials in the classroom to gather feedback and revise their materials appropriately. In the final phase of the development process, the developers shared their practical data with the CBI advisor. Together they evaluated the data and the advisor offered suggestions to revise the materials. The developers then completed the suggested revisions and submitted them to the advisor who evaluated them again. In short, the materials development process was ongoing.

3.5. Collaboration

All academic departments worked with the ELT Department to coordinate CBI. Academic staff collaborated with the EFL teachers during CBI design, implementation, and evaluation. The EFL teachers supported each other in this venture. The EFL teachers worked together

to implement the materials developed by their fellow teachers during the academic year and gave their colleagues feedback about the materials they developed. The students, too, provided an invaluable contribution to data collection throughout the program during the class and weekly individual conferences with their teachers.

3.6. Learner Training

Learners, as well as teachers, needed training since CBI was novel for them. Each class was visited one by one by the CBI program advisor, who briefed the students about the CBI program and what was unique about it. Students were informed about what they would do inside and outside the education context to foster their content and language learning. The EFL teachers also informed their students they would be assessed in content and language, stressing the importance of alternative assessment, which the students found to be quite novel. The teachers held an individual conference with the students every week to evaluate their performance and collaboratively review their academic study plans and strategies.

4. METHODOLOGY

4.1. Participants

Data was collected from 175 university freshman EFL students placed in academic programs according to their performance on central university exams. The students did not receive any English preparatory school education, attending their academic programs upon matriculation. The students in the study were selected from each faculty through stratified random sampling; the sampling considered the size of the student population in each academic faculty to survey one-third of the student population. In other words, 76 students from the Faculty of Health Sciences, 15 from the Faculty of Arts and Sciences, 16 from the Faculty of Pharmacy, 39 from the Faculty of Economics, Administrative and Social Sciences, and 29 from the Faculty of Fine Arts, Design and Architecture participated in the study. Using convenient sampling, 17 EFL teachers with no prior training or experience in CBI took part in the study. These teachers developed the CBI materials and implemented those they developed in the classroom. Finally, one lecturer was selected through stratified sampling from each academic faculty (seven in total) to participate in the study.

4.2. Instrumentation

A mixed-methods research approach was implemented to obtain comprehensive data. Qualitative and quantitative data were collected to assess the impact of CBI materials on the students' language learning progress and the attitudes of both students and EFL teachers. Quantitative instruments included teacher self-evaluation questionnaires, materials evaluation checklists, content knowledge exams, and Oxford Placement Tests; qualitative instruments included individual weekly conferences with students.

4.2.1. Teacher Self-Evaluation Questionnaire

The questionnaire developed by the European Commission-funded AECLIL project (2013) was used to learn teacher opinions regarding CBI. The questionnaires were administered in the final week of the 30-week academic year. The internal consistency reliability of the questionnaire calculated using Cronbach's alpha was found to range from .78 to .83, indicating a high level of internal consistency.

4.2.2. Materials Evaluation Checklist

A materials evaluation checklist was developed by Işık (2021) to obtain student data about the CBI materials and GEC; its internal consistency reliability ranged from .78 to .79. The checklist evaluation included three main parts: screening, detailed evaluation, and overall evaluation, which are composed of 225 five-point Likert-type items; internal consistency for this particular study ranged from .92 to .94, demonstrating a high level of reliability.

4.2.3. Content Knowledge Exam

Scores on the content section of the CBI-based exams were used to judge how well students had learned content.

4.2.4. Oxford Placement Test (OPT)

To assess their English development, OPT Version 1 was given to students as a pre-test and OPT Version 1.1 as a post-test.

4.2.5. Semi-structured Interviews

The semi-structured interviews were conducted with one departmental faculty member from each faculty to determine how well the CBI program prepared the students for their academic disciplines in terms of both academic content and English (see Appendix 3).

4.3. Data Analysis

SPSS was used to analyze the data. The data obtained from the materials evaluation checklist was analyzed using descriptive statistics, which were also used to analyze data from the questionnaires. The answers to the open-ended questions were categorized and coded for evaluation. T-Test was used to analyze and compare the scores obtained from the pre-and post-tests, ensuring normal distribution of data obtained from the two different versions of OPT.

5. RESULTS

5.1. Attitudes Towards Materials

Tables 1 to 7 report the results of the questionnaire comparing student attitudes towards in-house CBI materials and commercial ELT materials. Table 1 summarizes students’ opinions about the general appearance of the CBI materials and GEC in percentages.

Table 1. The general appearance of the CBI materials and GEC

Items	Insufficient		Partially Insufficient		Partially Sufficient		Sufficient	
	CBI	GEC	CBI	GEC	CBI	GEC	CBI	GEC
Information on the front cover	6.9	24.4	5.2	15.1	20.8	20.9	67.1	39.5
Information on the back cover	7.8	25.7	5.4	13.2	28.7	29.9	58.1	31.1
Table of contents	3.0	14.1	5.9	13.5	21.9	24.1	69.2	48.2
Page layout	10.1	13.9	8.9	4.2	14.9	26.1	66.1	55.8
Font size and type	1.2	9.2	3.5	3.5	13.5	15.6	81.9	71.7
Pictures, graphs and tables used	3.6	10.9	7.1	5.5	18.3	23.0	71.0	60.6
Quantity and quality of authentic texts	1.8	24.0	4.1	12.6	22.8	19.8	71.3	43.7

** CBI: Content-based Instruction materials GEC: General English Coursebook*

The CBI materials were evaluated more positively in all items relating to general appearance. Especially concerning the items “information on the cover page”, “information on the back cover”, “table of contents”, and “the use of authentic texts” the difference between the CBI materials and GEC is observed to be considerable.

Table 2 tabulates how the students evaluated the CBI materials and GEC materials about student-related factors.

Table 2. Student-related factors in the CBI materials and GEC

Items	Insufficient		Partially Insufficient		Partially Sufficient		Sufficient	
	CBI	GEC	CBI	GEC	CBI	GEC	CBI	GEC
Fostering student-centered teaching	6.9	27.9	7.5	14.5	24.7	20.3	60.9	37.2
Contribution to students’ cognitive growth	5.8	31.8	10.5	15.0	29.1	22.0	54.7	31.2
Appropriateness of the content of materials to student background	5.9	31.2	9.4	15.3	25.9	20.0	58.8	33.5
Ease of use of materials by students	5.2	24.4	7.6	9.3	27.9	25.6	59.3	40.7
Short- and long-term effects of the material on student motivation	8.8	32.0	8.2	15.1	35.3	25.6	47.6	27.3

Addressing students of different interests	10.6	31.8	17.6	16.5	25.9	26.5	45.9	25.3
Compatibility of materials with the students' foreign language proficiency	10.7	33.7	10.7	12.2	27.2	24.4	51.5	29.7
Guiding students on how to study the foreign language	13.2	39.0	13.8	16.3	36.2	22.1	36.8	22.7
Encouraging students to do research	11.0	39.6	15.1	17.2	26.7	19.5	47.1	23.7
Charging students with learning responsibility	8.1	34.3	9.8	12.8	26.6	20.9	55.5	32.0
Self-evaluation opportunity for students	12.7	35.5	12.7	16.3	26.6	20.9	48.0	27.3

The students were more positive about the CBI materials when evaluating student-related factors, and the difference between the CBI materials and GEC is more pronounced in this component. While about half of the students thought the CBI materials were sufficient, one-third of them found GEC materials sufficient.

Table 3 illustrates the students' evaluation of the language teaching approach of the materials.

Table 3. Language Teaching Approach and Method

Items	Insufficient		Partially Insufficient		Partially Sufficient		Sufficient	
	CBI	GEC	CBI	GEC	CBI	GEC	CBI	GEC
Language teaching approach	6.3	30.3	9.2	14.9	27.6	22.9	56.9	32.0
Language teaching method	7.0	32.0	9.4	12.0	28.7	24.0	55.0	32.0
Holistic approach to language	3.6	25.4	7.1	11.8	31.0	29.0	58.3	33.7
Ability to support a rich linguistic and socio-cultural perspective	5.3	25.6	12.9	15.3	28.7	25.6	53.2	33.5
Embracing the difference in individual learning strategies	11.0	29.5	11.6	17.3	33.7	28.3	43.6	24.9
Ability to include skills-based approach	14.8	34.1	16.0	17.9	24.9	22.5	44.4	25.4
Ability to include sub-skills	15.7	34.7	15.7	20.8	25.9	19.1	42.8	25.4
Approach to language forms	5.3	21.5	8.9	17.4	30.2	23.8	55.6	37.2
Ability to teach foreign language while relating to other subjects taught at school	5.8	32.4	8.1	16.2	22.1	20.8	64.0	30.6

In evaluating the teaching approach adopted, about half the students determined the CBI materials to be sufficient, and about one-third determined GEC to be sufficient.

Student opinions on the effectiveness of materials for fulfilling syllabus-related factors are summarized in Table 4.

Table 4. Syllabus-related factors

Items	Insufficient		Partially Insufficient		Partially Sufficient		Sufficient	
	CBI	GEC	CBI	GEC	CBI	GEC	CBI	GEC
Compatibility with academic vision	3.4	28.2	4.6	12.1	24.7	20.7	67.2	39.1
Compatibility with academic program mission	2.9	27.0	5.1	9.2	24.0	27.0	68.0	36.8
Meeting language program goals	5.2	30.3	7.5	10.9	27.7	22.9	59.5	36.0
Ability to meet student needs	9.8	37.1	7.5	13.1	29.3	22.3	53.4	27.4
Compatibility with teaching a foreign language for academic purposes	6.9	31.8	12.1	16.8	29.3	23.7	51.7	27.7
Meeting institutional expectations and needs	7.6	31.5	6.4	11.9	25.1	26.8	60.8	29.8

In generally evaluating the compatibility of the materials concerning their academic program and needs, about two-thirds of the students found the CBI materials sufficient, while about one-third found GEC sufficient.

The results of the questionnaire on content are summarized in Table 5. As the content-related part consists of 57 items and is too long to discuss in detail here, the average is presented below.

Table 5. Content-related factors.

Items	Insufficient		Partially Insufficient		Partially Sufficient		Sufficient	
Content	7.5	27.7	10.6	13.2	23.5	20.7	58.4	38.3

On average, the majority of the students reported that the content of the CBI materials was sufficient. About two-fifths of the students thought that the content of GEC was sufficient.

5.2. Effect of CBI Materials on Students’ Language Development

The students underwent the two different versions of OPT as a pre-test and a post-test. Table 6 tabulates the language and writing components separately and presents the total score, indicating the difference between pre-test scores and post-test scores.

Table 6. Results of paired samples t-tests on English scores of the students

	Time	Mean	SD	t	df	p
Language	pre-test	12.71	5.31	-43.36	174	.00
	post-test	35.08	6.96			
Writing	pre-test	6.65	3.53	-42.45	174	.00
	post-test	29.68	4.06			
Total	pre-test	19.36	8.69	-49.79	174	.00
	post-test	64.76	10.19			

p < .05

Significant differences were observed between pre-and post-test language and writing scores, resulting in a significant difference between total pre-and post-test scores.

5.3. Effect of CBI Materials on Content Learning

The students' mastery of the content presented in the CBI materials was assessed. The students' mean and percentage scores on the content assessment are presented in Table 7.

Table 7. Scores of the students obtained on the exams

	N	Mid-term 1		Final 1		Mid-term 2		Final 1		Average	
		Mean*	%	Mean*	%	Mean*	%	Mean*	%	Mean*	%
Faculty of Health Sciences	76	21.30	98	23.30	100	26.30	100	28.30	100	24.5	99.5
Faculty of Arts and Sciences	15	24.30	100	23.30	100	20.30	97	21.30	96	22	98.3
Faculty of Pharmacy	16	21.30	98	22.30	100	24.30	98	24.30	100	22.8	99
Faculty of Economics, Administrative and Social Sciences	39	27.30	100	25.30	100	26.30	100	27.30	100	26.3	100
Faculty of Fine Arts, Design and Architecture	29	23.100	100	21.30	97	19.30	94	27.30	100	22.5	97.8

* over 30 points

The students in all faculties got higher scores regarding average content. Similarly, in terms of percentages, the students performed quite well on the exams assessing content knowledge.

5.4. Teachers' Evaluation of Materials

Although all 17 teachers stated they had no previous CBI experience, after implementing the CBI materials, they all evaluated their teaching as either very effective (47%) or effective (53%). In evaluating their application of CBI, 16 (94%) teachers indicated that they had made a lot of progress, while one teacher (6%) reported "enough" progress. All reported their experience teaching content in English to be either very positive (59%) or positive (41%). Two teachers (12%) reported "never" encountering problems, 12 (71%) reported "sometimes" encountering problems, and 3 (18%) reported "often" encountering problems, indicating the language was too difficult for the students' level. Regarding combining content and language, 3 teachers (18%) reported "always", 8 teachers (47%) reported "sometimes" and 6 teachers (35%) reported "never". Lack of content knowledge was another challenge for the teachers; 3 (18%) said it was always a problem, 4 (24%) said it was often a problem, 8 (47%) said it was sometimes a problem, and 2 (12%) said it was never a problem. All the teachers were satisfied with the pace of the lessons for the students. Concerning the teaching tools, all the teachers found audio-visuals, practical examples, and web links helpful. Likewise, 10 (59%) thought realia facilitated their content teaching. In their overall evaluation of the CBI program, all the teachers indicated that the CBI experience would be either very useful (88%) or useful (12%) for their teaching careers in the future. They reported they liked the CBI experience and would be happy to participate in another CBI activity.

5.5. Findings from the Semi-structured Interviews

The overwhelming majority (86%) of these lecturers reported that they had never heard the term CBI and had been unaware such a program existed, while the remaining 14% said they knew such programs had been implemented in the USA but had never taken part in CBI. All the academicians believed that the CBI program made a considerable contribution to both the language and content knowledge of students. They indicated that CBI materials helped students consolidate the basics of their academic programs and become familiar with academic terminology in English. Moreover, 29% of the academicians said that they benefited from CBI materials themselves when they obtained a copy of them to see the academic terminology they covered. Also, 14% stated that CBI materials encouraged students to search for resources in their academic discipline in English. 71% of the lecturers said that they had co-worked with the EFL teachers on the content of the CBI materials as they were being developed. On the other hand, 29% of the academicians said that CBI occupied a considerable portion of the students' academic program and even occupied a bigger slot in the program than the basic departmental courses, which created an extra academic burden for the students.

6. DISCUSSION

This study investigated the attitudes of university EFL students towards in-house CBI materials compared to GEC, particularly how CBI materials facilitated their English language

and academic content knowledge. It also aimed to elicit the attitudes of EFL teachers and faculty members about in-house CBI materials. Generally, all participants evaluated CBI materials more positively than GEC. It was also observed that CBI materials helped the students improve both their English and academic content knowledge.

The data obtained from the materials evaluation checklist provided a definitive answer for the first research question investigating the attitudes of the learners towards CBI materials and GEC. The results indicated that the students were more satisfied with the CBI materials than the GEC materials. The students found the general physical appearance of the CBI materials more appealing. The page design, modular organization of the materials, presentation of texts, and organization of tasks were highly appreciated. Regarding the supplementary materials, the students found the CBI materials comprehensive and well-supported. In terms of satisfaction, the gap between the CBI and GEC was the smallest regarding the periphery, but still, the CBI was more highly evaluated than GEC. The students thought that the CBI materials were good enough to cover the entire academic year and that the materials presented neither an excessive nor insufficient workload. The students were also happy with the organization of the CBI materials; the developmental and cyclical organization of content supported by language focus worked efficiently for them.

The students also indicated that the approach and methodology of the CBI materials made them happy. The use of language to master relevant content and engage in meaningful, real-life tasks made the CBI materials more attractive to them than the GEC. They indicated that the CBI program syllabus covered both their language and academic needs. Evidence of student satisfaction with content-language integration correlates with the findings of Dupuy (2000) and Sylvén and Tompson (2015) that teaching a target language through content affects student motivation positively. Dupuy (2000) and Sylvén and Tompson (2015) were quite positive concerning CBI content and appreciated the way it was introduced, expanded, and concluded through a variety of relevant and meaningful texts and tasks. Planned content integrating all language skills with the active participation of students contributed positively to student satisfaction. Overall student satisfaction resulting from meaningful and relevant ELT materials supports the findings of Corrales and Maloof (2011), Dalton-Puffer et al. (2009), Graham et al. (2018), Lai and Aksornjarung (2018), and Wesley (2009), who also indicated that CBI materials with a direct, real-life use were attractive to students.

The study furnishes answers for the second research question addressing the effect of the CBI materials on the English proficiency of the students. The learners improved their scores significantly through CBI and made massive advances in English. The CBI materials also supported content learning. The scores the students obtained on the CBI-based assessment showed that they did extremely well in mastering the academic content. These results definitively answered the third research question addressing the students' mastery of the CBI materials' content. Regarding the gains in content, the findings of the study align with those of Allen (2004), Alonso et al. (2008), and Junyue and Yang (2011). In addition to content learning, the study supported the findings of Corzo and Lopera (2016), who found that students felt more motivated when they realized the connection between the classroom materials and tasks and their lives. The study also correlated with findings regarding student motivation to continue language education (Dupuy, 2000), academic socialization (Papai, 2000; Tedick & Wesley, 2015), cooperative learning, critical thinking, and increased confidence in target language use (Tseng, 2017).

Teacher evaluation of CBI materials revealed similar findings and provided answers to the fourth research question on the attitudes of EFL teachers towards CBI materials. Although the teachers almost had no experience in CBI, they indicated they made enormous progress in developing and implementing the CBI materials and believed that they taught academic content very effectively. In general, they were quite positive about the project and mentioned that they would like to take part in similar projects in the future. Their positive attitudes about the CBI materials supported the findings of the research carried out by Alonso et al. (2008), Arnó-Macià and Mancho-Barés (2015), Czura et al. (2009), and Infante et al. (2009). However, a few teachers mentioned that combining course content and the target language was burdensome due to their initial unfamiliarity with the academic content; preparing the materials on content and teaching the content was difficult without expertise in the academic disciplines concerned.

The departmental lecturers, too, were generally positive about the project, remarking that it contributed to both the academic and linguistic growth of the students in their departments. They also reported that in helping the students assimilate and consolidate basic academic terminology in English, CBI materials additionally helped students increase their capacity to access academic resources in English and carry out research in their academic disciplines. However, they also claimed that the CBI program occupied a big portion of the academic program of the students and created a bifocal academic context which might create an additional cognitive load for the students. The data obtained from the academicians provided answers to the sixth research question.

7. CONCLUSION

The study indicates that the students developed positive attitudes towards the CBI program. Although it was the first time that they had been exposed to such a program, they appreciated partaking in it, finding both the content and language focus of the program effective. They were also quite positive about the content of the syllabus and found the organization of the syllabus provided effective and qualified instruction; this prompted satisfaction with both content and language. The variety of relevant texts and tasks made the students use language as a means of learning by engaging in genuine communication. Moreover, the classroom organization paved the way for varied contextualized language use. The use of learning tools was efficient, and in addition to facilitating the learning process, these tools helped hold students' attention as well. Thus, it can be concluded that CBI contributed to improving the social and academic English skills of the students.

Most importantly, the students were able to improve their English and academic knowledge simultaneously using the CBI materials. Besides learning basic English terminology in their academic disciplines, students also mastered basic academic content. The methodology to teach English forms worked effectively as well, leading to significant improvement in the students' English. The formal aspects of English did not receive the primary stress and the academic content determined which forms were the focus. In sum, formal aspects of English were primarily used to facilitate the mastery of academic content. They were treated as language awareness tasks, but this did not cause any shortcomings in the students' mastery of English.

The students found the CBI materials to be relevant and motivating. They realized they were dealing with real texts and tasks linked to their immediate needs instead of general target language forms whose uses are far-fetched and fuzzy. In response, the materials amplified the students' efficiency. Teachers were also fascinated by the project. Developing and implementing their own materials propelled their interest, confidence, and teaching efficiency. The positive remarks provided by the academic staff from the academic disciplines also fuelled the teachers' satisfaction. In short, the CBI program was evaluated positively by all involved.

Importantly, the university staff developed the CBI materials with no outsourcing. To the researchers' knowledge, it was the first time EFL teachers developed their ELT materials and tailored them for academic programs university-wide. With the help of carefully designed, task-oriented teacher training, ELT teachers were equipped to come up with their materials. Furthermore, the rich variety of materials they developed addressed different academic disciplines successfully. Thus, the project provided solid evidence that institutions can invest in developing their own ELT materials without depending on commercial ELT materials developed by international publishers.

In light of the fact that teachers are one of the major agents of the language education process and their performance directly impacts its quality, the study provided a good model for teacher training. The exclusive teacher training before and during the program effectively equipped teachers with the knowledge and skills to orient them to and implement a designed program. Hence, the study pointed out the pivotal role of teacher training in ELT, especially regarding innovative projects.

This study is special in that the EFL teachers, rather than the content-area lecturers, developed their materials and implemented them in the CBI program. The EFL teachers developed the CBI materials from scratch. While CBI is usually practiced by the subject-area teachers who are trained to focus on language as well, in this project the EFL teachers assumed the sole responsibility of implementing CBI. Thus, it can be concluded that by coordinating the lecturers and basic research within a given academic discipline, EFL teachers could implement CBI programs more effectively.

8. IMPLICATIONS

The findings emphasize context and needs analysis as essential to the design and implementation of a materials development project. The needs analysis process shows the educational context needed to launch a project tailored to those specific contexts. Developing purposeful ELT materials that bridge language programs and academic programs increases the appeal to students, EFL teachers, and other academic staff. Collaboration is also essential at each and every step of materials development. Academic lecturer contributions are vital to the design of the program's academic content, but even more essential is the orientation of students to CBI's contribution to their academic and linguistic growth. As the students identify themselves with lecturers in their departments, the support that the staff provides is likely to determine the success of the CBI program. Hence, designing a relevant language program that uses germane and relatable materials is likely to affect positive outcomes.

Teacher training is a must to develop materials. Teachers need to be made aware of the content needs of students and subordinate language teaching pedagogy to content teaching.

Maintaining student interest in ELT requires a variety of thematically related texts and tasks, so materials development is crucial. As it is hard to find materials tailored for a particular group of students, teachers should be trained to develop/adapt found materials to their students' skills, needs, and goals.

Finally, this study implies that in-house materials are a powerful alternative to GEC, especially in an EFL context where students may not have much opportunity to use English for general communication. The CBI materials provide context for purposeful language use, developing communicative competence by engaging in experiential learning. Moreover, CBI materials are cost-effective, making it possible to achieve both language- and content-related goals at the same time. Using in-house EFL materials to replace or supplement commercial materials prepared by international publishers deserves consideration.

The lack of a control group could be cited as a limitation of the study. To determine the language outcome of the study, only student pre-test and post-test scores were considered. With these scores, it was unlikely to see the effect of the materials without a control group following a general EFL program. It would have been better to pilot the CBI program first by forming an experimental group and a control group exposed to the same amount of English instruction using two different types of materials. Supplemental GEC material used one or two hours a week affected observed OPT scores. However, it was impossible to isolate GEC and determine the effect of CBI materials alone on observed scores. That only seventeen ELT teachers took part in the study could also be considered a drawback of the research. Finally, the limited focus of the study can be considered a limitation: as the study was conducted at a university, its findings may not be sufficiently general to apply to other universities or primary and secondary schools.

Additional studies that encompass different universities and primary and secondary schools will elucidate the effects of in-house CBI materials on learner/teacher attitudes and learner language development. Additional studies that include GEC control groups will facilitate the comparison of the effects of in-house CBI materials to those of GEC on students' foreign or second language development.

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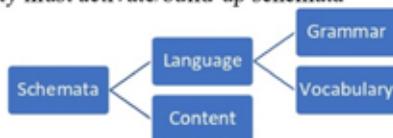
Appendices
Appendix 1.

THE GUIDELINES ABOUT THE STRUCTURE OF A UNIT

Continuous revision + Continuous teacher training	• State the objectives of the unit		
	LEAD-IN /WARM-UP	<ul style="list-style-type: none"> • Cognitive preparation • Affective Preparation • Pre-teaching key language elements: Grammar and Lexis • Pre-teaching key concepts 	<ul style="list-style-type: none"> • Warm-up gives a purpose to do the following tasks. It creates an inner need. • Use a short task, text, visual, fact, statistics and so on to capture their attention. • Use and do sth different and striking.
	BODY	<ul style="list-style-type: none"> • Subject matter • Realistic texts • Realistic tasks • Pop-up Grammar 	<ul style="list-style-type: none"> • Focus on the content. • Employ a variety of tasks and texts. • Make sure that all the skills and activities are integrated. • Provide transition. (how to relate one activity to another) • Never interrupt the content-related activities. • Sometimes, you can implement vocab activities right after each text.
FOLLOW-UP	<ul style="list-style-type: none"> • Personalization • Localization • Real-life tasks • Language: Grammar + Vocab 	<ul style="list-style-type: none"> • Wrap up the content covered • Go over main vocab items • Raise their awareness about target language forms • Contextualize all language-related activities 	

THINGS TO REMEMBER:

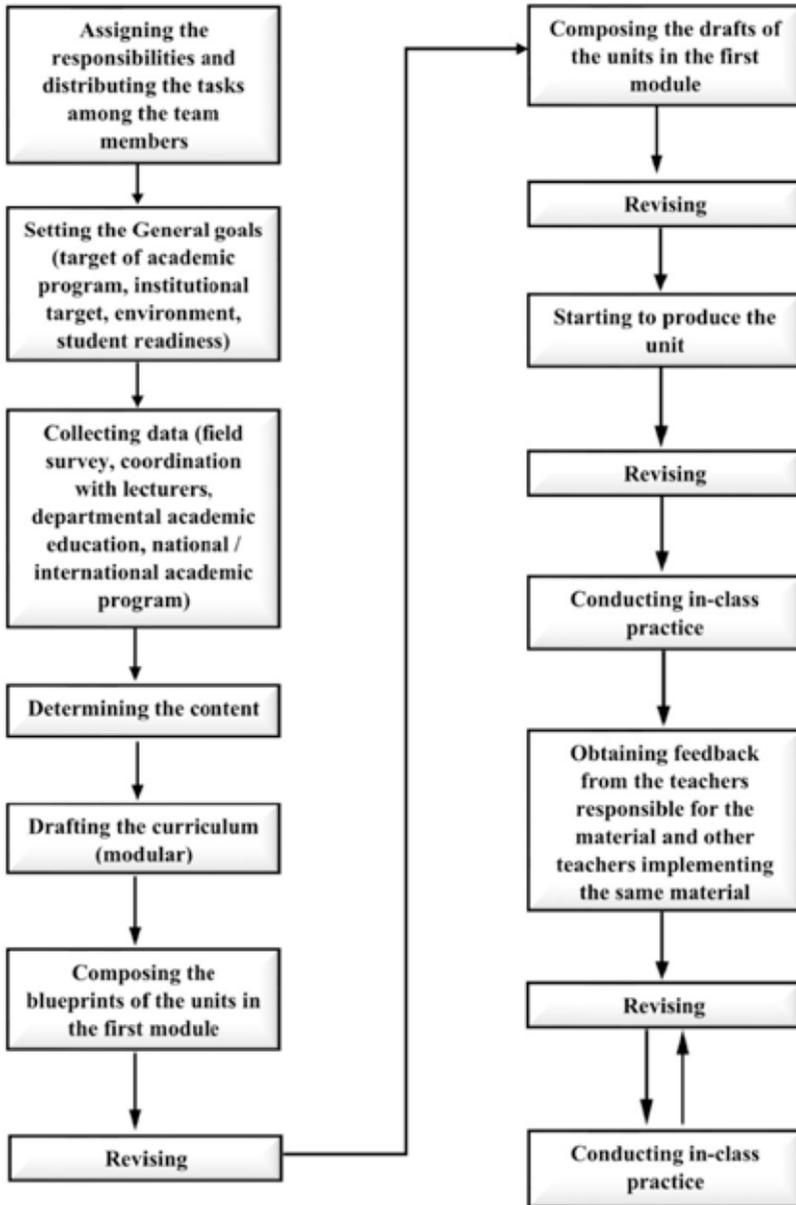
1. Each activity must activate/build-up schemata



2. Grammar and vocab must stem from the texts. In other words, the content must determine them not vice versa.
3. Be careful about the cognitive load in terms of content and language.
4. At the end of each unit, there must be contextualized grammar and vocab activities.
5. Move from general to specific, global to local
6. Do not neglect the FUN part. Try to use cartoons, videos, games, and music.
7. Try to design activities which require physical action (psychomotor) (Walking, drawing, moving).
8. Try to integrate all skills, but there will be no fixed order.
9. Comprehension precedes production Thus, especially, at A1 and A2 levels try to provide an ample amount of comprehensible input. In other words, focus on receptive skills.
10. Exploit a variety of classroom organization
11. Instructions must be **friendly and explanatory.**
12. Add “everyday conversation” related to the topic in each unit

Appendix 2

THE MATERIALS DEVELOPMENT PROCESS



Appendix 3

**GUIDING QUESTIONS FOR THE INDIVIDUAL CONFERENCE WITH THE
LECTURERS**

1. Could you explain what CBI is?
2. Have you ever participated in a CBI program?
3. Has CBI helped your students develop their content knowledge? If yes, please explain.
4. Has CBI helped your students develop their English? If yes, please explain.
5. Have you collaborated with the EFL teachers while designing the program? If yes, please explain.
6. What would you like to say about CBI?