

CBI in Algeria's Higher Education Institutions: Using the Adjunct Model to Teach Physics

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ARTICLE INFO

Article history

Received: April 25, 2022

Accepted: June 04, 2022

Published: July 31, 2022

Volume: 11 Issue: 4

Advance access: July 2022

Conflicts of interest: None

Funding: None

ABSTRACT

Content-Based Instruction is an approach in which the teaching is centered on the content, deeply rooted on the principles of communicative language teaching; CBI fosters students to take part and participate in the exchange of content. This theoretical article reflects upon Content-Based Instruction as a relevant language teaching approach, its background, a brief definition of the concept, and its principles. An overall overview of the status of English in Algeria is also undertaken with some hints of the linguistic policies and reforms held in Algeria. Moreover, this research paper reports on Content-Based Instruction's distinctive characteristics and relies on the adjunct model to elaborate an instructional unit meant to implement CBI in the field of Physics and helps students gain a solid knowledge of English through tailored designed activities. The conclusion supports the assumption that the adjunct model as an approach fulfills the needs of learners by bridging ESL classes to academic content and proves to be effective in providing a transition between ESL and academic classes.

Key words: Adjunct Model, Content-Based Instruction, Teaching English in Algeria's Higher Education Institutions (HEI)

INTRODUCTION

Content Based Instruction is an approach that involves the cooperation and collaboration of content and language teachers. CBI as described by Wesche (2010) "...is a form of communicative teaching (CLT) in which language instruction is integrated with school or academic content instruction". It refers to a variety of instructional models in which an academic subject matter is taught in a second or foreign language, so that learners can learn academic content and language skills simultaneously.

Content-based instruction is based on the rationale that "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 & Rodgers, 2001, p. 207). Krashen (1981) posits that students acquire language when they are exposed to "comprehensible input." Therefore, CBI provides abundant input in the form of authentic subject-matter materials, and CBI instructors employ a variety of techniques to make this input comprehensible to students, thus fulfilling Krashen's conditions for language acquisition can be guaranteed. Indeed, Krashen claims that "comprehensible subject-matter teaching is language teaching" (p. 62).

A second rationale for CBI is that students are motivated to learn when the instructional materials are based on topics that they find interesting and relevant. In addition, CBI focuses on addressing students' needs, especially when the

curriculum helps students fulfill immediate academic requirements.

This paper is framed under CBI and relies on the Adjunct Model chosen as an approach in implementing CBI at the university level as it consists of two linked courses, a content class and an ESL class that fits entirely our context. The main enquiry of this article lies in the "effectiveness" of the adjunct model in teaching ESP and whether this latter is the most appropriate model to fit the Algerian context.

LITERATURE REVIEW

Content Based-Instruction

Content-based instruction (CBI) is an approach of teaching that focuses on learning language through learning about something. Although CBI is not new, there has been a surge of interest in it because of its effectiveness in ESL and EFL programs around the world.

Content-Based Instruction is defined as an "approach of teaching second languages in which instruction is planned on the content or material that students will learn rather than a linguistic or other type of curriculum" (Richards & Rodgers, 2001, p.204). In other words, CBI entails integrating language learning with content learning at the same time; content often refers to academic subject matter such as math, physics, or social sciences. The language is used as a medium for teaching subject content in CBI (Mohan, 1986). Content

learning is used to fulfill language learning objectives. Most CBI courses have syllabi that are generated from content areas and vary greatly in detail and presentation. In a nutshell, CBI is a method of simultaneously teaching language and content. Language teachers must be content-area experts who can elicit knowledge from students. Furthermore, language teachers are responsible for keeping context and comprehensibility at the forefront of their instruction, selecting and adapting genuine materials for use in class, providing scaffolding for students' linguistic topic learning, and creating learner-centered classrooms (Stryker & Leaver, 1993).

Since the 1980s, CBI has been widely employed in language education in a number of settings, including English as Specific Purpose (ESP) Programs for Students with Limited English Proficiency (SLEP), Language for Specific Purposes (LSP), immersion programs, and ESL/EFL Language Programs. CBI is not associated with any specific procedures or activities because it refers to an approach instead of a method. At the process level, training materials and activities are chosen based on how well they match the type of program. Finally, CBI allows teachers to connect students' needs and interests with entertaining, understandable, and relevant information (Brinton et al., 1989).

CBI suggests a method in which students learn the target language through content. According to Richards and Rodgers (2001), "Content-Based Instruction refers to a method of teaching second languages in which instruction is arranged around the content or knowledge that students will gain, rather than around a linguistic or other type of syllabus" (Richards & Rodgers, 2001, p. 204). The subject matter that individuals learn or transmit through language is commonly referred to as content (Richards & Rodgers, 2001). "The teaching of language through exposure to information that is fascinating and meaningful to learners" is what content-based instruction is (Brinton, 2003, p. 201). When it comes to articulating the concept of content, Snow (2001, p. 303) defined content as "the utilization of subject matter for the objectives of second/foreign language teaching." In an adult EFL environment, subject matter may consist of topics or themes based on interest or need, or it may be quite precise, such as the topics that students are currently studying in their elementary school classes.

CBI improves motivation, self-esteem, foreign language ability, and cultural literacy (Stryker & Leaver, 1997). Ultimately, Stryker and Leaver (1997) state that, when these factors are taken into account, content-based training provides a hard but highly gratifying alternative to standard foreign language approaches. It is without a doubt among the most important and relevant techniques to language education, essentially, it provides significant potential to match learners' needs with meaningful information in order to facilitate language acquisition.

Theoretical Background of the Adjunct Model

The adjunct model is one of Brinton's educational instruction models along with theme-based instruction model and sheltered model. Theme-base model refers to specific themes that capture the interest and focus of learners. These themes

"provide the point of departure for skill- and language-based instruction" (Brinton, Snow 2017:4). The many different themes dealt with in this model enable learners acquire the L2 through sustained content language teaching.

Sheltered instruction on the other hand, entails the separation of native speakers from non-native ones for the sake of content instruction, which is delivered in the students' L2.

"...The adjunct instruction refers to instructional models in which two courses (a content course and a language course are paired, with the content and language instructors collaborating to merge or dovetail their instructional objectives." (Brinton, Snow 2017:4).

For the sake of language instruction, L2 students are separated but combined with mainstream students in the content course. The content course initiate language classes regarding what to teach in the language class; language objectives are identified with respect to students' linguistic needs in the content class. To improve the L2, students are immersed in a challenging and high-level language in the content course. This model allows learners increase their L2 and improve mastery in the content knowledge.

The best illustration of the adjunct model is UCLA's Freshman Summer Program (FSP), described in Content-Based Second Language Instruction (Brinton, Snow, & Wesche, 2003).

In this summer bridge program, first-year L2 students who had been identified by university admissions as "high risk" took an EAP course paired with a content area course that fulfilled one of the students' general education requirements (e.g., Introduction to Psychology). In collaboration with the Psychology professor and teaching assistants, the EAP instructors identified language objectives that would assist students in their reading and writing assignments for the content course. They also stressed academic preparation skills with a view toward preparing students for the general demands of academia. Former ESP students ranked the academic skills they had learned (e.g., taking lecture notes, preparing reading guides, using in-class essay/exam strategies) highly; however, above all "adjusting to UCLA" was the highest rated benefit of the adjunct experience (Snow & Brinton, 1988).

The adjunct model provides an innovative means for ESL programs to serve learners with limited proficiency for degrees and vocational programs. The adjunct model was chosen in our work because it links ESL/ESP classes to academic content courses, and is regarded as an effective way to provide a transition between ESL/ESP and academic classes. Besides, as pointed by Brinton, the adjunct model uses authentic materials and enhances critical thinking; courses in the adjunct model have mutually coordinated materials and assignments so that the language course supports students learning in the content course. Most of all, the choice of the adjunct model was done because this type of instruction is a 'one for two' as it offers learners both the capacity to be proficient in both language and content. This emphasis is clearly illustrated in Van Lier's Scale of language and content (2005) (Figure 1), according to him "The chart... is a simple reminder that CBI is a continuum, not an either-or choice"

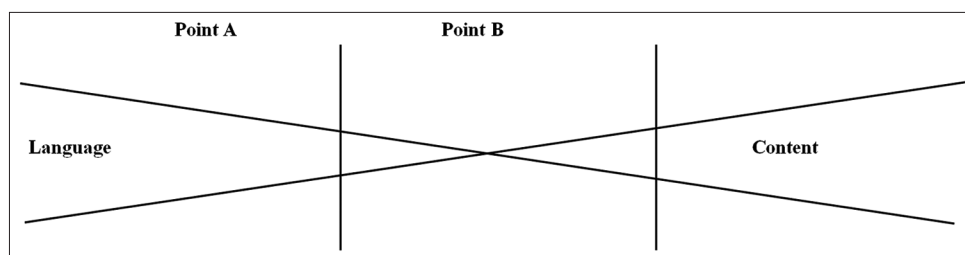


Figure 1. Van Lier's Scale of Language and Content (2005)

Lesson 1	<ul style="list-style-type: none"> • An introduction to mechanics (motion) • Receptive skill: Listening (note taking) • Language: How do you usually take notes? / I usually... / Generally... • Formative assessment
Lesson 2	<ul style="list-style-type: none"> • Measurements (units and systems) • Receptive skill: Reading (skimming and scanning texts) • Formative assessment
Lesson 3	<ul style="list-style-type: none"> • Kinematics (one and two dimensional Kinematics) • Creative skill: Expressing opinions • Language: I think / in my opinion / according to me / as far as I am concerned... • Formative assessment
Lesson 4	<ul style="list-style-type: none"> • Dynamics: Force And Newton's Laws Of Motion • Receptive skill: Listening (taking notes in real time) • Formative assessment
Lesson 5	<ul style="list-style-type: none"> • Applications Of Newton's Laws: Friction, Drag, And Elasticity • Receptive skill: Reading • Formative assessment
Lesson 6 & 7	<ul style="list-style-type: none"> • Discussion and revision (fostering students expressing ideas on note taking) • Language: taking notes is useful, important... / we write things down to / because... • Presenting for assessment (PPT presentation / doing a specific lecture) • Summative assessment

Figure 2. Summary of the lectures of Physics

(p. 15). On the left side of the continuum are courses where language is prevalent. The clearest example of this type of course would be theme-based instruction, where content (in the form of a theme) is a carrier topic for the language being presented and practiced (Snow, Brinton 2017). On the right side of the continuum are courses where “content takes precedence over language” (Van Lier 2005:16). An illustration of such courses would be sheltered instruction, where mastery of content is primary and L2 development occurs through exposure to contextualized language and subject matter. Finally, at the midpoint on the scale, we could place adjunct instruction, where the two courses combined provide a balanced emphasis on both language and content.

POLITICAL REFORMS, LANGUAGE POLICIES AND THE TEACHING OF ENGLISH IN ALGERIA'S HEI

Research on policy, teaching and planning in Algeria provide illustrations of key developments in the mid-twentieth century. Hayane (1989) shed light on the status of English in Algeria after the independence in 1962 by providing a useful anal-

ysis of English textbooks and educational manuals, he pointed that from 1962 to 1975, there was a kind of fear and suspicion regarding the English language as being a neocolonial experience similar to that of France. Education manuals of English in that period were stuffed with Algerian cultural information rather than English culture materials. This enterprise was not really good welcomed by students as they wished to have comparisons between French and British culture instead of having their own culture and history in course books.

The early 1980's were characterized by a vibrant presence of English in Algeria, in a 1984 report issued by the British Council, English was regarded as the third language in Algeria, efforts then were deployed to promote this language in many sectors: economic, sociocultural and both second and higher education. In this vein, British expatriates were in charge of teaching English. The British council also reported that English was about to be the first foreign language to be taught in Algeria to promote social progress and reach a certain quality in teaching in HEI.

Both the British Council and the US Embassy helped promoting English in Algeria. The former ran a Direct

Table 1. Physics unit summary

	Objectives	Instructional strategies		Learning skills
		Vocabulary	Grammar	
Lesson 1 : An introduction to mechanics (motion)	By the end of this lesson, learners will be able to : <ul style="list-style-type: none"> • Get acquainted with technical vocabulary (2 and 3 dimensional motion, oscillation, velocity...) • Develop lexical and grammatical skills through selected activities. • Take notes. 	<ul style="list-style-type: none"> • Word attack skills (contextual guessing) 	<ul style="list-style-type: none"> • word formation • words' combination 	<ul style="list-style-type: none"> • listening skill
Lesson 2 : Measurements (units and systems)	By the end of this lesson, learners will be able to : <ul style="list-style-type: none"> • Distinguish between International System of Units (SI) and derived units. • Develop lexical and grammatical skills through selected activities and a fitting text. • Scanning and skimming texts 	<ul style="list-style-type: none"> • Inferencing 	<ul style="list-style-type: none"> • Function words: 1. Prepositions 2. Present Simple tense 	<ul style="list-style-type: none"> • Reading skill
Lesson 3 : Kinematics (one and two dimensional Kinematics)	By the end of this lesson, learners will be able to: <ul style="list-style-type: none"> • Make the difference between Kinematics and Projectile motion • Make connections between background knowledge and functional knowledge. • Develop their writing skills and reveal their sense of organization, cohesion and coherence. • Write a paragraph in which learners give their opinions and express why they have chosen to have mechanics as major and not another subject. 	<ul style="list-style-type: none"> • Expressing opinions, preferences, needs and desires 	<ul style="list-style-type: none"> • Tenses: simple present • Coordinating conjunctions • Phrases (I would like to, I want to, I am interested in, I think, in my opinion, for me...) 	<ul style="list-style-type: none"> • Writing skill
Lesson 4: Dynamics: Force And Newton's Laws of Motion	By the end of this lesson learners will be able to : <ul style="list-style-type: none"> • Develop narrative and descriptive techniques using the appropriate tenses (present simple and past simple) • Practice and expand vocabulary and phrases associated to motion and Newton's laws • Develop their abilities in taking notes in real time 	<ul style="list-style-type: none"> • listening for gist • Taking notes in real time 	<ul style="list-style-type: none"> • Passive voice • Prepositions: which/who 	<ul style="list-style-type: none"> • Listening skills
Lesson 5 : Applications of Newton's Laws: Friction, Drag, And Elasticity	By the end of this lesson, learners will be about to : <ul style="list-style-type: none"> • Describe elasticity, stress and strain. • Introduce Changes in Length—Tension and Compression: Elastic Modulus. • Describe Bulk Modulus. 	<ul style="list-style-type: none"> • Matching Vocabulary to clues (words) 	<ul style="list-style-type: none"> • Determining the different applications of Newton's Laws 	<ul style="list-style-type: none"> • Reading and speaking skills
Lesson 6&7	<ul style="list-style-type: none"> • Lesson six: Discussing and revising drafts (enhancing students to express ideas on note taking) • Language: taking notes is useful....., it is important because.... • Lesson seven: Presenting for assessment 'summative' (PPT presentation / doing a specific lecture) 			

Teaching of English Operation in Algiers through the British Council that helped training teacher and providing scholarships to study in Britain; British programs aiming to teach English were also broadcasted such *Follow me* and *On we go*. The latter operated the American School and a Cultural Center that contributed to the teaching of English;

scholarships were also awarded to Algerians for study in the US every year.

The late 1980's and the 1990's on the other hand were less prosperous for the teaching of English especially with the Black Decade that marked not the fall of oil prices and the start of the economic crisis in Algeria. During this pe-

riod, Algeria witnessed a civil war that engendered uncertainty and insecurity which led to dramatically decrease the presence of English and partially end British and American supports. Despite this decline, attempts were put forward to replace French with English in fourth grade in some schools by offering English as an option alongside French. However, this reform failed as parents chose French over English, according to Benrabah (1999), one of the many reasons to keep teaching/learning French in Algeria was that this language was easier to acquire and was linked to socioeconomic prosperity.

The 2000's were characterized by the 'reemergence' of English in Algeria with programs offered by the US Embassy namely the SUSI program (Study of the United States Institutes-Global Student Leaders Program) a fully funded five-week intensive academic program in the US for undergraduate student leaders. The NESAS UGRAD program (Near East and South Asia Undergraduate Exchange) a scholarship program managed by the Bureau of Educational and Cultural Affairs, US Department of State for emerging student leaders from underrepresented sectors around the world.

The UK also engages in academic and cultural exchange with Algeria with offering prestigious Chevening scholarships to outstanding Algerians, beside of preparing 500 Algerian PhD students in British universities between 2015 and 2020.

The dominance of English as an internationalization tool has fostered countries all over the world to adopt new language programs, Kirkpatrick (2011) emphasizes the link between modern education and English as a medium of instruction and assures that integrating English at universities allows them to internationalize. Balan (2011) and Wilkinson (2013) agreed on the fact that using English in higher education spheres is beneficial in the sense that it provides a variety of social and educational services.

To globalize the use of English in Algeria, authorities collaborated with the US Embassy in Algeria and measures were taken to spread the teaching of English in HEI. In this vein, the Algerian Ministry of Higher Education collaborated with specialists in TESOL based mainly in Columbia Teacher College to train ELT and ESP teachers to integrating content and language in higher education through online lectures and courses. These lectures were not only meant to university teachers but also to ENS (Ecole Normale Supérieure), and CEILs (Centre d'enseignement Intensif des Langues) i.e. language centers. This enterprise shows the intentions of the US Embassy to "transform the way Algerians learn English at universities and ultimately ensure that all Algerian graduates, professors, and researchers acquire the English skills they need to succeed". (U.S Embassy, 2021).

English is undoubtedly becoming an increasingly important aspect of education around the globe and Algeria is not an exception per say as the Ministry of Higher Education recognizes the growing relevance of English throughout the world. Measures were taken in this vein to promote the use of English at university; the ministry of higher education was the pioneer official administration that orders its different administrative sectors to embrace the use of English by gradually introducing it for official communication. Though

English is not one of the official languages in Algeria, its use was highly encouraged not only by officials but also by teachers and students not to mention that all publications in Algerian academia are done in English.

Balan emphasizes the use of English in higher education as it is considered as "a parallel and unavoidable process resulting in improved international academic communication worldwide" (2011:15). The Englishization of Algerian universities will open doors to students and teachers mobilities all over the world in a more effective and efficient way since mastering English is a must; moreover, it is an open gate to international job and research opportunities as internationalization is mostly achieved through English.

FINDINGS AND DISCUSSIONS

CBI in the EFL Classroom

In order to illustrate this approach, a lesson plan and a unit summary based on a CBI unit are presented. This lesson plan illustrates the underlying principles of CBI. The lesson plan and materials presented here were part of an ESP course within an EFL environment (Physics in our case).

The main objectives of this course is to apply listening strategies in order to understand lectures in conferences or classes, using note taking in real time in order to extract the main ideas in Physics related texts or videos and recognizing the relevance of discourse markers when listening to a Physics related audio.

CONCLUSIONS AND CONSIDERATIONS

CBI has been described as a new paradigm in language education, centered on fostering students' competence in a second or foreign language while advancing in the knowledge of a subject matter; it highly enhances motivation, self-confidence, foreign language proficiency, and cultural literacy. To conclude, we can say that CBI supports contextualized learning; students are taught useful language that is embedded within relevant discourse contexts rather than as isolated language fragments. Hence, students can make greater connections with the language and what they already know. This fosters the practical usability for them.

Implementing CBI in the Algerian Higher Education context is more than necessary especially in light of the recent policies that the Algerian HEIs are going through as it develops learners' reading, listening and writing skills in English and increases their knowledge in Physics through notes taking, skimming and scanning activities.

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